Defining Factivity

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Factive vs. Non-factive predicates
(Kiparsky & Kiparsky 1970)

- factive (for example, know/be aware (of), ignore, comprehend, learn, realize, discover, regret, resent, deplore, etc.);
- non-factive (for example, believe, assume, suppose, claim, conclude, etc.).

The distinction was based on the observation that the choice of complement type in English (that-clause, gerundial construction, adjectival nominalization) is predictable from the “PRESUPPOSITION by the speaker that the complement of the sentence expresses a true proposition.” (Kiparsky & Kiparsky 1970: 143)
How Factivity affects Syntax

- Factive verbs select a richer structure:

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NP               NP
  S               DP
      S

THE FACT

Non-factive      Factive
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“Factive islands”

- Non-factive verbs allow extraction of both arguments and adjuncts from their complement clause (1a, b);
- Factive verbs allow argument extraction, but not adjunct extraction (2a, b):

(1) Non-factive
   a. What does she think that John bought \( t_i \)? [arg extr]
   b. [Why] does she think that John bought that car \( t_i \)? [adj extr]

(2) Factive
   a. What does she regret John bought \( t_i \)?
   b. *[Why] does she regret John bought that car \( t_i \)?
How Factivity is defined

- A cognitive relation between speakers and propositions → by using a factive predicate, the speaker is presupposing that the proposition embedded under the factive predicate is a true proposition.

Stalnaker’s notion of *speaker presupposition* (Stalnaker 1972, 1973)
● Factivity of *know*: a truth-conditional relation between two propositions.
● Knowledge is factive → “X knows that p” classically entails p.
A combined consideration of these notions, the pragmatic and the semantic one, is needed to understand how factive predicates are.
Factives – a non-uniform class
Cognitive factives vs. Emotive factive

- **Cognitive factives vs. Emotive factives** (Klein 1975)
  - considers the kind of attitude the factive predicate denotes.

- Cognitive factives: *know, discover, realize, find out, understand*, etc.

- Emotive factives: *regret, deplore, resent, be glad, be sorry*, etc.
True factives vs. Semifactives

- True factives vs. Semifactives (Karttunen 1971)
  - considers projective behaviour.

- Presuppositions project (= they are constant) under negation, questions, conditionals, and modal operators.
• Karttunen (1971) pointed out that *some factive presuppositions may vanish, instead of being constant, in some environments*, despite the assumption that “Whatever a sentence with a factive predicate presupposes, the presupposition ought to remain no matter whether the main sentence is a negative assertion, an interrogative sentence, or the antecedent of a conditional construction.” (Karttunen 1971: 62-63; emphasis mine)
**Negative environments** are not problematic: all the examples in (3) presuppose the truth of the embedded proposition.

(3) a. regret
b. John didn't realize that he had not told the truth.
c. discover

(Example (22) in Karttunen 1971)
True factives vs. Semifactives

- In other environments factive verbs behave differently.
- In questions, the factive presupposition goes through in (4a) and (4b), but not in (4c):

(4) a. regret
    b. Did you realize that you had not told the truth?
    c. discover

(Example (24) in Karttunen 1971)
True factives vs. Semifactives

- In **conditionals**, the factive presupposition survives in (5a), but neither in (5b) or in (5c):

(5) a. **regret**
   b. If I **realize** later that I have not told the truth,
   c. **discover**
      I will confess it to everyone.

(Example (25) in Karttunen 1971)
True factives vs. Semifactives

- In **modal environments**, from (6a) one can infer the truth of the complement, whereas there is no such **necessary relationship** in (6b) and (6c):

(6) a. regret

b. It is possible that I will **realize** later that I have not
c. **discover**

told the truth.

(Example (26) in Karttunen 1971)
True factives vs. Semifactives

**Factives**
- True factives do not lose their factivity in questions, conditionals and modal environments
  - Ex.: *regret*

**Semifactives**
- Semifactives lose their factivity in questions, conditionals and modal environments
  - Ex.: *realize, discover, find out*
Karttunen 1971: 60

- **True factives** (ex. *regret*): It is possible that $X$ \textsc{factv} that $p$, then it must be true that $p$.

- **Semifactives** (ex. *discover, realize*): It is possible that $X$ \textsc{factv} that $p$, then $p$ is not necessarily true.

- From the fact that someone may regret that $p$, we must conclude, according to Karttunen, that $p$ is the case. By contrast, from the fact that someone may discover or realize that $p$ we cannot conclude by necessity that $p$ is in fact the case.
The problem with Karttunen’s analysis

- Regret is not veridical.

(7) Falsely believing that he had inflicted a fatal wound, Oedipus regretted killing the stranger on the road to Thebes. (Klein 1975: B12)

(8) Mary, who was under the illusion that it was Sunday, was glad that she could have a long lie-in. (Klein 1975: B12)

- The factive predicates regret and be glad do not entail the truth of the embedded proposition: both (7) and (8) can be true although the embedded proposition is false.

Veridicality is not the key to explain differences in projective behaviour!
Projection tests address *information structure level* and are a diagnostic for the discourse status of implications ("at issue" or "not at issue") rather than for presuppositionality (Potts 2005, Chemla 2009, Tonhauser et al. 2013, Abbott 2016, Simons *et al.* 2017).
All cognitive factives, differently from emotive factives, are assertive (Hooper 1975), they may embed asserted content, “at issue content,” that is, content that answers the question under discussion and might be challenged in the conversational exchange (Simons 2007, Simons et al. 2017).

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• Karttunen’s projective tests on factives just show that it is easier to embed propositions expressing “at issue content” under cognitive factives than under emotive factives.

• Why?
• My hypothesis is that emotive factives tend to embed backgrounded information (= not-at-issue content) because of their semantic complexity (following a proposal put forward by Erteschik-Shir (1973: 84 ff.) for extraction with verbs of saying).

• The generalization would be that the more semantically heavy an embedding predicate is, the more difficult it is for this predicate to embed at-issue content.
Regret’s semantic complexity

- To regret that $p$ is to believe that $p$ and to believe that $p$ is undesirable. In other words, to regret is to hold a double belief: the belief that $p$ is the case and the belief that $p$ has a negative value (hence $p$ is undesirable).

- As Klein (1975) pointed out, emotive factives contain a counterfactual aspect (in this sense, see also Schlenker 2005):

  
  ‘[..] if someone is annoyed that $p$, he believes that $p$ is undesirable, and that things would have been better if $\neg p$ had turned out to be the case.’” (Klein 1975: C6)
- Regret, when compared to other verbs of attitude such as know, realize, remember, is semantically more complex as it actually denotes a **double attitude**. In this sense, we can say that emotive factives are semantically heavier than cognitive factives.

- The hypothesis put forward is that this might account for differences in projective behaviour: complements to emotive factives tend to be not-at-issue because of the *heaviness* of the matrix predicate, which means that the factive presupposition tends to project more easily with emotive factives than with cognitive factives.
Know vs. Regret
Know is veridical

- Following Wilson (1972), it seems quite straightforward that (9) is necessarily true:

  (9) If John doesn’t live in Italy, then no one knows that he lives in Italy.

- That is, (10a) entails (10b):

  (10) a. Someone knows that John lives in Italy.
      b. John lives in Italy.
A sentence like (11) is not necessarily true:

(11) If John doesn’t live in Italy, then no one regrets that he lives in Italy.

That is, (12a) does not entail (12b):

(12) a. Someone regrets that John lives in Italy.
   b. John lives in Italy.

If someone (X) regrets that p, p is not necessarily true as X’s regret may be grounded on a false belief.
Semantic factivity vs. Pragmatic factivity

- *Know* is **semantically factive**, its factivity being also a truth-conditional relation between the sentence S and the embedded proposition p: when we say that X knows that p, and we intend to ascribe knowledge, the sentence we utter cannot be true unless p is true nor felicitous unless we believe that p is true.

- On the other hand, *regret* is **pragmatically factive**, its factivity being only a relation between the speaker and the embedded p: when we say that X regrets that p, our utterance of the sentence “X regrets that p” usually (in most cases) shows that we believe that p is true, but not necessarily so: the sentence we utter can be both true even though p is false and felicitous even though we do not believe that p is the case.
Recent experimental works support this analysis (Zehr & Schwarz 2016, 2018, Djärv et al. 2017): these experiments confirm the hypothesis that cognitive factives entail the truth of their complement, while emotive factives do not.
Conclusion

- A redefinition of factivity needs to take into account a semantic and a pragmatic notion of factivity: factivity, in the cases of know and regret, has to be intended in two different senses, a semantic one in the case of know, and a merely pragmatic one in the case of regret.

- In the case of know, factivity is also a classical entailment: if S then necessarily p, hence p is a truth-condition of S. In the case of regret, the relation between S and p is not truth-conditional, as S can be true even though p is false.

- One cannot have knowledge of something false, while it is perfectly possible to have a regret founded on a false belief.
Tack!
References