

The Division of Entailments and the Triggering Problem

It is sometimes assumed that an entailment ψ of an atomic sentence S is turned into a presupposition of S if ψ is distinguished or separate in some sense from the rest of the meaning that S expresses. (e.g. Stalnaker 1974 and others). This paper investigates what it could mean for an entailment to be distinguished in this sense. For the purposes of this paper, we concentrate on presuppositions of verbal predicates.

PROPOSAL I argue for the following proposal: An entailment ψ of an atomic sentence S gets *presupposed* iff (a) the falsity of ψ would make the sentence violate the *non-triviality condition* and (b) ψ is *separable* from S . Note that this condition only turns certain entailments of atomic sentences into presuppositions¹. The presuppositions of complex sentences are calculated by applying a projection mechanism (e.g. Heim 1983, Schlenker 2006 or other) that takes the presupposition of the atomic sentence as input.

THE FIRST LEG OF THE PROPOSAL: NON-TRIVIALITY The first leg of the triggering mechanism above is the following pragmatic condition:

- (1) *The non-triviality condition*: A sentence has to be *about* the (semantic) arguments of the matrix verb, where semantic arguments are e.g. the subject, object, time of evaluation.

We will now define *aboutness* in the following way:

- (2) a. ϕ is *about* a , iff there are two models M, M' , such that $M \equiv_a M'$ and $M \models \phi$, $M' \not\models \phi$
b. $M \equiv_a M'$, iff M and M' differ at most in the properties of a .

Intuitively: Consider ‘Fido is black’. The sentence is about Fido, if its truth value depends on the properties of Fido in a given model. Informally then a proposition ψ that is entailed by the sentence S , might be turned into a presupposition if its falsity would prevent the sentence to be about some of its arguments. Take a look at three examples:

- (3) John **knows** that it is raining

a. Take $\psi_2 = \text{John believes that it is raining at } t$. Suppose that $M \not\models \psi_2$, and therefore $M \not\models S$. ψ_2 does contain all semantic arguments, therefore, $\exists M'$, for every a , $M' \equiv_a M$, $M' \models \psi_2$. $\exists M'$, $M' \equiv_a M$, $M' \models S$. Therefore, the falsity of ψ_2 would *not* make (1) violate the non-triviality condition.

b. Take $\psi_1 = \text{it is raining at } t$. Suppose that $M \not\models \psi_1$, and therefore $M \not\models S$. ψ_1 does not contain *John* as an argument, therefore, $\forall M'$ $M' \equiv_{\text{John}} M$, $M' \not\models \psi_1$. Therefore, in every M' , $M' \equiv_{\text{John}} M$, $M' \not\models S$. (I.e., if ψ_1 is false, we learn nothing about John.) Therefore, the falsity of ψ_1 would make (1) violate the non-triviality condition, hence it might be a presupposition.

- (4) John **stopped** smoking at t_{eval} .

a. Take $\psi_1 = \text{John was smoking at } t_2$. ($t_2 < t_{\text{eval}}$). Suppose that $M \not\models \psi_1$, and therefore $M \not\models S$. ψ_1 does not contain t_{eval} as an argument, therefore, $\forall M'$ $M' \equiv_{t_{\text{eval}}} M$, $M' \not\models \psi_1$. In every M' ,

¹ Further, it can be thought of as a semi-lexical process that operates on “canonical sentences”, in the sense that in cases such as *John knows that he is an idiot* the presupposition is derived from a counterpart that does not contain a bound pronoun.

$M' \equiv_{t_{eval}} M$, $M' \not\models S$. (i.e., if ψ_1 is false, we learn nothing about the world at t_{eval} .) Therefore, the falsity of ψ_1 would make (2) violate the non-triviality condition, hence it might be a presupposition.

b. Take $\psi_2 = \text{John is not smoking at } t_{eval}$. Suppose that $M \not\models \psi_2$, and therefore $M \not\models S$. ψ_2 does contain all semantic arguments, therefore, $\exists M'$, for every a , $M' \equiv_a M$, $M' \models \psi_2$. $\exists M'$, $M' \equiv_a M$, $M' \models S$. Therefore, ψ_2 is **not** a presupposition.

(5) John **killed** Bill

Take $\psi_1 = \text{Bill is dead at } t$. Suppose that $M \not\models \psi_1$, and therefore $M \not\models S$. ψ_1 does not contain *John* as an argument, therefore, $\forall M'$, $M' \equiv_{John} M$, $M' \not\models \psi_1$. Therefore, in every M' , $M' \equiv_{John} M$, $M' \not\models S$. Therefore, the falsity of ψ_1 would make (3) violate the non-triviality condition, hence it might be a presupposition.

We might ask now, what distinguishes the last case, in which the entailment that Bill is dead is clearly not a presupposition from the previous cases. Intuitively, the difference is that the entailment that Bill is dead is more “tightly” integrated with the rest of the meaning of the sentence. The notion of *separation* captures this property.

THE SECOND LEG OF THE PROPOSAL: SEPARATION

(6) Given an atomic sentence S and its entailment ψ , ψ is separable from S , if there is a *fallback proposition* F that satisfies $\psi \wedge F = S$.

The *fallback proposition* F is the proposition upon which we would *fall back* if we learned of some entailment ψ of S that it has to be removed from S . We define F in the following way (where ψ is an atomic entailment of S):

(7) $F =$ the closest set of worlds to S , which are *ψ -free* (i.e. F contains both ψ and $\neg\psi$ worlds)

The selection function operates on sets of worlds, instead of a single world, and can be defined as follows: $f(\psi, S) = \{w : \exists w' \in S \text{ st. } w \in \text{the closest } \psi\text{-free worlds to } w'\}$. Notice that the notion of *separation* and *fallback* defined above is closely connected to what is called “logical subtraction” (cf. e.g. Fuhrmann 1996, Humberstone 2000, Yablo 2007, and references therein). The above notion of *separation* can be then thought of as subtraction with recovery.

Consider again the entailment $\psi_1 = \text{Bill is dead}$. The lexical meaning of *kill* includes the causal statement *John’s action caused Bill’s death*, which entails *Bill is dead*. In the closest worlds to S in which ψ is not the case, (the fallback proposition) the causal statement cannot be preserved either, therefore, $\psi \wedge F \neq S$. Hence ψ_1 is not a presupposition. In the paper I show that the entailments that end up being presupposed in the case of verbs such as *know*, *stop* do satisfy the *separability* condition outlined above.

COMPARISON WITH PREVIOUS PROPOSALS

We argue that unlike recent approaches to presupposition triggering by Abusch (2002), Simons (2001), (as well as early remarks by Stalnaker 1974), the present paper does not have to resort to lexical stipulation (as in the case of Abusch), and can avoid overgeneration (in contrast with Simons, Stalnaker).