

An SDRT based analysis of Pathological Dialogues

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Outline

- 1 Introduction
- 2 Corpus
 - Texts
 - Specificities of the Corpus
- 3 S-DRT representation
 - Relations
 - SDRT representations
- 4 Examples
- 5 Conclusion

Context

Several key-ideas coming from psychologists' analyses:

- Conversational representations: involve both pragmatic and semantic representations.
- Four kinds of breaking in conversations with schizophrenics: either between, or within interventions, involving two or three utterances.

Context

Two conjectures

Conjecture 1: Schizophrenics are logically consistent. Hence the breakings intervene through the construction process of the conversational representation.

Conjecture 2: Underspecification plays a central role in such breakings. Slogan: A choice is never definitive!

Here, we don't focus on this second conjecture.

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Objectives

Provide a SDRT-formalization of pathological conversations, assuming the two conjectures, where: The SDRT set of rhetorical relations can be extended to other types of pragmatic relations, accounting for the complexity of dialogical interaction;

Possible benefits:

- Through dialogue, account for what is specific in a schizophrenic management of interaction.
- Maybe test some linguistic hypotheses about pragmatic and semantic rules, either respected (by normal interlocutors) or broken (by schizophrenics).

Corpus

The first corpus: 30 interviews with

- 14 paranoid schizophrenic patients;
- 8 disorganized schizophrenic patients;
- 8 subjects in a matched control group (CTR).

The first analysis show that there is a specific pathology (paranoid schizophrenic") make specific discontinuities :

- exchanges breaks
- complex intervention breaks

Corpus

In this analysis, we focus on the 8 paranoid schizophrenics.

- 8 extracts of controlled dialogues
- All texts are dialogues between:
 - a psychologist
 - a schizophrenic
- Average discourse units by dialogue : 20
Note that intervention and discourse units are different

Expectation

- We assume that both have different expectations
 - psychologist: try to maintain the coherence of the dialogue
 - schizophrenic: could express something about his life

Schizophrenic Expectation

His expectation is not well defined in order to have a natural dialogue

Then, they should use different type of S-DRT relations

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S-DRT relations

We assume usual relations :

- type 1
 - narration
 - answer
- type 2
 - elaboration
 - evaluation
- type 3
 - question

S-DRT rhetorical relations

Specific rhetorical relations:

- type 1 extension
 - phatic answer
 - following and illustration
- type 2 extension
 - elaboration: explanation, prescription
 - phatic
- type 3 extension
 - question: drive, meta
 - call of elaboration
 - drive
 - conter-elaboration
 - justification

S-DRT Links

Remarks

- Added relations are directly derived from usual ones
- Most of them depend of the specific explanation of the psychologist
Especially : phatic

Phatic

phatic expression is one whose only function is to perform a social task

Example:

VI.(M279): Oui, oui

IV.(D154): ... j'étais j' j' j'étais doué enfin (→)

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Important points on these representations are:

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■ S-DRT_{Psy}

the psychologist must:

- use very under-specified relation to maintain the coherence of the S-DRT
- say something in order to continue the dialogue

■ S-DRT_{Schi}

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Psychologist or Schizophrenic representation ?

In order to produce a S-DRT representation, we focus on
 $S\text{-DRT}_{\text{sch}}$

We assume that the $S\text{-DRT}_{\text{psy}}$ could always be build by using
flexible under-specified relations

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But... we still have a problem.

In both representations, we need a thematic criterium to allow new top continuation.

We mark them in the representation with dotted boxes.

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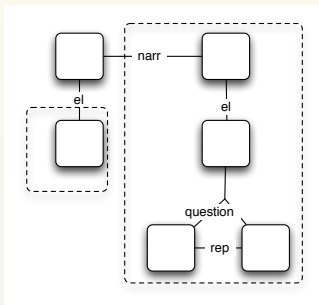
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Psychologist or Schizophrenic representation ?

Let thematic boxes be sets of coherent discourse units.

A thematic boxes could:

- be include in another one
- or there is no overlap

The right frontier define islands over them.

Rules over the S-DRT

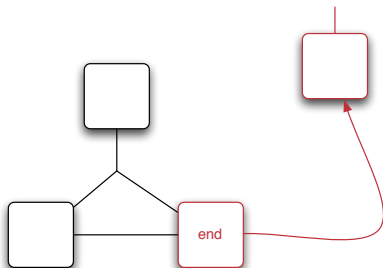
In the corpus, the opening of a new thematic box is often used. We see this as a rise through the S-DRT tree to change the topic.

But, this rise is allowed if and only if the sub-derivation (the actual thematic box) is correctly ended.

And we generally find the closure of a sub-derivation and the new topic in the same discourse unit. Especially for the psychologist who try to maintain the coherence of the dialogue.

Rules over the S-DRT

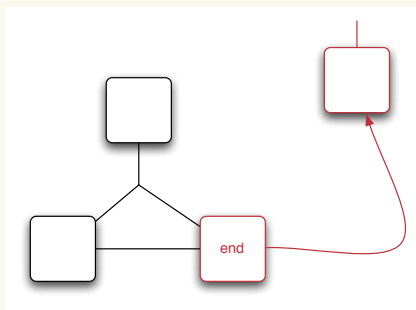
General rule



let see the second example.

Rules over the S-DRT

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Rules over the S-DRT

Finally, because we works on extracts, we assume a general starting point for the representation.

The rise could always be at least connected to this top node.

Conversation example

Example 1:

the schizophrenic switch twice from a theme to another one:

- politic death
- death

It's clear that the two themes are directly related, but they express two different realities.

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Conversation example

Which death?

(B124) Oh yeah (↑) and complicated (↑) and it's really very very complicated (→) politics, it's really something when you get into it, have to win or else when you lose, well, you're finished (↓)

(A125) Yes

(B126) JCD is dead, L is dead, P is dead uh (...)

(A127) So you think they're dead because they lost (↑)

(B128) No they won but if they're dead, it's their disease well it's it's (→)

(A129) Yeah it's because they had a disease, it's not because they were in politics (↑)

(B130) Yes I mean (→)

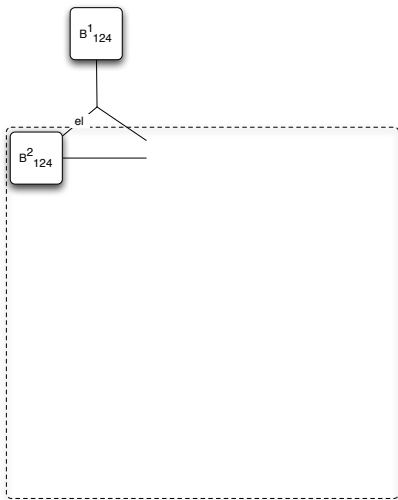
(A131) Yes you think it's because they were in politics (↑)

(B132) Yes, so well yeah there was C too who committed murder, uh huh (→) he was there too, the one in B but well (→) it, that, it's because of politics again

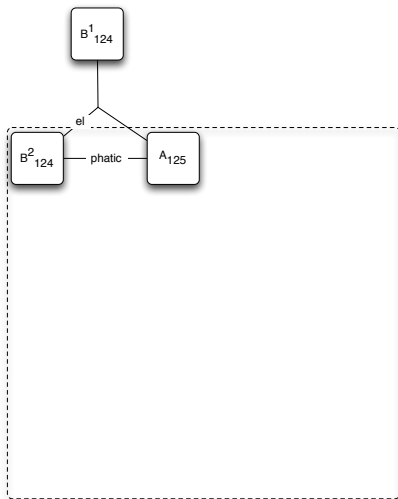
(B124) Oh yeah (↑) and complicated (↑) and it's really very very complicated (→)

B¹₁₂₄

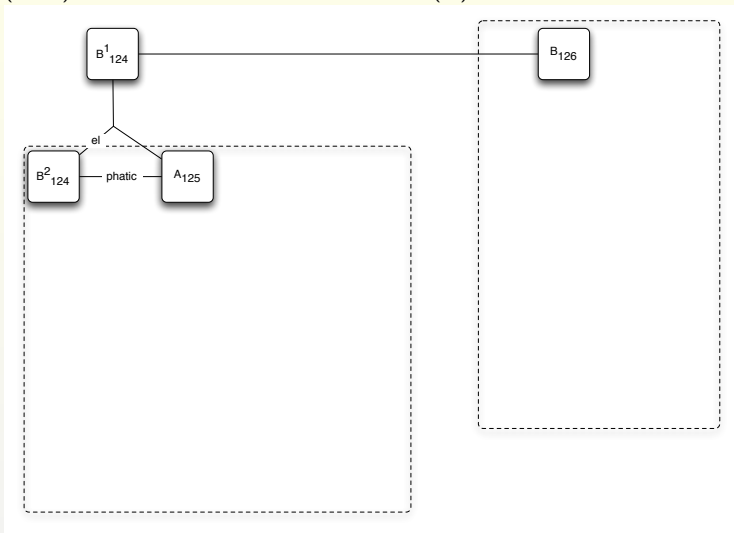
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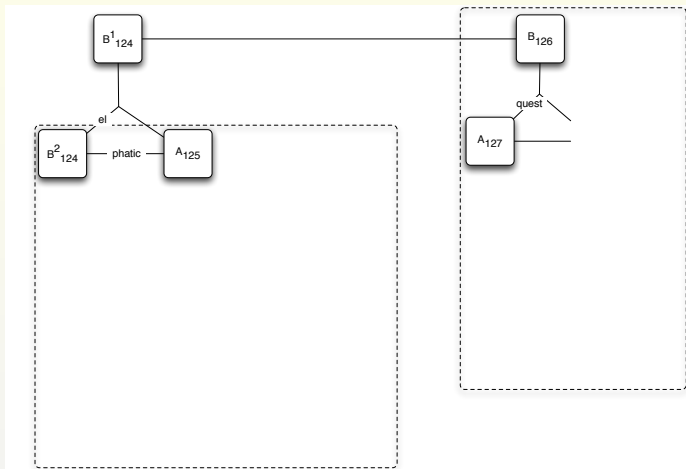
(A125) Yes



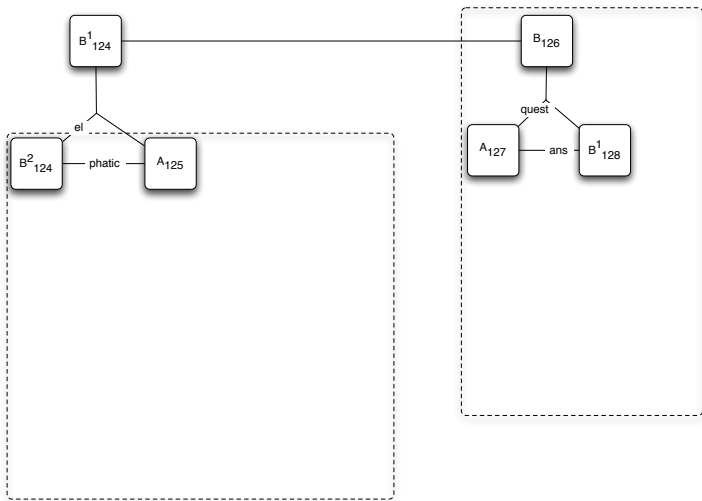
(B126) JCD is dead, L is dead, P is dead uh (...)



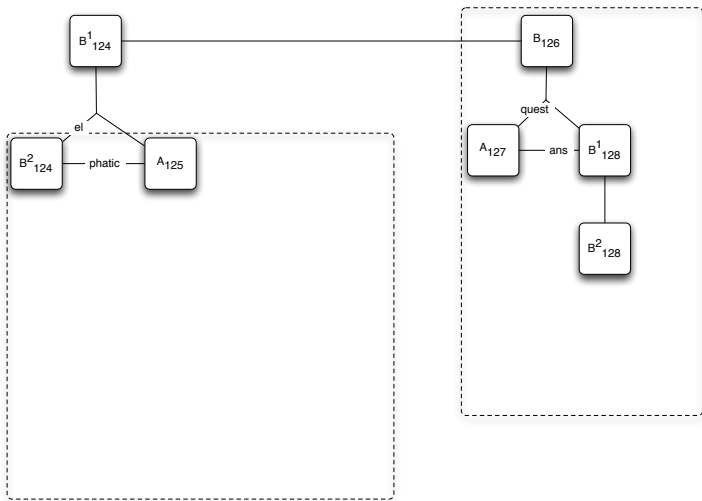
(A127) So you think they're dead because they lost (↑)



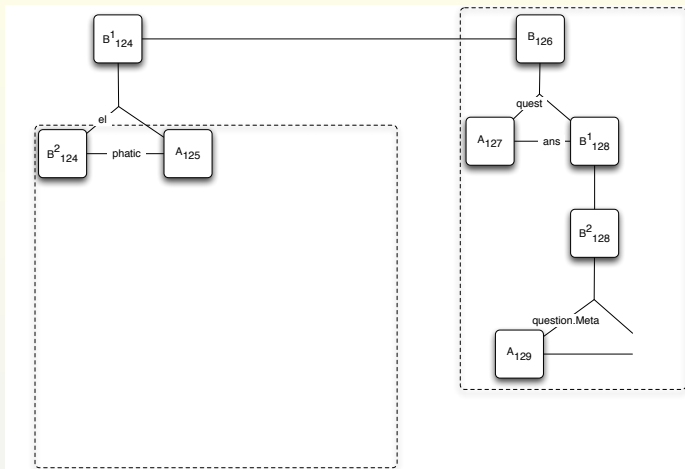
(B128) **No they won but if they're dead**, it's their disease well it's it's (→)



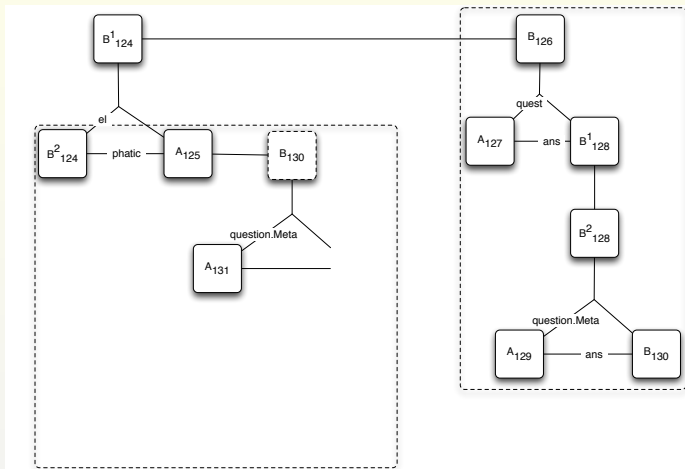
(B128) No they won but if they're dead, **it's their disease well it's it's** (→)



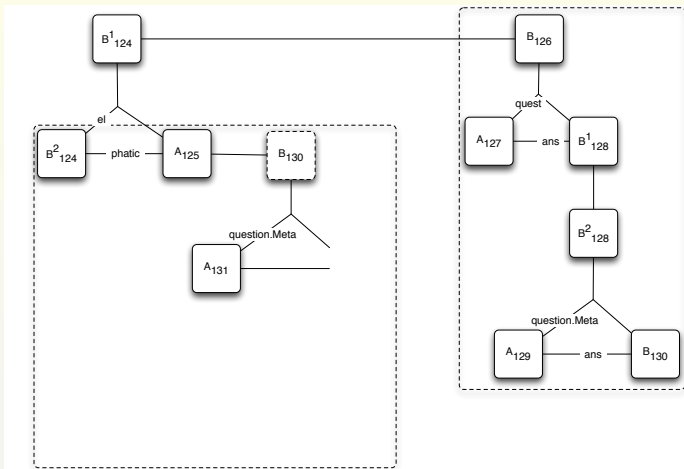
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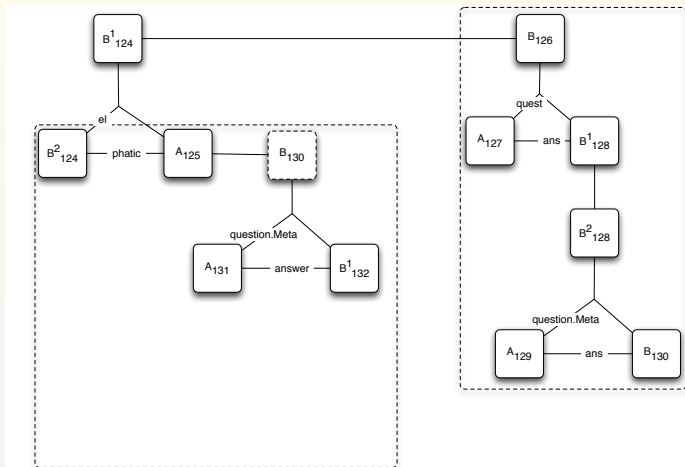
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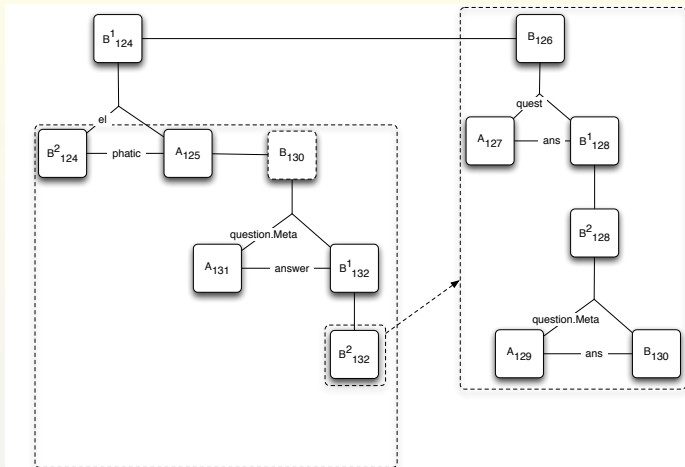
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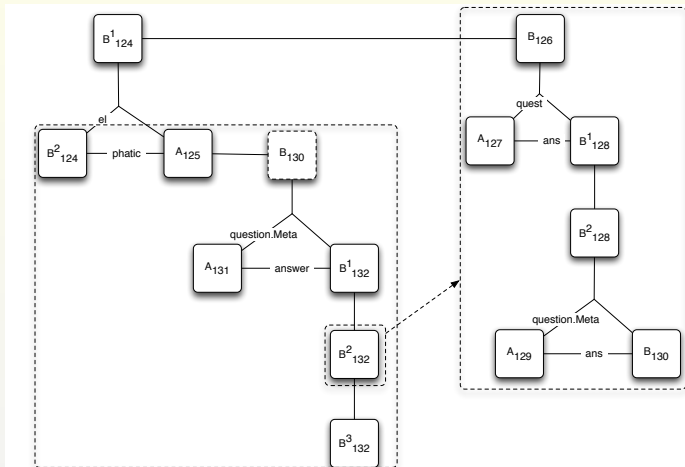
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Rise through the derivation

Who lost what?

(G82) (...) l'an dernier euh (+) j'savais pas comment faire j'étais perdue et pourtant j'avais pris mes médicaments j'suis dans un état vous voyez même ma bouche elle est sèche j'suis dans un triste état

I didn't know what to do. I was lost.

(V83) Vous êtes quand même bien (?)

(G84) J pense que ma tête est bien mais on croirait à moitié (?) la moitié qui va et la moitié qui va pas j'ai l'impression de ça vous voyez (?)

(V85) D'accord

(G86) Ou alors c'est la conscience peut être la conscience est-ce que c'est ça (?)

(V87) Vous savez ça arrive à tout le monde d'avoir des moments biens et des moments où on est perdu

Everybody is lost at times.

(G88) Oui j'ai peur de perdre tout le monde

Yes I am afraid I lose everybody.

(V89) Mais ils vont plutôt bien vos enfants (?)

(G90) Ils ont l'air ils ont l'air mais ils ont des allergies ils ont (?) mon petit fils il s'est cassé le bras à l'école tout ça

Rise through the derivation

Example 2:

Both try to rise through the derivation:

- the psychologist use the abstract rule
- the schizophrenic do not correctly ended the thematic box.

This is not a structural break of the Right Frontier, but that's really close.

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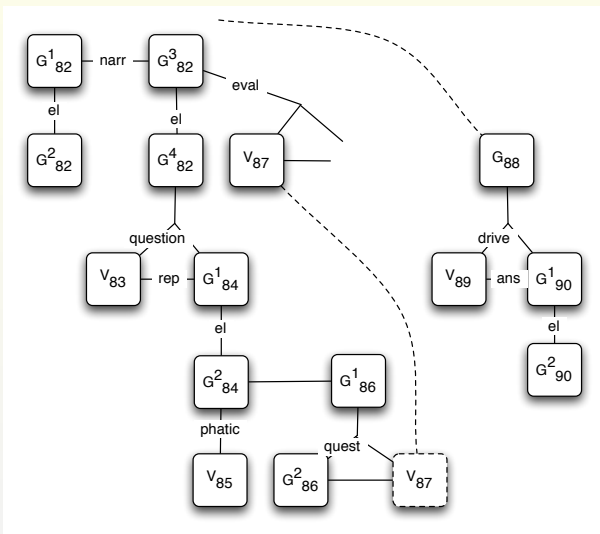
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Rise through the derivation



Conclusion on the corpus

In the corpus, schizophrenics do:

- 3 breaks of the right frontier
- 5 rises through the structure without completeness of the substructure

Conclusion on the corpus

But the interesting point is there is always an ambiguities

- lexical ambiguity : lost (feel lost vs lost someone)
- referential ambiguity: two discourse referents with the same label (Two Florence)
- space: room vs hospital
- time: *ask something* now vs 5 years before.

Schizophrenics seems to shift over ambiguities

Conclusion on the corpus

Questions:

- 1** It seems unclear where the problem comes from:
 - a cognitive dysfunction
 - a lexical dysfunction
- 2** We claim that underspecifications (lexical, structural, cognitive) are possible points of attachment for the schizophrenic
- 3** Does the deep of the structure add constrain over the rise ?

Conclusion

A formal account of breakings in pathological conversations:

- Assuming logical consistency of the schizophrenic subject;
- Assuming a respect of the right frontier constraint;
- Locating the breaking at the level of underspecification.

Futur works

This works will be continue with

- Modelize more precisely the use of under-specification in S-DRT trees
- Works on a new corpus (larger)
- Implementation of a simple interface for annotation
- Defining algorithms over the structure of representations