

Presupposition

Review

Entailment vs presupposition vs (conversational) implicature

1 Definite descriptions

- (1) The black cat is in Texas.

A first approximation:

- (2) $[[\text{the}]] = \lambda P_{\langle e,t \rangle} . \lambda Q_{\langle e,t \rangle} . |P| = 1 \text{ and } P \subseteq Q$
(using set notation for the predicates P and Q)

What meaning do we predict for (1)? Is that what (1) means?

- (3) The marker is green.
(4) a. I took the elevator in AS5.
b. I took the escalator in AS5.

“The P ” presupposes that there is a unique individual that satisfies P , and refers to that individual.

A proposal, in two parts:

1. Sentences with unsatisfied truth values are neither true nor false; let’s give them a *third truth value*, #.
2. “The P ” is type e . When its presuppositions are not satisfied, it returns a special value, $\#_e$. When a predicate takes $\#_e$ as an argument, it returns #.

To implement this, we borrow the ι (iota) symbol from logic:

$$(5) \llbracket \text{the} \rrbracket = \lambda P_{\langle e,t \rangle} . \iota x . P(x)$$

$$(6) \llbracket \iota u . \phi \rrbracket^{M,g} = \begin{cases} d & \text{if } d \text{ is the unique value for } u \text{ that makes } \phi \text{ true}^1 \\ \#_e & \text{otherwise} \end{cases}$$

Exercise:

(7) I like the black cat.

Food for thought:

- (8) a. I saw John's sister.
b. Mary is John's sister.
- (9) The markers are green.

2 More on

- $(\neg \#) = \#$

- (10) a. The Korean stall at the Deck is popular.
b. The Korean stall at the Deck isn't popular.

- $(\# \vee p) = \#$

- $(\# \wedge p) = \#$

What about $\forall u . \phi$ or $\exists u . \phi$ where ϕ is # for some values of u ?

- (11) a. Every boy loves his cat.
b. Some boy loves his cat.
c. No boy loves his cat.

¹From *IFS* p. 269: $\{k : \llbracket \phi \rrbracket^{M,g[u \mapsto k]} = 1\} = \{d\}$

3 Other presupposition triggers

We refer to expressions that introduce presuppositions as *presupposition triggers*.

Exercise:

What are the presuppositions raised by the following sentences? Which word or words seem responsible for introducing the presupposition? (some exx from *IFS*)

- (12) a. Every blue unicorn is kind.
 b. Neither candidate is qualified.
 c. Both candidates are qualified.
 d. Emily biked to school again.
 e. Ed is glad we won.

We introduce the ∂ (partial) operator to encode presupposition requirements.

$$(13) \quad \llbracket \partial(\phi) \rrbracket^{M,g} = \begin{cases} 1 & \text{if } \llbracket \phi \rrbracket^{M,g} = 1 \\ \# & \text{otherwise} \end{cases}$$

$$(14) \quad \llbracket \text{both} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda Q_{\langle e,t \rangle} . [\partial(|P| = 2) \wedge \forall x [P(x) \rightarrow Q(x)]]$$

$$(15) \quad \llbracket \text{again} \rrbracket \approx \lambda v_t . \partial(v \text{ was true before}) \wedge v$$

$$(16) \quad \llbracket \text{neither} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda Q_{\langle e,t \rangle} . [\partial(|P| = 2) \wedge \neg \exists x [P(x) \wedge Q(x)]]$$

$$(17) \quad \llbracket \text{every} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda Q_{\langle e,t \rangle} . [\partial(\exists x . P(x)) \wedge \forall x [P(x) \rightarrow Q(x)]]$$

Exercise: Compute one of the examples in (12a–d).

4 Presupposition projection

A defining property of presuppositions is that they “project”: they are requirements that hold regardless of exactly what claim is at issue. This is implemented by our approach here: $(\neg\#) = \#$. But sometimes, it appears that presuppositions don’t project:

- (18) The king of France is wise. \leadsto France has a king
- (19) a. If France has a king, then the king of France is wise. $\not\leadsto$ France has a king
b. Either there is no king of France or the king of France is wise. $\not\leadsto$ France has a king
- (20) a. If France is not in the war, then the king of France is wise. \leadsto France has a king
b. Either France is lucky or the king of France is wise. \leadsto France has a king

Karttunen 1973 describes conditionals and disjunction as *filters*: some presuppositions project, but some do not.

- (21) **Karttunen’s generalization for conditionals:** (IFS: 283)
When the antecedent of the conditional (the *if*-part) entails a presupposition of the consequent (the *then*-part), the presupposition gets filtered out.

References

Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic Inquiry* 4:169–193.