

“A statue *but a lot*”: The use of formulaic expressions in people with agrammatism

Claudia Heilemann, Vitor Zimmerer, Rosemary Varley & Suzanne Beeke
 Division of Psychology and Language Sciences, University College London
 Contact: c.heilemann@ucl.ac.uk



This project explores agrammatism from a usage- and conversational grammar perspective. In the long term, it seeks to facilitate the development of new interventions that target everyday language use.

Introduction:

People with agrammatism are able to produce certain strings of words fluently (e.g. “I don’t know”).

Formulaic expressions (FEs):

Common, frequently-used expressions that seem to be prefabricated [1].

Conversational grammar:

Features typical of spoken conversation. Agrammatic conversational grammar, e.g., turn initial noun construction [2]



Unigram:

one-unit utterance (e.g. *it*)

Bigram:

two-unit utterance (e.g. *it's*)

Trigram:

three-unit utterance (e.g. *it's alright*)

- FEs, observed in persons with aphasia (PWAs), have mostly been labelled automatic language or linguistic stereotypes [3] without acknowledging potential conversational functions.
- However, some research has addressed use & functions of FEs within everyday conversations [2] → FEs as a resource for PWAs.
- FEs in aphasiology: mostly subjectively identified using raters [4].
- Alternative, more objective approach: frequency-based analysis.
- Usage-based grammar [5]: strong potential for exploring structure & use of FEs in aphasia: importance of repetition of similar instances of use.

Methods and procedures:

Combination of a frequency-of-use perspective and a conversational grammar perspective:

Data:

Semi-structured interviews:

- Participants with agrammatism (N=39), taken from the AphasiaBank database.

Everyday conversation:

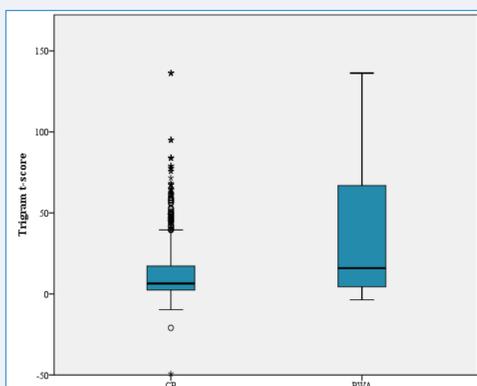
- A participant with agrammatism, and his conversation partner (CP), taken from UCL’s CAVA corpus.

Analysis:

- 1) Analysis with the Formulaic Language Analysis Tool (FLAT) [6] *Frequency-related variables of uni-, bi- and trigrams derived from spoken subcorpus of the British National Corpus.*
- 2) Flagging atypical constructions not covered by the FLAT to analyse the conversational functions of constructions with FEs.

Variables:

Measures of degree of association between several words or units, e.g. **t-score**: the higher the t-score, the more likely that an expression is formulaic (e.g. *it's alright*: **27.6**; vs. *it's new*: **3.5**)



CAVA: The trigrams produced by a person with agrammatism seem to be more formulaic (higher t-score median) compared to his conversation partner.

Results:

Inventory of bigrams and trigrams

PWAs use a restricted set of constructions. Those constructions that remain available seem to be more formulaic compared to the constructions used by a healthy speaker.

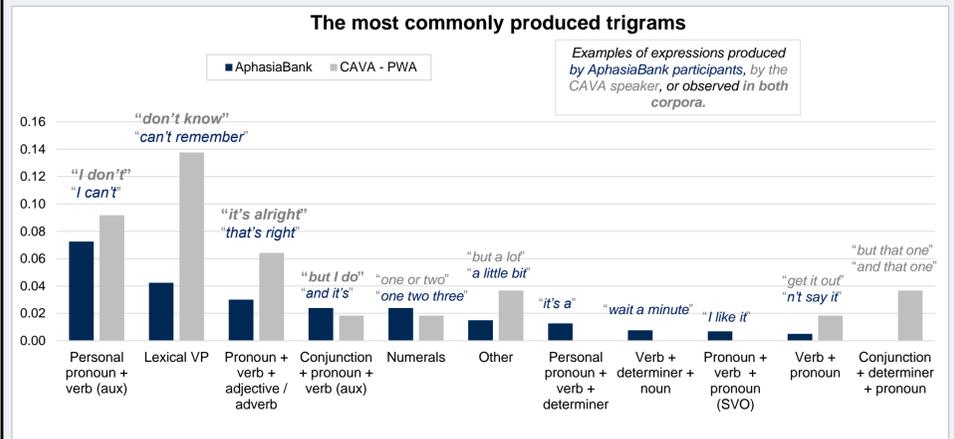
	Corpus		
	AphasiaBank (N=39)	CAVA: PWA (raw counts based on 8 conversation samples)	CAVA: CP (raw counts based on 8 conversation samples)
Number of bigram types	76 (62)	139	2295
Number of trigram types	52 (56)	74	2471
Bigrams t-score (median)	29.11 (25.5)	31.06	17.38
Trigrams t-score (median)	22.83 (30.5)	15.96	6.43
Proportion most formulaic bigrams ($t \geq 64.82$)*	.17 (.11)	.20	.09
Proportion most formulaic trigrams ($t \geq 44.32$)*	.11 (.13)	.15	.03

*Cut-off t-scores are derived from the 75. percentile values of the CAVA data.

Results:

Linguistic structures of recurrent constructions / FEs

PWAs use similar trigram structures within semi-structured interviews and everyday conversation. However, the proportions of certain categories (e.g., the “it’s alright”-construction) differ across samples.

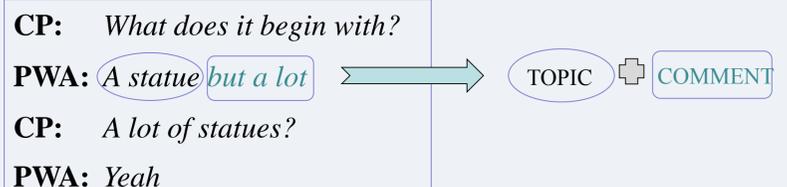


Above trigrams (reflecting 24% of trigram tokens produced in AphasiaBank, and 42% of trigram tokens produced by CAVA speaker) meet following criteria:

- Occur in the spoken BNC;
- Produced at least 5 times across transcripts of 39 AphasiaBank speakers;
- produced at least twice by the PWA in CAVA transcripts.

Analysis of conversational grammar: Example (CAVA)

FEs are used in a creative way within everyday conversation.



Conclusion and clinical implications:

- Combination of the FLAT analysis and the analysis of conversational grammar provides a novel way to approach FEs in PWAs.
- Systematic analysis of FEs in aphasia as a starting point to design new therapy approaches.
- New interventions with focus on common constructions (high functional value) and with aim to enlarge a speaker’s inventory of FEs

References:

- [1] Wray, A. (2002). *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.
 - [2] Beeke, S., Wilkinson, R., & Maxim, J. (2007). Grammar without sentence structure: A conversation analytic investigation of agrammatism. *Aphasiology*, 21(3-4), 256-282.
 - [3] Van Lancker Sidtis, D. (2012). Formulaic Language and Language Disorders. *Annual Review of Applied Linguistics*, 32, 62-80.
 - [4] Van Lancker Sidtis, D., & Postman, W. (2006). Formulaic expressions in spontaneous speech of left- and right-hemisphere-damaged subjects. *Aphasiology*, 20(5), 411-426.
 - [5] Kemmer, S., & Barlow, M. (2000). *Usage-Based models of language*. Stanford, CA: CSLI Publications.
 - [6] Zimmerer, V.C., Newman, L., Wibrow, M., & Varley, R. (2014). “I don’t know”: measuring formulaic language production in aphasia and dementia. Paper presented at the International Workshop on Language Production, University of Geneva.
- CAVA (human Communication: an Audio-Visual Archive): <http://www.ucl.ac.uk/cava/>; AphasiaBank: <http://talkbank.org/AphasiaBank/>
 * Picture taken from: <http://famouswonders.com/terracotta-warriors-in-xian/>