Correlating Cessation with Double Access

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Abstract

This paper investigates an inference (which we call *cessation*) that no state of the kind described currently holds. We propose that this inference occurs in a sentence φ when: (a) φ has stative verb in the past tense and (b) there is a present tense alternative to φ that shares a common reference time concept and is not vacuously false. We show how (a) and (b) correlate with the availability of the so-called *double access* reading, found in present-under-past reports and which we analyze by building on an analysis of tense proposed by Musan (1995). The novelty of our analysis is that the present tense in English is an amalgam of both a relative and a deictic present. More concretely, the English present poses presuppositional constraints on the reference time concept which demand truth at the local evaluation time and at or after the speech time. An important consequence of our analysis is the following conjecture: intuitions about so-called *simultaneous readings* in past-under-past reports are really intuitions about the absence of cessation.

1 Introduction

Suppose I run into my friend Sylvia in the mall one day, and she introduces me to her son, saying:

(1) Here's my son Ralph, he was in the Peace Corps.

From (1), I learn of Ralph's Peace Corps experience. I further infer that Ralph is no longer in the Peace Corps. Altshuler and Schwarzschild (2013) called this: **cessation inference**, i.e. the inference that no state of the kind described currently holds. Although the term is new, the idea is not. Bello (1847: §692), for example, explains the use of the past tense in counterfactuals in terms of the tendency to deduce from a past tense utterance that the corresponding present tense is false.[1]

Now consider the example below:

(2) Jack told me that his mother is American and that his father was Dutch.

From (2), it is natural to infer that Jack's father is no longer alive. This inference begins with a chain of reasoning that starts with a cessation inference. From the past on *was Dutch* we infer that Jack's father is no longer Dutch. Assuming that being Dutch is for life, we deduce that Jack's father must

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[1] More recent discussion of cessation inferences is found in, e.g. Musan (1995, 1997), Iatridou (2000: 248), Hogweg (2009: 189-90) and Magri (2011: §5). See also Tonhauser (2007), for a discussion of what she calls 'change of state': the inference that the described state has ended. As noted by Altshuler and Schwarzschild (2013: 48), it is important to keep these two types of inferences separate; cessation means that not only has that state ended, but also that no state of the kind described obtains currently.

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

43

have died. This chain of reasoning follows discussions of lifetime effects (see Thomas 2012 and references therein). However, notice that in this case the past tense sentence that triggers the cessation inference, *his father was Dutch*, is embedded. So if the cessation inference involves consideration of a present tense alternative, as we will propose (following Bello's lead), it would have to be an alternative in which you have a present tense clausal complement of a past tensed verb. Such a construction is known to give rise to the so-called *double access* reading, which is quite tricky to analyze. We will discuss double access in Section 3, with the ultimate goal of giving an analysis of the cessation inference in (2). We begin, however, with some more background on cessation inferences.

2 Background on cessation inferences

Musan (1995) treats cessation inferences as a quantity implicature. She says that PRES-ϕ asymmetrically entails PAST-ϕ, so uttering the latter implicates the negation of the former ($\neg$PRES-ϕ). Musan (1997: 279) later modifies this view, reasoning that "if Gregory came into existence right now, at this very moment while I utter this sentence, then *Gregory is from America* would be judged true, but *Gregory was from America* would be judged false". She nevertheless maintains the position that cessation inferences are quantity implicatures. In turn, this view has been criticized by Thomas (2012), who considers (3) and (4) below and claims: "…the present tense sentence in [(4)] is not stronger than the past tense sentence in [(3)]. Rather, the two sentences are logically independent (pg. 27)." He concludes that a Gricean analysis is therefore not warranted: "...a consistent implementation of Musan's analysis requires treating the notion of 'more informative' in the exploitation of the Maxim of Quantity as logical entailment rather than contextual entailment, therefore isolating the exploitation of the Maxim from contextual information and treating the Maxim more like a linguistic rule than a general principle of rational behavior (pg. 79)."[2]

(3) John was a graduate student.
(4) John is a graduate student.

Contra Thomas, we adopt Musan's original (1995) claim that sentences like (3) and (4) *are* logically dependent, though we do not adopt her semantics of tense used to derive the dependence. Instead we follow Altshuler and Schwarzschild (2013) in assuming that the entailment from PRES-ϕ to PAST-ϕ follows from a general feature of the truth conditions of stative predications. They argue that if a stative clause like *Greg be American* or *John be a graduate student* is true at a moment m, it is true at some moment m' preceding m. They assume time is dense, so there could be a lower limit on the truth of stative predications without there being an earliest moment.

An observation that fuels the analysis of tense that we ultimately propose is Musan's observation that the cessation inference is absent in the following discourse:

(5) On that day, I was introduced to Gregory and Eva-Lotta. Gregory was from America, and Eva Lotta was from Switzerland (Musan 1997: 272).[3]

Musan explains the absence in terms of an implicit domain restriction on the past tense. When used in this discourse, *Gregory was from America* is true if there is a time t before now, <u>t is within the time of introduction</u> and Gregory-be-from-America is true at t. The present tense alternative maintains the implicit domain restriction and so it amounts to: there is a time t, t includes now, <u>t is within the time of introduction</u> and Gregory-be-from-America is true at t. Given that the time of introduction wholly

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[2] For more insightful discussion of Musan's (1997) analysis, see Magri (2009, 2011).
[3] See Klein (1994: 4) for similar examples.

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

44

precedes the utterance time, these conditions could not be met regardless of Gregory's origins – so negating this alternative adds nothing and no contentful implicature is generated.[4]

We embrace this explanation of (5), differing from Musan in that we take tense domain restrictions to be intensional: properties of times, not times themselves. We call these restrictions **reference time concepts (RefTimeConcepts)**. (6) illustrates the intuition that leads to this move:

(6) Everyone <u>was</u> unusually friendly at the 6th Annual Rowers Meeting. Jack thought that the punch <u>was</u> spiked. Jill thought that the brownies <u>were</u> loaded. In fact, the air <u>was</u> artificially oxygenated.

Every instance of *be* in this discourse is 'about' the same time. Intuitively the following descriptive restriction applies to each past time:

(7) $\lambda w \lambda t.t$ is during the 6th Annual Rower's Meeting in w

This restrictor, we claim, is embedded under the propositional attitude verbs in (6). The actual interval of time that the concept picks out will depend on Jack's and Jill's belief states.

These, then, are the ingredients for a cessation inference:

(8) <u>Ingredients for a cessation inference</u>
    a. A sentence ϕ with a stative verb in the past tense.
    b. A present tensed alternative to ϕ that shares a common RefTimeConcept and is not vacuously false.

We now turn to show how (8) correlates with the so-called *double access* reading. Crucial to our analysis will be the idea that the English present tense poses presuppositional constraints on the RefTimeConcept, making the tense an amalgam of both a relative and a deictic present.

3 Double Access Reading

Suppose that back at the mall, I ask Sylvia where her friend, Mary, is. She replies: "Mary is at home today". Later that day, when I'm at the beach and asked for Mary's whereabouts, I can truthfully say:

(9) Sylvia said that Mary is at home.

Taking our cue from Abusch's (1997) discussion of present complements of *believed*, we observe that (9) is true on the so-called *double access* reading because two conditions are met.[5] To describe those conditions, we will need to refer to the time and world at which Sylvia replied to me at the mall. We symbolize those as $w_@$ and t_{mall} respectively. Below, in (10)-(11), we first give each condition in descriptive terms, and then in more analytical terms, presupposing a theory in which *say* quantifies over world-time pairs compatible with what was said.

(10) <u>Relative Present Condition</u>
    a. If Sylvia's utterance was true, then Mary is at home in $w_@$ at t_{mall}.
    b. For any $<w,t>$ compatible with what Sylvia said: Mary is at home in w at t.

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[4] Cf. Magri (2009, 2011) and Thomas (2012) who propose that the present tensed counterpart is not relevant (rather than not being a viable alternative to its past tensed counterpart).
[5] The name 'double access' reflects the fact that the truth-conditions of (9) can be divided into two key components. Discussions of this reading go back to (at least): Smith (1978), Comrie (1985), Enç (1987) and Ogihara (1989, 1995).

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

45

(11) <u>Deictic Present Condition</u>
   a. If Sylvia's utterance was true, then Mary is at home throughout an interval that includes the time at which (9) is uttered.
   b. There is a description δ such that when δ is evaluated in $w_@$ at t_{mall} it picks out an interval that includes the time at which (9) is uttered. For any $<w,t>$ compatible with what Sylvia said: δ evaluated at $<w,t>$ picks out an interval throughout which Mary is at home in w.

We call (10) 'Relative Present Condition' because it makes the present tense look like a relative present – a sort of Priorian present tense (Prior 1967) that picks out those times compatible with what the subject said. Following Absuch (1997), we refer to such times as *the local evaluation time*. In order to appreciate its force, imagine that prior to the election, Clinton said: "Obama will be the winner in November". After the election in November it would be odd to report that as "Clinton said that Obama is the winner".

We call (11) 'Deictic Present Condition' because it makes the present tense look like a deictic present – a tense that in any context picks out the utterance time of that context. Note that (11)b requires the utterance time to be part of an interval that is picked out by a description δ. We assume that this description is the RefTimeConcept that comes with any tense (recall the discussion in the previous section). In (9), the RefTimeConcept would presumably correspond to *today*, which was part of Sylvia's actual utterance in the mall (i.e. "Mary is at home today"). This would explain why (9) is true if uttered on the same day as t_{mall} but not if uttered on the following day.

In sum we propose that the present tense in English is an amalgam of both a relative and a deictic present. More concretely, we propose that the English present demands truth at the local evaluation time (relative tense component) and <u>at or after</u> the speech time (deictic tense component). In a simple present tense clause like (4) above, the local evaluation time is the speech time so the two components cannot be told apart. The two components also cannot be distinguished when the present is embedded under *will*:

(12) Jack will arrive with a child who <u>is</u> crying.

The local evaluation time for *is* in (12) is a future time introduced by *will*. Since a future time is at or after the speech time, again the two components are indistinguishable. However, when the present is embedded under a past attitude verb, which controls the local evaluation time, the two components come apart.

We demonstrate this by providing the meaning of the complement of *said* in (9) above, namely *Mary is at home*. This meaning is given in (13) below. Note that s^* and w^* denote the speech-time and the speech-world of (9) respectively.

(13) $\lambda t_0 \lambda w_0: t_0 \in \text{RTC}_1(w_0, t_0) \wedge [\exists t' \ t' \geq s^*] \ t' \in \text{RTC}_1(w^*, t_{mall}). \ \forall t \ (t \in \text{RTC}_1(w_0, t_0) \rightarrow$
$$\text{be.at.home}(w_0, t, \text{mary}))$$

The formula above treats the aforementioned relative and deictic components of the present tense as presuppositional constraints on the RefTimeConcept: RTC_1 must include the local evaluation time t_0, as well as some time that is at or after s^*. The present tense also contributes a universal statement to the assertion, namely that Mary's state of being at home in w_0 holds throughout the time interval t described by RTC_1 in w_0 at t_0.[6]

The meaning in (13) allows us to mimic Abusch's (1997) analysis of double access via a new route. Before discussing some possible advantages of our proposal, we note a possible disadvantage. Notice that the presupposition in (13) includes the formula:

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[6] Following the standard terminology, we take t to be the reference time (Reichenbach 1947) or the topic time (Klein 1994).

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

46

(14) $[\exists t'\ t' \geq s^*]\ t' \in \text{RTC}_1(w^*, t_{mall})$

The question that arises for our analysis is: how does t_{mall} get into the truth conditions? It turns out that if that index is filled in by the speech time, the present becomes or can be just a simple relative present. For the most part, the data does not support this option for English. Therefore, we have to stipulate that t_{mall} gets into the truth conditions via binding by the higher tense:

(15) Sylvia PAST λt told me that Mary PRES$_{w@, t}$ is at home.

We leave it for further research as to how to best motivate (15), and offer the following truth conditions of (9)[7] that assume it:

(16) a. $\lambda w_0.\exists t(t < s^* \land t \in \text{RTC}_1(w_0, s^*) \land \text{say}(\text{sylvia}, w_0, t, \varphi))$, where $\varphi = $ (16)b
    b. $\lambda t_0 \lambda w_0\colon t_0 \in \text{RTC}_1(w_0, t_0) \land [\exists t'\ t' \geq s^*]\ t' \in \text{RTC}_1(w^*, t).\ \forall t''\ (t'' \in \text{RTC}_1(w_0, t_0) \rightarrow$
                                                                be.at.home$(w_0, t'', \text{mary}))$

Given Sylvia's original utterance at the mall, namely "Mary is at home today", we assume that RTC$_1$ in the formula above is the *today-function:* it assigns to any w, t, the set of times t' that are on the same day as t. Given the universal statement in the assertion of (16)b, it must have been compatible with what Sylvia said at the mall that Mary continued to be at home throughout the day – in fact, the whole day – not just after Sylvia's utterance at the mall, but also at s^*, i.e. the speech time of (9), when the speaker of (9) is on the beach. This is the hallmark of the double access reading.

Let us now turn to show why the presupposition in (16)b is satisfied. The first conjunct of (16)b is satisfied since t_0 occurs during the day in which t_0 occurs. The second conjunct of (16)b is satisfied as long as s^* (i.e. the speech time of (9), when the speaker of (9) is on the beach) is no later than the end of the day when t, the time of Sylvia's utterance at the mall, occurs. The past on *said* already tells us that Sylvia's utterance at the mall precedes s^*. Therefore, s^* has to be between Sylvia's utterance at the mall and the end of the day in which Sylvia's utterance at the mall was made.[8]

We end this section by briefly noting ways in which our analysis differs from Abusch's. On our account the intuition in (10)a comes from the fact that the English present tense is, in part, a relative present. Abusch captures the intuition with the Upper Limit Constraint (ULC), a blanket constraint that forbids locating an event after the local evaluation time. Abusch needs the ULC to constrain de-re pasts – these are examples where a past time is introduced in an extensional context and then is re-used in an intensional context.[9] Instead of de-re pasts, we build on Altshuler (2008) and think of such cases in terms of sharing RefTimeConcepts analogous to (6), discussed in Section 2. We also think the ULC is too strong. The interaction at the Air Berlin baggage counter below uses a true de-re present and it violates the ULC:

(17) a. Customer: I believe you have my bags.
    b. Employee: Who said I have your bags?
    c. Customer: The stewardess told me you have my bags.
    d. Employee: When did she tell you that?
    e. Customer: On the flight.

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[7] As discussed in section 2, we assume a meaning of the past tense that is essentially what Musan proposes, with the caveat that we take tense domain restrictions to be intensional.

[8] Cf. Heim (1994: 157), where presupposition failures are discussed in light of examples similar to (9) uttered in difference contexts. Space constraints prevent us from showing that our analysis can duplicate Heim's results.

[9] For example in *The defendant was at home at the time of the crime…the jurors clearly believed that he was in the laboratory building*, the tense embedded under *believed* is anaphoric to the time introduced in the first sentence, the time of the crime (see Abusch 1997: 2-3).

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

47

In a typical de-re fashion, the customer uses the present tensed verb *have* in (17)c to speak about a time that is present from his and the employee's perspective, but would have been future from the stewardess' perspective. The bag-having is future relative to the local evaluation time set by *told* – violating the ULC.

In order to account for the use of the de-re present in (17)c, our analysis would assume de-re movement such that the present tense would be evaluated relative to the speech time. In this way, the relative tense component of the present tense would not be in play. Therefore, unlike Abusch, who would post de-re movement for (9), we would posit de-re movement only in cases such as (17)c; what's crucial to account for (9), we believe, is the sharing of RefTimeConcepts.

Let's return now to the deictic condition in (11)b. It is part of the genius of an Abuschian account that the description δ connects the actual context of the speech-report in (9) with the content of Sylvia's utterance. But for this to work, δ must be part of what Sylvia said. In the case examined above, δ was explicitly in the utterance – identified as *today*. But Sylvia might have simply said: "Mary is at home" which would still warrant the report in (9). What would δ be in this case? Note that in Abusch's treatment of double access in belief contexts, the description comes in as an acquaintance relation for a de-re present tense and δ is part of the belief. That is unobjectionable. The problem comes when we try to extend her analysis to speech-reports.[10]

This problem does not arise on our account because δ is the RefTimeConcept that comes with any tense. Thus, if Sylvia's original utterance were simply "Mary is at home", our analysis of (9) would posit a present tense that includes an implicit δ. That is, a RefTimeConcept that describes some salient time interval (which may be accommodated).

The final problem for Abusch's analysis that we mention is that there is no account of what counts as a proper acquaintance relation. As such, some choices—which are allowed by her analysis—lead to incorrect results (see Heim 1994: fn28).[11] This problem translates in our account to the problem of constraining the choice of a RefTimeConcept. In other words, our analysis differs from Abusch in that we owe an account of RefTimeConcept choice, while Abusch owes an explanation of what counts as a proper acquaintance relation.[12]

4 Cessation in embedded contexts

We now return to the cessation implicature discussed at the outset and repeated below:

(2) Jack told me that his mother is American and that his father was Dutch.

The first conjunct embeds a present tense under a past tensed verb. To be felicitous, the RefTimeConcept on *is* must describe an interval that includes the utterance time of (2). Assuming that the RefTimeConcept is shared across the conjuncts, the RefTimeConcept for the second conjunct also

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[10] For more discussion of the difference between speech-reports and belief-reports, see Forbes (1997), Brasoveanu and Farkas (2007), and references therein.

[11] Thanks to Corien Bary for discussing this point.

[12] Thus far, the choice of RefTimeConcept was aided by considering the temporal adverb in the original utterance prompting an indirect report (recall Sylvia's use of *today* that led to the indirect report in (9)). Moreover, in (6), we simply assumed that the RefTimeConcept for the second and third sentences was provided by the first sentence. This assumption is reasonable if we further assume that RefTimeConcept choice—like many other cases of anaphora resolution—often reduces to satisfaction of constraints imposed by rhetorical relations (e.g. Hobbs 1979, Lascarides and Asher 1993, Kehler 2002). In particular, it seems reasonable to say that the interpretation of the tenses in the second and third sentences of (6) is dependent on the interpretation of the tense of the first sentence because both the second and third sentences stand in a parallel relationship (i.e. they are connected via PARALLEL) insofar as they both relate to first sentence via OCCASION. While this analysis may suffice for (6), it is worth noting that it is unlikely that rhetorical relations could solve the problems mentioned by Heim (1994: fn28).

Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

48

meets this requirement and so a present tense could have felicitously been used there. Alas, it was not used; the weaker, past tense was used. Assuming a cooperative speaker, it must be that the present could not be used because Jack's original utterance would not have supported it. And assuming Jack was being cooperative, this would mean that "my father is Dutch" would have been false and that is because his father has passed away.

Compare (2) with what happens in (18):

(18) I met a musician last night. He had a cool accent. He said his father was Dutch and that affected his speech.

Here a cessation implicature is less likely to arise from the past tensed *was Dutch*. We conjecture that the first sentence in (18) sets the RefTimeConcept for subsequent verb phrases. In particular, it restricts tenses to times during my encounter with the musician. This means that the RefTimeConcept on the past tense in *was Dutch* does not satisfy the condition needed for a felicitous present tense alternative. So this works essentially like Musan's example in (5), discussed in Section 2.

5 'Backshifted' and 'simultaneous' readings

In our semantics for *say* and *tell*, we quantify over times compatible with what the subject said. We called those times *the local evaluation time*. Examples (2) and (18) above both embed the sentence *his father was Dutch*. In (2), we understand the Dutchness to completely precede the local evaluation time and in (18), it overlaps the local evaluation time. The first pattern is usually dubbed a "backshifted reading", the second a "simultaneous reading" (Enç 1987: 635). We suggest that the intuition behind the application of these terms is the perception of a cessation implicature in the backshifted case and the non-perception of a cessation inference in the simultaneous case. We think this could explain why the simultaneous reading is harder to find in languages that have a purely relative present tense. Recall that what blocked the cessation inference in (18) was precisely the deictic component of the present tense in English.

As an illustration, consider the Hebrew past-under-past report in (19):

(19) *ha-more   xašav   še avi haya   acbani.*
    The teacher think-PAST that Avi PAST.be anxious
    'The teacher thought that Avi had been anxious'

As the gloss suggests, when a past tensed copula is used in the embedded clause, the impression one gets is that the teacher had a thought he might have expressed by saying: "You were anxious", insinuating cessation of anxiety. We suggest that such is the case because the present tense in Hebrew is a purely relative tense (Sharvit 2003), which means that—when it is embedded under a past tense— it is compatible with a RefTimeConcept that describes a past interval. Consequently, the Hebrew present is a viable alternative to an embedded past in reports such as (19), thereby triggering cessation and leading to the intuition that (19) lacks a "simultaneous reading". In English past-under-past report such as (20), however, the embedded present is not a viable alternative to the embedded past because it has a deictic component and, therefore, no cessation is triggered, leading to the intuition that (20) has a "simultaneous reading."

(20) The teacher thought that Avi was anxious.

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Proceedings of the 19th Amsterdam Colloquium
Maria Aloni, Michael Franke & Floris Roelofsen (eds.)

50