Projection and Ludics

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LENLS 8 – 1-2 December 2011

1 Projection

Projective Material

(1) a. Paul knows that the Earth is round.
b. Does Paul know that the Earth is round?
c. Maybe Paul knows that the Earth is round.
d. Paul doesn't know that the Earth is round.
e. $\underset{psp}{\rightsquigarrow}$The Earth is round.

- Each of the utterances (1-a)-(1-d) entail (1-e)
- The content (1-e) is said to be *projected*

Projection
A semantic content p is *projected* if it is conveyed by an utterance, even though it is embedded in a context that usually alters truth-conditions (e.g. negation, interrogation...)

Projective types of contents

- Projectivity has traditionally been considered to be the hallmark of presupposition.
- Other types of material also show a projective behaviour:
  - Conventional implicatures (Potts, 2005):

    (2) a. John, that bastard, took my handbook.
    b. John, that bastard, didn't take my handbook.
    c. $\rightsquigarrow$John is a bastard.

  - Conversational implicatures (Roberts & Tonhauser, 2011):

    (3) [*The car's tank is almost empty.*]
    a. There is a garage round the corner.
    b. There might be a garage round the corner.
    c. $\rightsquigarrow$A garage is a potential solution to the problem.

  - ...

Traditional view

- Karttunen (1973): contexts can be divided between *holes* (that project presuppositions), *plugs* (that block projection) and *filters* (that affect/weaken the content)
- ⇒ One and the same context always behave in the same way, e.g.
  - Factive verbs are holes: always project
  - Verbs of 'saying' (e.g. *say, accuse, mention...*) are plugs: they do not let presupposition through
  - Antecedents of conditionals are filters (cf. infra)

Contents do not always project in the same way

Karttunen (1977)

(4) a. If Mary realizes that John has not told the truth, she will be angry.
b. ⇝John has not told the truth.

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

- This is problematic for any theory that postulates a fixed behaviour for a given type of linguistic context.
- *Solution*: The context of utterance must be taken into account.

Projection and *at-issueness*

Simons et al. (2010)
A content p is projected iff. it is not *at issue* regarding the Question Under Discussion (QUD, cf. Roberts (1996)).

- p is at issue, if the speaker intends to address the QUD via p:
  - p must be relevant to the QUD (i.e. contributes to answering it).
  - The speaker can expect the addressee to recognize his intention in doing so.

- In (4) the QUD is similar to "Will Mary be angry?", the truth of the complement of *realize* is not at issue: every possible world entails it.
- In (5) the QUD is similar to "Should I confess that I lied?", the truth of the content is directly relevant to the QUD, thus it is at issue and does not project.

Projection and *attachment*

- Ducrot (1972): a key feature to identify a presupposition is that it cannot be used to establish a subsequent discourse relation.
- If A is an utterance that presupposes P, a discourse of the form AB cannot contain a discourse relation R, such that $R(P, B)$.

  (6) a. Paul stopped smoking, so he worries about his health.
  b. #Paul stopped smoking, so he did not worry about his health.

- Jayez (2010): discursive attachment to a content is possible iff. the attachment also bears on the main content ($R(A + P, B)$ is possible).

  (7) Harry suddenly stopped smoking, so I guess that it was his wife who did not like it.

- Attachment is related to projection: to be able to establish a discourse relation means that the material must be accessible/projected.

Taking stock

Requirements for a discursive theory of presupposition:

1. Handle the projection of material out of non-veridical contexts.
2. Tie the projection of the material to the context of utterance.
3. Provide an explanation for the impossibility to attach to non-main content alone.

2 Ludics

- A theory of Logic based on the notion of *interaction* (Girard, 2001).
- Proofs emerge as the result of the interaction between two *designs*.
- Appears well-suited to model natural discourse (Lecomte & Quatrini, 2009, 2010, 2011).
  - A speaker's utterance is represented by a design.
  - The addressee (possibly virtual) has a counter-design.
- A well-formed discourse is one such that the discourse participants actions match, i.e. such that their designs *converge*/are *orthogonal*.
- The meaning of the discourse comes from the interaction between the two designs: it is given by the set of designs with which the interaction converges.

An example (Lecomte & Quatrini, 2010)

(8) a. *E:* I was to be captain of the *Pharaoh*; I was to marry a nice girl.
b. *F:* Did someone had an interest in you not becoming captain?
c. *E:* Only one man: Danglars.
d. *F:* Now, tell me about the girl you were supposed to marry.

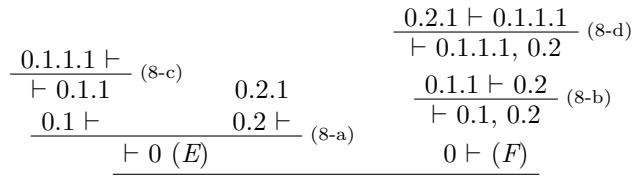

Figure 1: Ludics representation of the dialogue in (8-a)-(8-d)

Negative and Positive actions

- Ludics distinguish between positive and negative actions inside a player's design:
  - *Positive* actions correspond to an active intervention on the part of the player.
  - *Negative* actions correspond to the anticipation of the speaker regarding some potential refutation, and to the recording of the addressee's interventions. They are deterministic: the player is not involved in any choice.

3 Ludics and Projection

3.1 Presupposition in Ludics

- In the preceding dialogue, all the information conveyed by the speaker is made available for further attachment: cf. (8-a) which conveys an information about a captainship and a wedding.
- As seen above this is undesirable for the case of presupposition (and projective material in general): not all conveyed contents should be placed on the same level of accessibility.
- ⇒ Ludics handles the case of presupposition by means of *covert moves*.

(9) a. *A:* Are you still smoking?
b. *B:* Yes.

- *A* only expects answers that entail that *B* smokes.
- Presupposition are treated like covert questions answered by *A*:
  - The speaker asks and answers the question "*Did you smoke before?*"
  - The speaker asks the question "*Are you smoking now?*", attached to the previously created locus.
  - The speaker expects either a *Yes* or a *No* answer and the addressee is committed to the presupposition if he wishes to remain convergent.

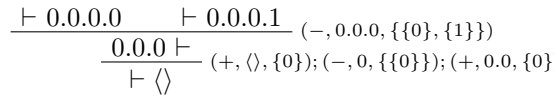

Figure 2: *A*'s treatment of presupposition in (9-a)

Consequences for presupposition projection

The previous analysis has various desirable consequences for the treatment of presupposition and projection in general:

1. Attachment is managed by way of loci:
   - The loci open for a reaction pertain to the last question.
   - The addressee necessarily has to react on this question which corresponds to the main content of the speaker.
   - All open loci integrate the presupposition in their structure, so the addressee can also elect to react on it, but it is not necessary.
2. A material p can be considered to be projected if it is part of all the open loci, i.e. each integrates the covert question in its structure.
3. If a given material is at issue, it will not be included in every open loci.

3.2 Different projection behaviours

The proviso problem

(10) a. If John comes, he will bring his diving gear.
b. $\underset{psp}{\rightsquigarrow}$John has diving gear
c. If John is a diver, he will bring his diving gear.
d. $\underset{psp}{\rightsquigarrow}$If John is a diver, he has diving gear.

- Depending on the content of the antecedent, conditionals can either act as holes (10-a) or filters (10-c).
- I assume that conditionals are treated as such:
  - First a covert question about the truth of the antecedent is asked.
  - From each resulting location, loci are opened relative to the consequent.

(11) If John comes, he will bring his diving gear.

$$\frac{\vdash 0.0.0.0.0.0 \qquad \vdash 0.0.0.0.0.1 \qquad \vdash 0.1.0.0.0.0 \qquad \vdash 0.1.0.0.0.1}{\vdash \langle\rangle}\ \Phi$$

Where: $\Phi = (+, \langle\rangle, \{0\}); (-, 0, \{\{0\}, \{1\}\}); (+, 0.0, \{0\}); (+, 0.1, \{0\});$
$(-, 0.0.0, \{\{0\}\}); (+, 0.0.0.0, \{\{0\}, \{1\}\});$
$(-, 0.1.0, \{\{0\}\}); (+, 0.1.0.0, \{\{0\}, \{1\}\});$

An easier representation:

$$\dfrac{\dfrac{\vdash 0.0.0.0.0.0 \qquad \vdash 0.0.0.0.0.1}{\vdash 0.0} \qquad \dfrac{\vdash 0.1.0.0.0.0 \qquad \vdash 0.1.0.0.0.1}{\vdash 0.1}}{\vdash \langle\rangle}$$

- The first branching relates to the truth of the antecedent.
- On each branching the presupposition about John owning some gear is handled.

- Then a question about him bringing the gear is open, with potential answers.
- The presupposed content is verified in all open loci: it is projected.

(12) If John is a diver, he will bring his diving gear.

$$\dfrac{\vdash 0.0 \qquad \dfrac{\vdash 0.1.0.0.0.0 \qquad \vdash 0.1.0.0.0.1}{\vdash 0.1.0.0}}{\vdash \langle\rangle}$$

- Here, the presupposition is entailed by the truth of the antecedent.
- It is only considered in the corresponding branching.
- No further loci are open on the address 0.0: considering the context, there is no reason to assume John has gear if he's not a diver.
- The presupposition is handled locally, and is not present in all loci: it is not projected (or under a weakened form).

Different projection behaviours (III)

(13) a. If Mary realizes that John has not told the truth, she will be angry. =(4-a)
b. If I realize later that I have not told the truth, I will confess it to everyone. =(5-a)

- The approach is essentially the same as for the previous examples.
  - The proposition "*I have not told the truth*" in (13-b) is only entailed in the case the antecedent is true (mainly because of the use of the first person).
  - This is not valid for (13-a), so both open branchings are equal regarding the truth of the presupposition, and there is no reason to assume it is only verified in only one of the alternatives.

Conclusion

- Ludics give a flexible and intuitive framework to represent various phenomena related to presupposition.

  Attachment is possible on open loci; reacting on one given loci makes it possible to integrate all the contained information in one's answer.

  Projection is equated to the presence of a given content in all open loci.

- A drawback is that the system might be too flexible, there is (yet) no principled way to promote some designs over others.

⇒ It remains to see how to manage the compositionality and triggering of presuppositions.

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