

PLING 228: Truth-makers: Presupposition and Conditionals

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the monolithic blobs shatter
into myriad fragments

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Presupposition

Triggers: definite descriptions, pronouns, verbs such as ‘stop’ and ‘know’, ‘too’. More

Empirical marks of presupposition:

- Sense that some information is assumed rather than directly stated (or taken to be not ‘at issue’ though that is too broad). This is not true 100% of time a trigger is used, but generally true when one is used without much contextual information or explicit ‘cancelation’.

- (1) John stopped smoking $\searrow$ John used to smoke.
- (2) The king of France is bald $\searrow$ There is a king of France.

Hey-wait-a-minute! test:

- (3)
 - a. John stopped smoking $\searrow$ John used to smoke.
 - b. Hey wait a minute! I didn’t know John smoked.
- (4)
 - a. Elise went to Paris last weekend.
 - b. ?Hey wait a minute! I didn’t know Elise went somewhere last weekend.

- Projection:

- (5) John didn’t stop smoking $\searrow$ John used to smoke.

- (6) If John stopped smoking he’d be happy. $\searrow$ John used to smoke.
- (7) If Elise went to Paris last weekend, she’s happy $\searrow$ Elise went somewhere last weekend.

These are examples where a presupposition survives in an environment when normal presuppositions do not:

- (8) Either John didn’t use to smoke, or he stopped smoking.

A standard and fairly adequate way to explain presuppositional projection is by using a trivalent semantics with a strong Kleene definition of the connectives. Supposing A has presupposition $\underline{A}$ and B has no presupposition, the Strong Kleene system gives these predictions for example: $B \rightarrow A \searrow B \rightarrow \underline{A}$ and $A \vee B \searrow \neg B \rightarrow \underline{A}$.

Pragmatic Presupposition and Common Ground

Stalnaker [1974] gave a widely accepted story of how presupposition relates to conversational dynamics. It is heavily dependent on the possible-worlds framework, so it is worth thinking how we can translate it into a truth-maker based system. Recall that for Stalnaker common grounds are simply the set of possible worlds not ruled out by the common assumptions in a context (or alternatively the set of propositions that constitute the common assumptions, but closed under logical entailment). His notion of pragmatic presupposition is just that any proposition in the common ground (i.e. entails any that is a superset of the common ground).

Linguistic presupposition by contrast is a feature of a sentence S that $S \searrow p$ iff S is infelicitous if uttered in a common ground that does not contain p . The process of accommodation of course, makes this hard to test, but this is meant to be targeted by, e.g, the hey-wait-a-minute test which can only target accommodated information not asserted information. Stalnaker suggests this relates to trivalence because it is infelicitous to utter a sentence S if it is undefined in some world in the common ground.

Note that Stalnaker’s account of ‘pragmatic presupposition’ contrary to popular belief, says nothing pragmatic about the origin of presuppositions. These can come about bi-trivalence, though Stalnaker also thinks some presuppositions arise due for pragmatic reasons. (He gives such an account

for the presupposition of ‘know’ appealing to Gricean manner maxims). Rather the whole point of the notion is that it be compatible with different accounts of the origins of presupposition. (He suggests a derivation of projection facts based on this account, but it is highly unclear how this works. See Schlenker [2006] and other literature for extensive discussion.)

Dynamic projection

The dynamic approach builds on Stalnaker by using the semantics of connectives to handle projection fact and using the dynamic account of quantification to deal with presupposition projection under quantifiers. We now define certain CCPs as undefined when applied to certain contexts (where contexts now might include variables assignments). The clauses (discussed in first half of term) produce very good predictions for presupposition projection, as discussed by Heim [1983]. For criticisms and reformulation see Schlenker [2006] and Rothschild [2011].

Presuppositions in Truthmaker Semantics

How do we think about presuppositions on a truth-maker approach? There are a few questions:

- (1) How do we model the semantics of presupposition triggers.
- (2) What links the semantics/pragmatics of presupposition triggers to their conversational effect. (Bridging principles, in my terminology)
- (3) How do we predict the patten of presupposition projection?

The hope is that once we explain (1) and (2) in fairly principled ways we will get (3) for free. This is true, for instance, in a trivalent approach with Stalnaker’s bridging principles (order effects aside).

Semantic Presuppositions

On a non-world based approach a natural idea is to say that a lexical item is presupposition just in case there is a part p shared by both its positive and negative verifiers. We’ll stick with the propositional case for now.

An atomic sentence s presupposes p_s if and only if p_s is conjunctive part of every member of $|s|^+$ and every member of $|s|^-$.¹ If s just has a single non-disjunctive truth-maker t and false-maker f then this reduces to the condition that $p_s \sqsubseteq t$ and $p_s \sqsubseteq f$.²

Example: S = ‘John stopped smoking’. u = state verifying John used to smoke, n state verifying John not smoking now, y state verifying John still smoking.

$u \sqcup n \models S$

$u \sqcup y \models S$

Bridging principles

What relates lexical presuppositions to the pragmatics of conversation? There are two routes here. One is to go directly by a bridging principle relating semantic values to the conversational phenomenon of presupposition. The other is to reconstruct a notion of common ground and define a notion of pragmatic presupposition in terms of it. I’ll pursue the first route as it is leaner.

Following Fine [2015], we’ll understand the unilateral proposition expressed by a sentence to be the set of its exact verifiers, and the bilateral proposition to be the ordered pair of its verifiers and its falsifiers. So any assertion of a sentence S , puts forward the proposition $|S|^+$ (we’ll now talk about sentences and propositions interchangeably. We’ll say that a bilateral proposition P presupposes Q if Q is the smallest set such that a member of Q is made true by any element in either side of P .³

Assuming any statement is taken to ‘entail’ any of its conjunctive parts we immediately observe some projection behavior. It follows immediately that a statement and its negation both have the same presuppositions.

¹ P is a *conjunctive part* (following Fine [2015]) of Q iff i) for all $q \in Q$, there is a $p \in P$ and $q \sqsubseteq p$, and ii) for all $p \in P$ there is $q \in Q$ such that $p \sqsubseteq q$ (we can also say that P *contains* Q).

²Note that we drop the assumption that Fine [forthcoming] calls exhaustivity: “Exhaustivity: Any possible state is compatible with a verifier or with a falsifier (i.e., each possible state is compatible with a member of V [the set of verifiers] or with a member of F [the set of falsifiers]’).

³This is not definable in terms of Fine’s notions of conjunctive and disjunctive parts as far as I can tell.

What about disjunction. Consider non-presuppositional X with (with truth-maker X^+ and false maker X^-) and presuppositions S with truth-maker $s^+ \sqcup p$ and false-maker $s^- \sqcup p$.

$$\begin{aligned} |X \vee S|^+ &= \{x^+, s^+ \sqcup p\} \\ |X \vee S|^- &= \{x^- \sqcup s^- \sqcup p\} \end{aligned}$$

Here we can see the presupposition is $\{x^+, p\}$. In classical terms this is the same as the presupposition predicted by standard theories (e.g. Karttunen, Heim, Trivalent): $\neg X \rightarrow p$.

So far we have seen that in the propositional case we get the same predictions that the standard accounts give on presupposition projection.

Proviso Problem

It's argued that presuppositions are not actually disjunctive. For instance this presupposes that Bob is tired.

(9) John is in Thailand or he knows that Bob is tired

First, we have a set of proposition which we call the conversational background (this is, then, a set of sets of truth-makers). When a sentence S is asserted, normally $|S|^+$ is added to the conversational background. If S has a presupposition then there are two cases:

- If the presupposition of S is already in the conversational background then $|S|^+$ is added.
- If not, the strong presupposition of S is first added then $|S|^+$ is added. (Accommodation)

The strong presupposition of S is defined as the maximal subset P' of the presupposition of S , P such that for every element p' in P' there is some element in both $|S|^+$ and $|S|^-$ that contains p' .

Let's go through some examples: The strong presupposition of $X \vee S$ is $\{p\}$. Note that we now deal with the famous version of this problem proposed by Bart Geurts. $Q = 'i \text{ knows that } X \vee P'$ (where P has p as its unique truth-maker) and $X \vee S$ have the same presuppositions namely $\{x^+, p\}$. The problem Geurts posed is we cannot handle with the proviso problem by simply modifying the rule of accommodation (as above) since exactly the same material needs to be accommodated differently.

This is not true on our story since these two sentences do not share the same strong presuppositions. For $\{x^+, p\}$ is the strong presupposition of A knows that $X \vee P$. Why is this? One idea: A preference for accommodating non-disjunctive (or minimally disjunctive) information. Thus accommodate non-disjunctive information when it covers both cases of truth-maker and false makers.

Well $|Q|^+ = \{x^+ \sqcup k^+, p \sqcup k^-\}$, while $|Q|^- = \{x^+ \sqcup k^-, p \sqcup k^-\}$, and both the presupposition and strong presupposition of this is $\{x^+, p\}$.

Why do we accommodate strong presuppositions? Perhaps it's a matter of simplicity, perhaps something more can be said, but frankly this looks like the best solution to the proviso problem I have seen.

Note in cases like 'If John is a scuba diver we'll bring his wetsuit', we plausibly do not need to accommodate since the idea that scuba divers have wetsuit might be common knowledge.

Quantifiers

In the same way we can also handle a traditional problem for trivalent approaches to presupposition about the presupposition of quantified sentences. Note the differing predictions between dynamic and trivalent approaches on the presuppositions of quantified sentences:

(10) Every student stopped smoking.

Dynamic theories predict: 'Every student stopped smoking' $\searrow$ 'Every student used to smoke'

Trivalent theories predict: 'Every student stopped smoking' $\searrow$ 'Every student used to smoke or at least one student used to smoke and didn't stop smoking'

Treating universal quantification as conjunction the truth-maker approach agrees with the dynamic approach. Despite controversy here, I take this to be a good result.

Conditionals

Are we really going to make it here? Here are some crucial principles Kit [2012] take to govern conditionals.

Substitution (given that A and A' are logically equivalent):

$$\frac{A \rightarrow C}{A' \rightarrow C}$$

Infinitary Conjunction:

$$\frac{A \rightarrow C_1, A \rightarrow C_2 \dots}{A \rightarrow C_1 \wedge C_2 \dots}$$

These and some other (less controversial principles) gives us what Fine takes to be an unacceptable result (the infinite rocks/infinite matches case): Entailment, Transitivity, and Disjunction.

Note that Lewis's semantics in rejecting the limit assumption rejects Infinitary Conjunction (think of the 1 inch case).

I'm not going to go through this in detail, but rather focus on his replacement semantics. As discussed before, Fine instead wants the following principle:

Simplification:

$$\frac{A \vee B \rightarrow C}{A(B) \rightarrow C}$$

What he gives is a semantics which validates Infinitary Conjunction, Entailment, Transitivity, Disjunction, and Simplification, but not Substitution.

We have as before the notion of exact verification $s \models A$ iff $s \in |A|^+$. We'll add to this the notion of intact verification: $s| > A$ iff s has a part that exactly verifies A .

The semantics for counterfactuals he gives is stated as follows in terms of worlds: $A \rightarrow C$ is true at w iff u inexactly verifies C whenever t exactly verifies A and u is a possible outcome of t relative to w .

So $A \rightarrow C$ is true at w iff $u| > C$ whenever $t \models A$ and $t \rightarrow_w u$ where $\rightarrow_w$ means that u is a possible outcome of t (outcomes may be as large as world-sates but they may also be smaller).

As before we want might want to eliminate reference to worlds at all. In Fine [forthcoming] we get this:

$s \models A \rightarrow C$ iff:

i) for each t for which $t \models A$ there is an s_t and a u for which $t \rightarrow_{s_t} u$

ii) for any state t for which $t \models A$ and any state u for which $t \rightarrow_{s_t} u$, $u| > C$

iii) s is the fusion of $\{s_t : t \models A\}$;

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