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A note on grammaticality and analyticity

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There are logically contradictory sentences like "John is smoking and is not smoking" that are grammatical. But much recent work (Barwise & Cooper 1981, von Fintel 1993, Gajewski 2008, Chierchia 2013) assumes that in some cases analytic sentences (i.e. contradictions and tautologies) are ungrammatical *qua* their analyticity. To predict whether an analytic sentence is ungrammatical, Gajewski 2002 defines the concept of L-analyticity that later work by Gajewski (2008) and Chierchia (2013) makes use of.

Consider how Gajewski's (2002) proposal captures the difference between the ungrammatical contradiction (1a) and the grammatical (1b) and (1c).

(1) a. *Some boy except John slept.
b. John is smoking and is not smoking.
c. Every woman is a woman.

Gajewski adopts for the exceptive (1a) an analysis that amounts to (2) (see also Gajewski 2008). (2) is a logical contradiction which following von Fintel he uses to explain its ungrammaticality. Gajewski notes though that (1b) and (1c) are also classical logical contradictions, they are nevertheless grammatical.

(2) $[\exists x \in \{y : \mathbf{boy}(y) \wedge y \neq \mathbf{John}\}\ \mathbf{sleep}(x)] \wedge \neg[\exists x \in \{y : \mathbf{boy}(y)\}\ \mathbf{sleep}(x)]$

Gajewski proposes to capture the difference between (1a) and (1b/c) by appeal to the *Logical Skeleton* of the sentences. To define this notion, he assumes a distinction between logical and non-logical lexical items. Then the logical skeleton of a logical form representation is defined by replacing all maximal constituents that dominate only non-logical lexical items with variables of the corresponding type and binding these variables by a lambda-operator with maximal scope over the sentence. The logical skeleton of (2) is given in (3):

(3) $\lambda\mathbf{N},\mathbf{V} \in D_{et}\ \lambda\mathbf{A} \in D_e\ [\ [\exists x \in \{y : \mathbf{N}(y) \wedge y \neq \mathbf{A}\}\ \mathbf{V}(x)] \wedge \neg[\exists x \in \{y : \mathbf{N}(y)\}\ \mathbf{V}(x)]\ ]$

Gajewski proposes that logical forms and the corresponding sentences are ungrammatical if their logical skeleton is a constant function in the argument positions introduced by replacing non-lexical material. It is easy to verify that (3) is false for any three arguments. But for the grammatical (1b) and (1c), the logical skeletons shown in (4a) and (4b) respectively aren't constant.

(4) a. $\lambda\mathbf{V},\mathbf{V'} \in D_{et}\ \lambda\mathbf{A} \in D_e\ [\mathbf{V}(\mathbf{A}) \wedge \neg\mathbf{V'}(\mathbf{A})]$
b. $\lambda\mathbf{N},\mathbf{N'} \in D_{et}\ \mathbf{every}(\mathbf{N})(\mathbf{N'})$

Though influential and interesting, Gajewski's proposal remains to be worked out in detail. We point out one issue that ought to be considered. Namely, the sentences in (5a) and (5b) are like (1b) and (1c) grammatical. But current semantic analyses predict both to be L-analytic.

(5) a. John is and isn't smoking.
b. Every woman is one.

Specifically, both sentences in (5) involve a variable binding dependency such that a tautology or contradiction arises as shown in (6).

(6) a. $\lambda\mathbf{V}\in D_{et}\ \lambda\mathbf{A}\in D_e\ [\mathbf{V}(\mathbf{A}) \wedge \neg\mathbf{V}(\mathbf{A})]$
b. $\lambda\mathbf{N}\in D_{et}\ [\lambda\mathbf{N'}\ \mathbf{every}(\mathbf{N'})(\mathbf{N'})](\mathbf{N})$

L-analyticity also results if the sentences in (5) are analyzed as cases of ellipsis. In fact, once the licensing of destressing is taken into account, even (1b) and (1c) are L-analytic. Consider (1c). Assuming that destressing of the second occurrence of *woman* is licensed by an entailment relation from the preceding occurrence (Rooth 1992 and others), it is natural to imagine (1c) as involving a logical skeleton like (7), which is tautological for two arguments.

(7) $\lambda\mathbf{N}\in D_{et}\ \lambda\mathbf{N'}\in\{\mathrm{M}\in D_{et}: \forall \mathrm{x}\ \mathbf{N}(\mathrm{x}) \rightarrow \mathrm{M}(\mathrm{x})\}\ \mathbf{every}(\mathbf{N})(\mathbf{N'})$

We leave it for future work to determine whether Gajewski's proposal can accommodate cases such as (5). An alternative avenue of explanation may built on recent empirical work that finds sentences similar to (1b) to be rather acceptable (Alxatib & Pelletier 2011, Sauerland 2011, Alxatib *et al.* 2013, and others).

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[*Author's note following publication*. It recently came to my attention that the point made here was independently discussed by J. Gajewski in a 2009 handout entitled "L-triviality and grammar." In this handout, Gajewski attributes the observation to D. Fox.]