

A corpus-based study of agrammatic aphasia: new evidence for the potential prominent part played by adaptive strategies in these patients' oral production







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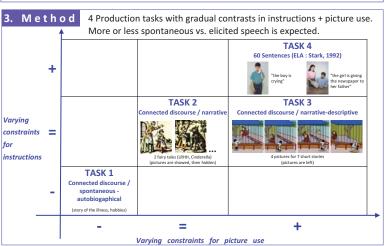
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1. Introduction We investigate the plausibility of "adaptation theory" in oral agrammatic production by means of large and systematic corpora study. The hypothesis of agrammatism as an adaptive behaviour is tested (Nespoulous, 2000; Kolk et al., 1990).

2. Objective Focus on across-tasks variability (see Hofstede and Kolk, 1994) suggests that agrammatic (non-fluent) speakers adapt linguistic forms to be encoded in relation to varying external constraints.



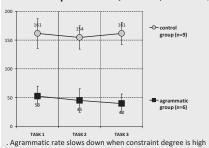
4. Corpora Analyses Procedure: QPA French data been transcribed and analyzed on the basis of Saffran et al.'s Quantitative Production Analysis procedure (1989), taking into account linguistic specificities of French: 6 agrammatic patients with left hemisphere stroke involving Broca's area (5 to 6 hours of speech data) 9 controls (2 hours of speech data) FRENCH SPEECH DATA RESULTS Corpora analyses conducted on linguistic variables, such > FLUENCY (# wpm, # words, MLU, ...) > MORPHOLOGY (morpho-lexical aspects # open- vs. closed class words, # determine # prepositions, verb inflection, ...) 383

> SYNTAX (# sententials [NP+VP] vs. ententials, # words in se > DISCOURSE (# particles, # utterances,



5. Selected Results

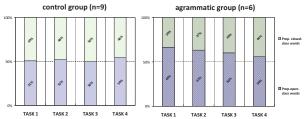
Words per minute [connected speech : tasks 1, 2 & 3]



(task 3). It speeds up when constraint degree is low (task 1). [>10 words differential between task 1 and 3]

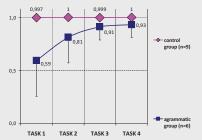
=> Fluency improves in spontaneous speech but slows down in elicited speech.

Proportion of closed- vs. open-class words



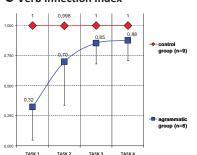
- Proportion of closed- vs. open-class words is 50/50 % for the control group Agrammatic speakers show an unbalanced pattern in spontaneous speech (task 1:34 % closed-class items vs. 66 % open-class items), that is gradually balancing when constraint degree gets higher (task 4: 44 % vs. 56 %).
- => Elliptical style in spontaneous speech vs. more grammatical complexification and accuracy in elicited speech / sentences (see detailed analysis of determiners > Θ).

Determiner Index



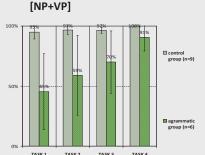
- Determiner index is better as production task is constrained. Obligatory determiners are more frequent in elicited speech than in spontaneous speech.
- => Elliptical style is more altering the use of determiners in spontaneous speech, but not that much in elicited speech and sentences (fewer omissions of obligatory

Verb Inflection Index



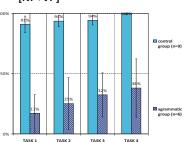
- Agrammatic verb inflection index is increasing when constraint degree is high. Verbs are more inflected in tasks 3 and 4 than in task 2 (narrative) and 1 (spontaneous speech). Non finite verbs are more frequent in
- => Verb morphology is more accurate in elicited speech and sentences, than in spontaneous speech where it is simpler.

Proportion of words in sententials



- Proportion of words in sententials is getting higher as speech and sentences are elicited.
- => Syntax is more complex and accurate in elicited speech and sentences, than in spontaneous speech where it is rather non-canonical (non-sententials are more frequent).

6 Proportion of well-formed sentences [NP+VP]



- Well-formed sentences are getting more frequent as the task is constrained. Syntactic structures quality is improving in task 4, and declining in task 1.
- => Syntactic quality is "better" when speech and sentences to be encoded are "under pressure".

6. Summary

- (i) Adaptive behaviour is an essential feature of agrammatic speech: flexibility and across-tasks variability when encoding linguistic output are confirmed through a large amount of speech data. "Ellipsis" ("preventive adaptation") is rather observed in spontaneous speech, whereas elicited speech is more complex and accurate in terms of morphology and syntax.
- (ii) The fluency drop observed in elicited speech is a result of longer pauses and self-interruptions: this may be due to higher processing or reflexive demands to encode the target forms required by the instruction and the use of pictures.
- (iii) The intervention of monitoring (i.e., attention is focused on the form to encode) might be responsible for the variability of agrammatic performance.
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