Projection and QUD

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Goal of the talk: discuss the relationship between projection and relevance to the *Question Under Discussion (QUD)* (Roberts 2012 < 1998 < 1996, Ginzburg 2012).
Introduction


Projection: the fact that a piece of information is unaffected by truth-suspension or cancellation operators.

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(1) a. *Eloise realized that deep learning is fun.*  
    \( \sim \) Deep learning is fun  

b. *Eloise didn’t realize that deep learning is fun.*  
    \( \sim \) Deep learning is fun
Introduction I


- Projection: the fact that a piece of information is unaffected by truth-suspension or cancellation operators.

(1) a. Eloise realized that deep learning is fun.
   \[ \sim \text{Deep learning is fun} \]

b. Eloise didn't realize that deep learning is fun.
   \[ \sim \text{Deep learning is fun} \]

- Relevance to the QUD: roughly, the fact that a conversational move is related to (one of the) current discourse topic(s).
Relevance to the QUD may be ambiguous since the intended QUD may not be shared.
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(2) A – I never find time for housework. We live in a real mess with my husband!

B – Oh, I didn’t know you are married!

A – Well, I am.

B – And your husband?

A – Well, he’s married too. 😊
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A – Well, he’s married too. 😊

A’s answer at 😊
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1. Naïve reaction: QUD = is your husband married?
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A’s answer at 😊
1. Naïve reaction: QUD = is your husband married?
2. Non-naïve reaction: QUD = why doesn’t your husband do the cleaning?
Relevance to the QUUD may be ambiguous since the intended QUUD may not be shared.

(2) A – *I never find time for housework. We live in a real mess with my husband!*  
B – *Oh, I didn’t know you are married!*  
A – *Well, I am.*  
B – *And your husband?*  
A – *Well, he’s married too.*

A’s answer at 😊

1. Naïve reaction: QUUD = is your husband married?  
2. Non-naïve reaction: QUUD = why doesn’t your husband do the cleaning?  
   2.1 Because married men don’t like housework.
> Relevance to the QUD may be ambiguous since the intended QUD may not be shared.

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A – *I never find time for housework. We live in a real mess with my husband!*  
B – *Oh, I didn’t know you are married!*  
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B – *And your husband?*  
A – *Well, he’s married too. 😊*

> A’s answer at 😊  
1. Naïve reaction: QUD = is your husband married?  
2. Non-naïve reaction: QUD = why doesn’t your husband do the cleaning?  
   2.1 Because married men don’t like housework.  
   2.2 Because each member of a couple counts on the other for housework.
Apparent variability/indeterminacy/vagueness of the QUD → pragmatic approaches.
Introduction III

- Apparent variability/indeterminacy/vagueness of the QUD ↦ pragmatic approaches.
- The context helps identify the QUD.
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- The complication of *layered* information.
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- The complication of *layered* information.
- Frege, Grice, Potts and many others: truth-conditional content vs. the rest (implicatures and presuppositions). See Karttunen (2016) for an historical reminder.
- Apparent variability/indeterminacy/vagueness of the QUD → pragmatic approaches.
- The context helps identify the QUD.
- The QUD helps assess relevance.
- The complication of layered information.
- Frege, Grice, Potts and many others: truth-conditional content vs. the rest (implicatures and presuppositions). See Karttunen (2016) for an historical reminder.

(3) *Unfortunately, my stupid colleague didn’t even realize that deep learning is fun.*
Is there any relation between layering and QUD?
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Yes! An intuition dating back to Ducrot (1972, pp. 80-90) (for presuppositions) and Grice (1989, p. 362) (for discourse markers).
Introduction IV

- Is there any relation between layering and QUD?
- ‘Secondary’ or ‘peripheral’ information (= non truth-conditional for Frege and Grice) does not necessarily address the discourse topic.
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How to complete the triangle?
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How to complete the triangle?

```
Relevance to the QUD

?   ?

Layering   ?   Projection
```
Our claims:
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1. The content grammatically marked as central *must* address the QUD.
2. When there is no central content, projection is obligatory.
3. When projection is possible, it is the default but does not occur if it conflicts with the central content.
Claim 1: Central information must address the QUD.
Central information I

- **Claim 1**: Central information must address the QUD.
- Answers that don't target the QUD are odd.
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Answers that don’t target the QUD are odd.

(4) Q – Did Paul pass the Science exam?

R – ? Mary didn’t know that he had.

See Simons et al. (2011)
Claim 1: Central information must address the QUD.

Answers that don’t target the QUD are odd.

(4) Q – *Did Paul pass the Science exam?*

R – ? *Mary didn’t know that he had.*

See Simons et al. (2011)
Strong connection with Ducrot’s (1972) *Linking Law.*
Central information II

- Strong connection with Ducrot’s (1972) *Linking Law*.
- Ducrot: Attachment to the presupposition alone is not possible with justification or consequence discourse markers.
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Ducrot: Attachment to the presupposition alone is not possible with justification or consequence discourse markers.

(5) **Paul stopped smoking because it’s bad for health.**

∼ Paul doesn’t smoke because it’s bad for health
Strong connection with Ducrot’s (1972) *Linking Law*.

Ducrot: Attachment to the presupposition alone is not possible with justification or consequence discourse markers.

(5) *Paul* [stopped] smoking *because it’s bad for health.*

*∼ Paul doesn’t smoke because it’s bad for health*

(6) *Paul* stopped [smoking] *because he liked that.*

*∼ Paul smoked because he liked that*
Central information III

- Applying symmetry.
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(7) Ducrot

a. *Paul stopped smoking, as a result he felt better.*

b. *Paul stopped smoking, as a result he had lung cancer.*
Applying symmetry.

(7) Ducrot

a. Paul \textit{stopped} smoking, as a result he felt better.

b. ? Paul stopped \textit{smoking}, as a result he had lung cancer.

(8) QUD

Q – Why did Paul have lung cancer?

R1 – Because he \textit{smoked}.

R2 – ? Because he \textit{stopped} smoking.

see Grimshaw (1979) for a generalization.
Generalized Linking Law (9).

(9) **GLL**
If a discourse relation is supported by a probabilistic dependence from $p$ to $p'$, $p$ and $p'$ must entail the central content of their respective constituents.
Generalized Linking Law (9).

\textit{GLL}

If a discourse relation is supported by a probabilistic dependence from $p$ to $p'$, $p$ and $p'$ must entail the central content of their respective constituents.

The peripheral content can also be involved, see (10) (Ducrot again).

(10) $Q$ – Does Paul has a strong will?
    $R$ – Well, he stopped smoking.
Central information IV

- Generalized Linking Law (9).

(9) **GLL**
If a discourse relation is supported by a probabilistic dependence from \( p \) to \( p' \), \( p \) and \( p' \) must entail the central content of their respective constituents.

- The peripheral content can also be involved, see (10) (Ducrot again).

(10) Q – *Does Paul has a strong will?*
R – *Well, he stopped smoking.*

- The peripheral content can be more important than the central content (Simons 2007), see (11)

(11) Q – *Where is Paul?*
B – *I just remembered that he is teaching.*
Claim 2:

Presuppositions don’t always project (see Simons et al., 2011 and Jayez, 2015 for a survey). The content of some triggers can’t even be suspended. A case in point: deictic particles.

(12) a. If Paul passed his exam, Mary certainly knows that he did. / Paul passed
b. If Paul did not prepare the exam, I am surprised that he passed. / Paul passed
c. ? If Paul did not prepare the exam, Ah! I saw that he passed. / If Paul . . . , I am surprised to see that he passed / If Paul . . . , I saw that he passed
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A case in point: deictic particles.

(12)  
a. If Paul passed his exam, Mary certainly knows that he did.  
\[\neg\phi\text{ Paul passed}\]

b. If Paul did not prepare the exam, I am surprised that he passed.  
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c. ? If Paul did not prepare the exam, Ah! I saw that he passed.  
\[\neg\phi\text{ If Paul . . . , I am surprised to see that he passed}\]
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Deictic particles: interjections + modal particles + discourse management particles (hesitation signals, attentional hooks, stage indicators, etc.).
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Other views: procedural vs. conceptual (Blakemore 2002), showing vs. saying (Wharton 2003)
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Discriminant prosodic properties (Aijmer 2012), visible in automatic classification (Dargnat et al. 2015).
Examples for homophonic words (*quoi* and *voilà* as pronoun/something vs. particles in French), investigated with Prosotran (Bartkova et al., 2012)

**Fig. 5.** Frequency of occurrences with respect to the ΔF0 value for *voilà*

From Dargnat et al. (2015)
Fig. 3. Frequency of occurrences with respect to pitch level values (measured on the last syllable nuclei)

From Dargnat et al. (2015)
Not all discourse markers pattern alike wrt projection (local accommodation).
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(13) **Context:** Paul just passed the French language exam.

*If getting credits for the French exam allows one to register for FL34, Paul, as a result, can register.*

∧ getting credits ⇒ registration
Claim 3:
As long as there is no problem with the MC, projection occurs.
Variations of projection I

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  As long as there is no problem with the MC, projection occurs.
- This is not surprising given the Generalized Linking Law: Mind the central content!
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- Projection would contradict the hypothetical status of the central content.
Variations of projection I

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- Examples: ignorance interpretation.
- Projection would contradict the hypothetical status of the central content.

(14) *If I discover that I was mistaken, I will take another option.*

¬ I was mistaken
Simons et al. (2011): projection is blocked when the peripheral content addresses the QUD.

(15) a. $p$ is at-issue iff the speaker intends to address the QUD via an answer to the question whether $p$ (abbreviated as $?p$)

b. An intention to address the QUD via $?p$ is felicitous only if $p$ is relevant to the QUD and the speaker can reasonably expect the hearer to recognize this intention.

(Def. 26 of Simons et al., 2011)
Variations of projection III

- If they are right, non-projection is mainly a matter of (intended) relevance to the QUD.
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- If they are right, non-projection is mainly a matter of (intended) relevance to the QUD.
- E.g., in (16), \( \langle ? \text{ Paul passed} \rangle \) and \( \langle ? \text{ Paul was well-prepared} \rangle \) are relevant to the QUD.

(16)  
Q – Did Paul pass his exam?  
R1 – I am not aware he did.  
\( \neg \) he did  
R2 – I am not aware that he was well-prepared.
Problem 1: in some cases projection and (intentional) QUD addressing coexist.
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(10) Q – Does Paul has a strong will?
    R – Well, he didn’t stop smoking.

(17) Q – What about a picnic?
    B – Did you realize it’s raining?

(18) Q – Which neighbor kid keeps ringing John’s doorbell and running away?
    R – John is beside himself with frustration. He hasn’t figured out it’s Billy.
    (Peters’ 2016 example 32)
Variations of projection V

- Problem 2: When the peripheral content does not project, the central content is crucial.
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(19) OK if Mary was supposed to know (Simons et al.)
Problem 2: When the peripheral content does not project, the central content is crucial.

(19) OK if Mary was supposed to know (Simons et al.)

(19) Q – Did Paul pass the exam?  
   B – Mary doesn’t know that he did.
Variations of projection VI

- Problem: in some cases, lexical meaning > general pragmatic reasoning.
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<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
<td><strong>Est-ce que Paul a réussi l’examen ?</strong></td>
</tr>
<tr>
<td><em>Did Paul pass the exam?</em></td>
<td></td>
</tr>
<tr>
<td><strong>Answer</strong></td>
<td><strong>Marie ne sait pas qu’il l’a eu</strong></td>
</tr>
<tr>
<td><em>Mary doesn’t know that he did</em></td>
<td></td>
</tr>
<tr>
<td><strong>Reasoning</strong></td>
<td><strong>Marie le saurait</strong></td>
</tr>
<tr>
<td>Mary would know</td>
<td></td>
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</tbody>
</table>
Similar observations with *je ne sache pas* vs. *je ne sais pas*, *avoir connaissance* or *être au courant* vs. *savoir*, etc.
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Variations of projection VII

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Simple observations suggest that the central content plays a central role.
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Projection is possible only when it does not obscure the contribution of the central content to answering the QUD.
Discussion I

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- Projection is possible only when it does not obscure the contribution of the central content to answering the QUD.
- The crucial descriptive factor: combination of relevance to the QUD and layering.
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Projection is possible only when it does not obscure the contribution of the central content to answering the QUD.

The crucial descriptive factor: combination of relevance to the QUD and layering.

The interaction of on-line strategies and conventional ‘frozen’ lexical knowledge needs further study.
Open question 1: Unify deictic particles with (some) gestures, intonation and laughter (Mazzocconi et al. 2016)?
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Open question/program 2: Have a more liberal notion of QUD and relevance (Ginzburg 2012) and investigate the role of discourse relations with the GLL (Jayez and Reinecke 2016).
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Open question/program 4: the diachrony of triggers (know vs. savoir).
THANK YOU! (projects)
References


