CONSILIENCE: STRENGTHENING CAUSAL INFERENCES

OVERCOMING METHODOLOGICAL MONISM WITH CORPUS AND EXPERIMENTAL ANALYSIS

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Aim of the project

> Speakers' and hearers' **evaluation of (dis)fluency** depends on the degree to which the produced/perceived discourse corresponds to their expectations of the situation. Previous study revealed that **disfluencies** and **syntactico-prosodic units** are formatted differently according to the discourse genre at stake and might play a role in discourse processing.

Local marks of (dis)fluency: can act as fluent communicative devices (*filled and silent pauses, repetitions, false starts, etc.*). They display metalinguistic information to listeners (speaker's confidence, planning difficulties, conversational coordination, attention or prediction cues etc.) (Moniz 2009, Shriberg 1996, Watanabe et al. 2008).

Prosodico-Syntactic unit: Results from mapping of the boundaries of *dependency units* and *major intonation* units. Regularities in their production across genres revealed that they could be associated with discours strategies (Degand & Simon 2009) and might help speakers to link social and discursive representations (Edwards & Potter 1992).

Research Question: How can we link hypotheses drawn from offline data (from corpus study) and « validate » them online (with perception experiments)?

Hypothesis: Prosodico-syntactic units (e.g. Basic-Discourse Units) and disfluencies are associated with discourse strategies and underlying cognitive processes (attention, prediction, comprehension, memorization) (Degand & Simon 2009 ; Grosman 2014).

METHODOLOGY

1. Corpus analysis on BDU & Genres & Disfluencies
2. New (online) socio-cognitive hypothesis
3. Frequency-based selection of representative stimuli
4. Perform with DIS & prosodico-syntactic variations
5. Validation with perception experiments

Corpus Analysis

How do BDU & Disfluencies interact across situations ?

Local Unit of Analysis ✚ **Prosodico Syntactic Analysis**

Dependency clause	[ ]	[ ] [ ]	[ ]
Major Intonation Unit	[ ]	[ ] [ ]	[ ] [ ]
Basic Discourse Unit	[Ø+BDU-C]	[FRAG+BDU-I]	[REP+BDU-S]

Results:

Situations	Radio News	Political address	Conversational narration
Typical BDU	**Congruent**	**Prosody-bound**	**Syntax-Bound**
Typical DIS	Ø or Filled pause	Fragments	Repetition
Discourse strategy?	Direct/neutral	Macro-informative	Emphatic/didactic
Discours comprehension?	+	+	−
Discours memorization?	+	−	+

New Hypothesis: We could observe a « prototype effect » when high frequency BDU& DIS associations are normative of a genre. Their use leads to increased fluency.

Experimental designs

Can we confirm BDU as a processing unit ?

	Social Cognition	Indivudal cognition
	Are BDU and DIS perceived by hearers? Is there a subjective preference towards one segmentation type and disfluency over an other according to a situation?	*Do BDU and DIS influence speech processing ?* What is the impact of BDU+DIS in context on cognitive processes? (memorization & comprehension)
Material	BDU+DIS from 3 situations with original and less prototypical enunciation (+ elements of situational contextualization)	Multiple versions of 9 full texts from 3 situations with original or modified BDU+DIS in context
Design	Between – repeated measure	Between – repeated measure
Instruction	Gradation of the "acceptability" of a sentence (0 to 7). "How appropriate/fitting is the enunciation according to the situation?"	Questions on relational coherence (discourse comprehension) and on verbatim (declarative memory, discourse memorization) + distractor questions

Questions and feedback

- Does consilience of two different data-types allow to infer stronger causality link between fluency and segmentation types ?
- How can we measure subjective preferences for a segmentation type/disfluency type in context?
- How can we operationalize (and access) hearers mental representations and expectations ?
- Is gradation of a segment in function of « appropriateness » a proper measurement for the evaluation of social impact of fluency ?
- Can individual cognitive fluency be evaluated from a set of 9 texts and 54 (=9*6) questions ?

References

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Poster Design
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