

1. Types of Inferences

1.1. Entailment

“A entails B” means roughly:

- whenever A is true, B is true
- in any situation where A is true, B is also true
- the information that B conveys is contained in the information A conveys
- A and/but not B is contradictory (can't be true in any situation)

For example, (a) entails (b) in the following:

- (1) a. Erik is sitting on the lawn.
b. Erik is sitting.

We can show this by showing that *A and not B* is contradictory:

- (2) Erik is sitting on the lawn, and it's not the case that Erik is sitting.

If A entails B, then we say that A is more informative, or stronger, than B, and that B is less informative, or weaker, than A.

From last time:

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| (3) a. Jessica saw Peter. | b. Jessica saw someone. |
| (4) a. Saiko won the lottery. | b. Saiko is happy. |
| (5) a. Some students left early. | b. Most students left early. |
| (6) a. I like you a lot. | b. I don't love you. |
| (7) a. Sara is a little dog. | b. Sara is a dog. |
| (8) a. You are a horrible liar. | b. Someone horrible is a liar. |
| (9) a. There were many casualties. | b. There were some casualties. |

New examples:

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| (10) a. Nigel has 14 children. | b. Nigel has at least one child. |
| (11) a. We stayed up all night. | b. We saw the sun rise. |
| (12) a. This is not a fun activity. | b. This is not an activity. |
| (13) a. Erik is not sitting. | b. Erik is not sitting on the lawn. |

- (14) a. If Sara is a little dog, she can get on the plane.
(15) b. If Sara is a dog, she can get on the plane.
- (16) a. Everyone who is sitting should be careful.
(17) b. Everyone who is sitting on the lawn should be careful.
- (18) a. Anyone who is sitting should be careful.
b. Anyone who is sitting on the lawn should be careful.
- (19) a. If I like it, you're hired.
b. If I love it, you're hired.
- (20) a. If there are some casualties, you should retreat.
b. If there are many casualties, you should retreat.

1.2 Implicature. Grice (1975, 1978).

Not all inferences are instances of entailment. “Implicatures are inferences based on both the content of what has been said and some specific assumptions about the co-operative nature of ordinary verbal interaction.” Levinson (1983)

Interlocutors (participants in a conversation) expect each other to converse in a co-operative way. We don't always follow the maxims, but “wherever possible, people will interpret what we say as conforming to the maxims on at least some level.”

The co-operative principle: make your contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged

The maxim of Quantity: (i) make your contribution as informative as is required for the current purposes of the exchange; (ii) do not make your contribution more informative than is required.

The maxim of Manner: be perspicuous, and specifically: (i) avoid obscurity, (ii) avoid ambiguity, (iii) be brief, (iv) be orderly

Being cooperative involves, among other things, making the most informative statement you can (by the *maxim of Quantity*). In effect, when a speaker uses a weaker expression from a scale of informativeness, s/he implicates that a stronger expression does not hold:

- (21) a. I like you. b. I don't love you.
 (22) a. There were some casualties. b. There were not many casualties.

In (22), the implicature arises because *many* is more informative than *some*, and thus, when a speaker uses *some*, s/he implicates 'not many'.

Many is more informative than *some*: (a) entails (b) in the following:

- (23) a. There were many casualties.
 b. There were some casualties.

As expected for entailments, overtly denying the inference yields a contradiction:

- (24) There were many casualties, but it's false that there were some casualties.

Properties of implicatures: -defeasible/cancelable
 -reinforceable
 -calculable

Unlike entailments, implicatures are *defeasible* (can be overtly denied):

- (25) There were some casualties, in fact there were many.

That (25) is not a contradiction indicates that (22b) is not an entailment.

Implicatures are also *reinforceable*: they can be explicitly stated without sounding redundant:

- (26) There were some casualties, but not many.

Compare this with entailments, which sound redundant when explicitly stated:

- (27) There were many casualties, but not some.

Finally, implicatures are calculable. If A implicates B, there must be an explanatory account of that relation that invokes general principles of conversation. For instance, the implicature in (22) is a consequence of the Maxim of Quantity, which states that one should make the strongest statement possible.

- (28) If she had dinner with some of his students, he knows what happened.
 (29) Anyone who has two children is eligible.

1.3 Presupposition.

Presuppositions:

-*Survive*, or *project* out of certain embedded contexts (e.g., negation, possibility modals, *if*-clauses). That is, when a sentence with a presupposition is embedded in a larger structure, the larger structure inherits the presupposition.

-Are taken for granted as already agreed upon among the participants in a conversation (or are easily accommodated)

How to test for presuppositions: Suppose that uttering A would normally commit the speaker to B. Try embedding A in the following:

- Negation (Neg): "It is not the case that A"
- Modal of possibility (Poss): "Maybe A"
- Conditional antecedent (If): "If A, then C"

If B projects — i.e. the test sentence still commits the speaker to B — then A presupposes B. For example:

- (30) a. My brother called. b. Someone called.

Projection tests: Neg: My brother didn't call.
 Poss: Maybe my brother called.
 If: If my brother called, we should leave.

Conclusion: B does not project, thus A does not presuppose B.

- (31) a. My brother called. b. I have a brother.

Projection tests: Neg: My brother didn't call. $A \rightarrow B$
 Poss: Maybe my brother called. (poss A) $\rightarrow B$
 If: If my brother called, the deal is on. (if A...) $\rightarrow B$

Conclusion: B projects, so A presupposes B.