It's not always redundant to assert what is presupposed

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Mayr & Romoli (2016; M&R) make an interesting observation about disjunctive sentences like (1).

(1) Either Mary isn't pregnant, or she is and she is expecting a daughter.

What is puzzling here is that *she is (pregnant)* is redundant. Given that redundant utterances generally give rise to infelicity (Stalnaker 1979, Singh 2007, Meyer 2015), the felicity of (1) is unexpected (see below for details). M&R propose two specific ways to solve this puzzle, making crucial use of (i) the grammatical mechanism of exhaustification (Fox 2007, Chierchia, Fox & Spector 2012) and (ii) incremental computation of redundancy that is blind to the meaning of certain parts of the sentence (Fox 2008, Schlenker 2009). They therefore take sentences like (1) to be evidence for (i) and (ii).

Contrary to M&R, I claim that (1) does not necessarily motivate (i) or (ii), because (1) is only problematic under a specific assumption about presupposition satisfaction and assertion, namely that they refer to the same notion of entailment. It is natural to make this assumption in possible worlds semantics, which M&R assume, but is not necessarily motivated in a more fine-grained theory of meaning. To make this point concrete, I will develop a theory of presupposition satisfaction and redundancy using situations, and show how it explains (1) without (i) or (ii). (In the talk I will also discuss potential problems of M&R's proposals)

Stalnakerian Theory of Redundancy: It is reasonable to assume that assertions should not be redundant. What does it mean for an assertion to be redundant? Since Stalnaker's seminal work, the standard idea is that an assertion of (declarative) sentence S is redundant, if the assertive meaning of S (written $[\![S]\!]$) is already presupposed to be true in the context of utterance. Using the notion of *Context Set* of c (written $\mathsf{CS}(c)$), we can say 'c entails $[\![S]\!]$' to be the case iff $\mathsf{CS}(c) \subseteq [\![S]\!]$, and defined redundancy as follows:

(2) An assertion of sentence S is *redundant* in context c if c entails $[\![S]\!]$.

This gives a straightforward account of the infelicity of discourses like (3).

(3) Mary is expecting a daughter. Her sister is happy. # Mary is pregnant.

Coupled with dynamic semantics, this theory also accounts for redundancy that arises within sentences. That is, understanding 'context' in (2) as 'local context' (Heim 1982, 1983, Schlenker 2009), the infelicity of sentences like (4) can be also understood straightforwardly.

(4) a. #Mary is expecting a daughter, her parents are happy and she is pregnant.
b. #If Mary is expecting a daughter, then her parents must be happy and she is pregnant.

According to the standard understanding of the dynamics of conjunction and conditionals, the local context for *she is pregnant* in each of these examples entails *she is pregnant*.

For disjunction M&R follow previous studies (Beaver 2001, Schlenker 2009, a.o.) and assume that the local context for the second disjunct entails the negation of the first disjunct. The main motivation for this comes from the behavior of presupposition in sentences like (5):

(5) Either Mary isn't pregnant, or Sue is pregnant too.

It is assumed that presuppositions must be satisfied in local contexts by virtue of being entailed by them (Stalnaker 1979, Heim 1983, Beaver 2001):

(6) The presupposition p of sentence S is *satisfied* in context c if c entails p.

Then the lack of presupposition in (5) as a whole shows that the local context of the second disjunct entails the additive presupposition triggered by *too*, which is that Mary is pregnant. This is nicely predicted if the local context of the second disjunct entails the negation of the first disjunct. In light of this, M&R point out, the felicity of (1) is problematic: the negation of the first disjunct *Mary isn't pregnant* entails *she is (pregnant)*.

Proposal: I would like to point out, however, that their reasoning is only valid under the assumption that (2) and (6) refer to the same notion of entailment, but as far as I know, this assumption that (2) and (6) has not been given independent motivation. It probably has not even been questioned, as it is a reasonable assumption to make in possible worlds semantics, where the negation of the first disjunct of (1) is identical to the assertive meaning of *she is (pregnant)*. However, possible words semantics is known to be a crude model of informational content, and a number of more fine-grained alternatives theories have been proposed, such as Situation Semantics (Barwise & Perry 1993, Kratzer 1989, 2002, 2014), Truth-Maker Semantics (Van Fraassen 1969, Fine 2012, to appear), Inquisitive Semantics (Mascarenhas 2009, Ciaderlli, Groenendijk & Roelofsen 2013, Roelofsen 2013). In such theories, it is not at all trivial to make the same assumption. In particular, it becomes a possibility that the negation of *Mary isn't pregnant* is enough to satisfy the additive presupposition in (5), but is not enough to make *she is (pregnant)* redundant in (1). In other words, I propose that the computation of presupposition satisfaction and the computation of redundancy refer to two different notions of entailment:

(7) a. An assertion of sentence S is *redundant* in context c if c **strictly entails** S.
b. The presupposition p of sentence S is *satisfied* in context c if c **loosely entails** p.

These notions of entailment will be explicitly defined below, but the intuition behind this asymmetry is that it is easier to satisfy a presupposition than to make an assertion redundant, because presuppositions can be satisfied by backgrounded information, while assertions are redundant only when they are explicitly on the interlocutors' minds.

Dynamic Situation Semantics: I will use Kratzer's (1989, 2002, 2014) Situation Semantics for the purposes of formalization. The set $\mathbb{S}$ of possible situations is partially ordered by $\sqsubseteq$, and for each $s \in \mathbb{S}$, there is a unique maximal $w \in \mathbb{S}$ such that $s \sqsubseteq w$. Such situations are called *possible worlds*. For any $s \in \mathbb{S}$, I denote the possible world that s is part of by $\omega(s)$. Also, $i \subseteq \mathbb{S}$ is said to be *homogeneous* if for each $s, s' \in i$, $\omega(s) = \omega(s')$; and *heterogeneous* otherwise. For a homogeneous $i \subseteq \mathbb{S}$, we denote the common possible world that the members of i are part of by $\omega(i)$.

I assume that the assertions of presuppositions of declarative sentences are propositions and propositions are upward-closed sets of possible situations (filters), i.e. for any $s, s' \in \mathbb{S}$ if $s \in p$ and $s \sqsubseteq s'$, then $s' \in p$. I also adopt Kratzer's definition of *exemplification*. The idea is that an exemplifying situation s is a witness of the truth of p (cf. exact verification in Truth-Maker Semantics).

(8) Situation $s \in \mathbb{S}$ *exemplifies* proposition p (written $s \Vdash p$) iff for all $s' \in \mathbb{S}$ such that $s' \sqsubseteq s$ and $s' \notin p$, there is an $s'' \in \mathbb{S}$ such that $s' \sqsubseteq s'' \sqsubseteq s$ and s'' is a minimal situation in p.

I will develop a dynamic semantics based on this: Contexts are defined as a set of information states i, each of which is a homogeneous set of situations. The two notions of entailment mentioned above are defined as (9). Notice that (9a) is stronger than (9b).

(9) a. *c strictly entails p* iff for each $i \in c$, there is an $s \in i$ and $s' \sqsubseteq s$ such that $s' \Vdash p$.
b. *c loosely entails p* iff for each $i \in c$, $\omega(i) \in p$.

Asserting (declarative) sentence S in context c amounts to adding an exemplifying situation for S in each $i \in c$ and throwing away any heterogeneous information states, i.e.:

(10) $c[S] = \{\, i \cup \{\, s \,\} \mid i \in c \wedge s \Vdash [\![S]\!] \wedge i \cup \{\, s \,\} \text{ is homogeneous} \,\}$

The examples in (4) can be dealt with using the standard dynamic analysis of conjunction and conditionals (details omitted here). For disjunction, we crucially assume the following meaning.

(11) $c[S_1 \text{ or } S_2] = c[S_1] \cup \{\, i \in c \mid \omega(i) \notin [\![S_1]\!] \,\}[S_2]$

Here, the 'negation of the first disjunct' is understood as c minus those information states i that do not make S_1 true. Then, for (1), the local context for S_2 necessarily loosely entails that Mary is pregnant. However, it is not guaranteed that it strictly entails it, because in order to strictly entail it, each information state in the local context needs to contain a situation that exemplifies the proposition that Mary is pregnant. Therefore, asserting *she is (pregnant)* is not redundant.

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