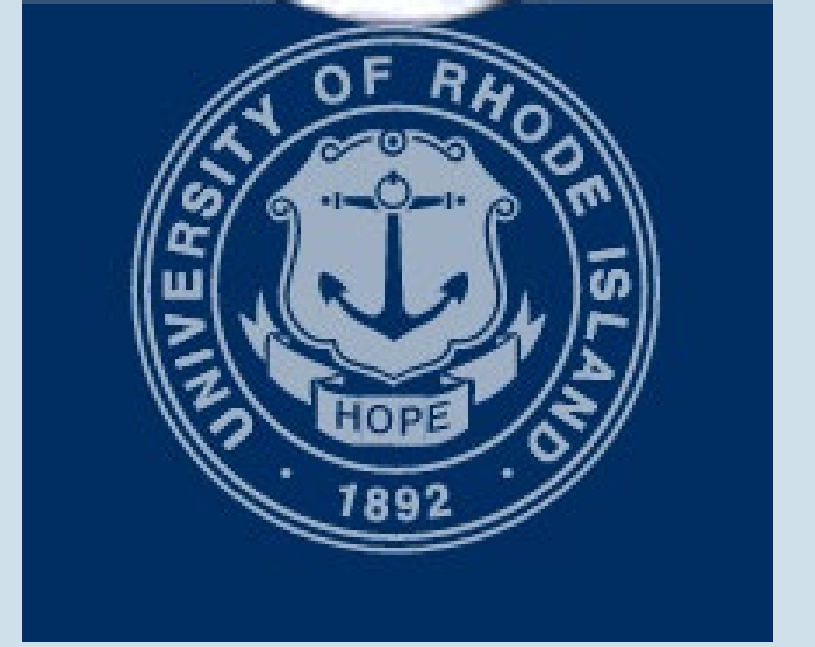


# Grammatical Analysis of Narrative in Broca's Aphasia, Wernicke's Aphasia, and Non-Aphasic Speakers

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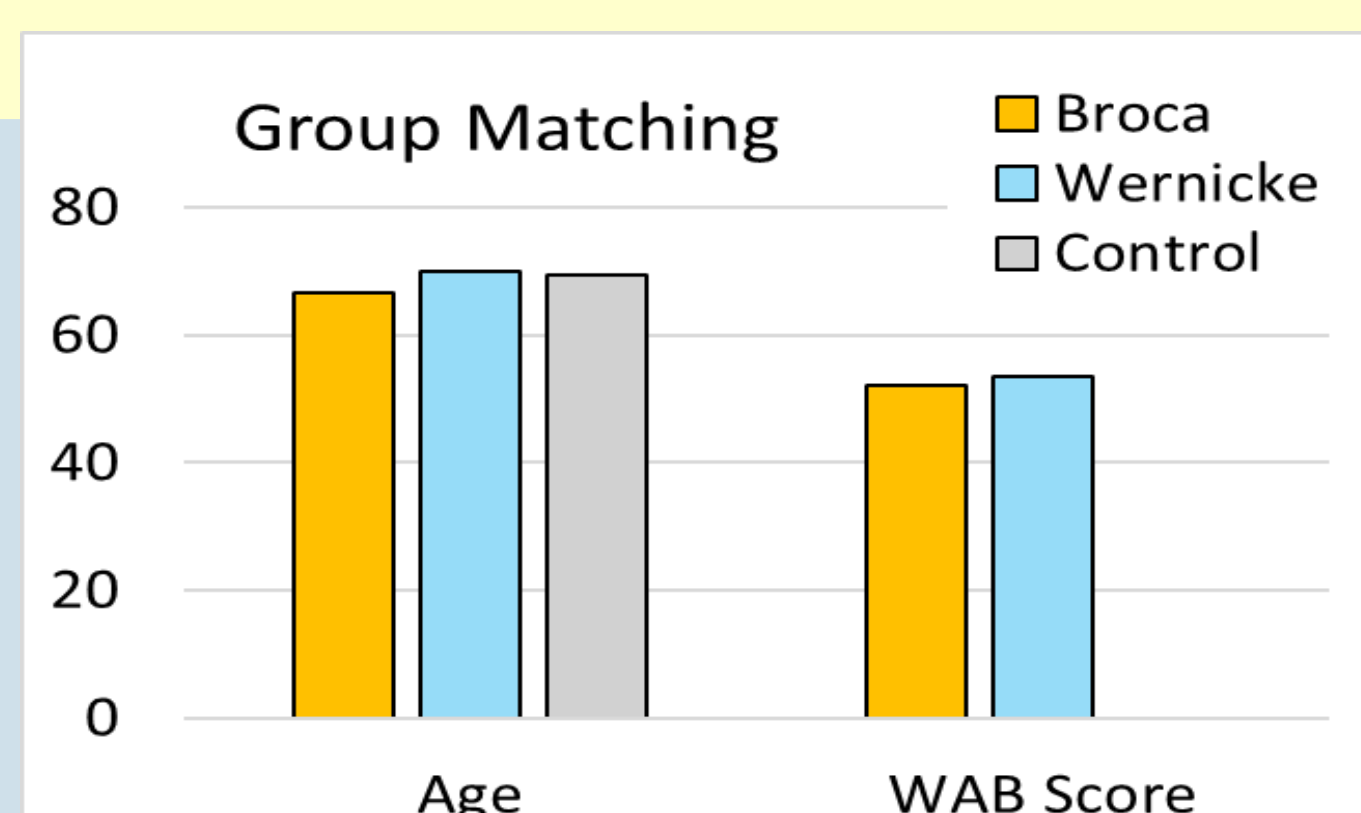


## Study motivation

- theories of **agrammatism** should account for other grammatical impairments, specifically **paragrammatism**
- both should be evaluated **relative to typical speech**, but normative data are scarce

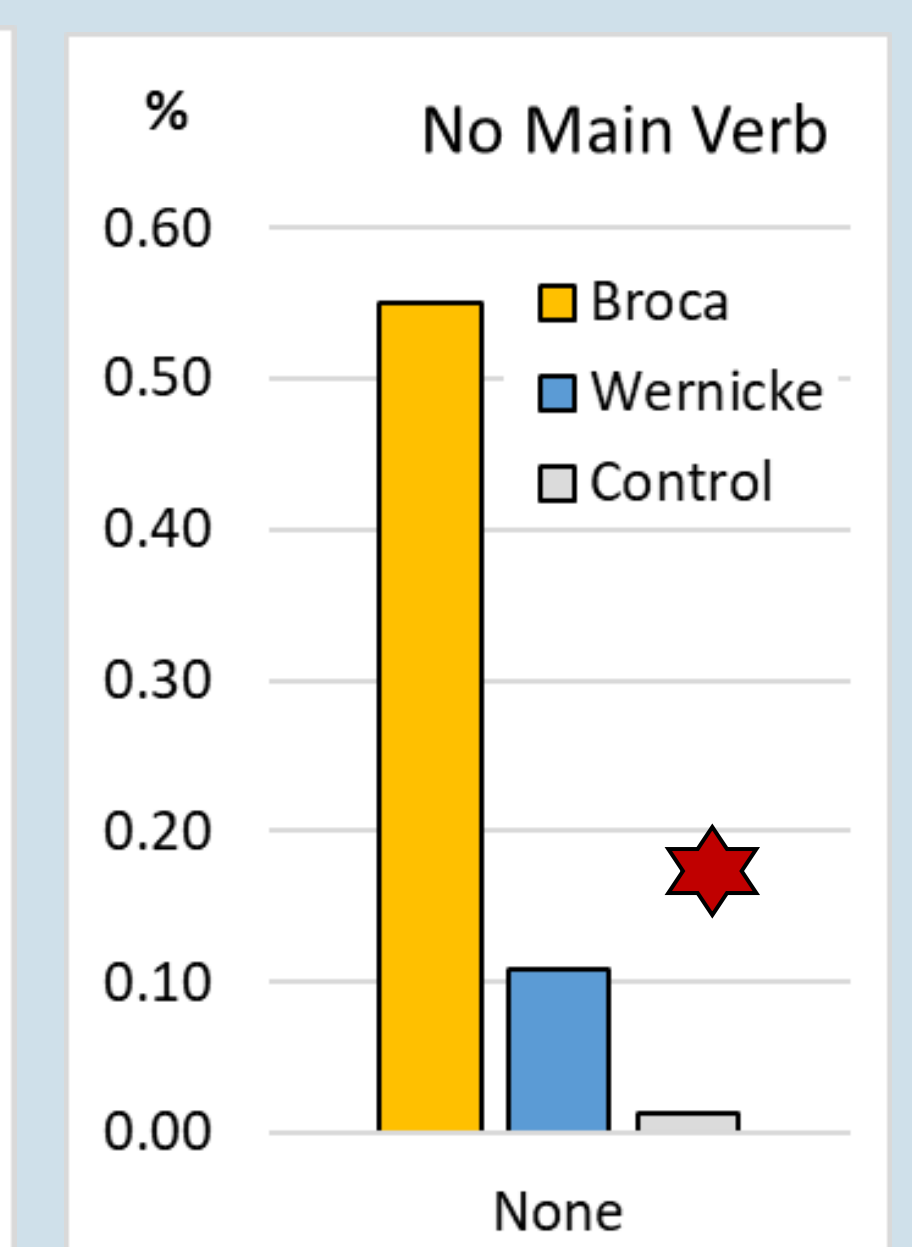
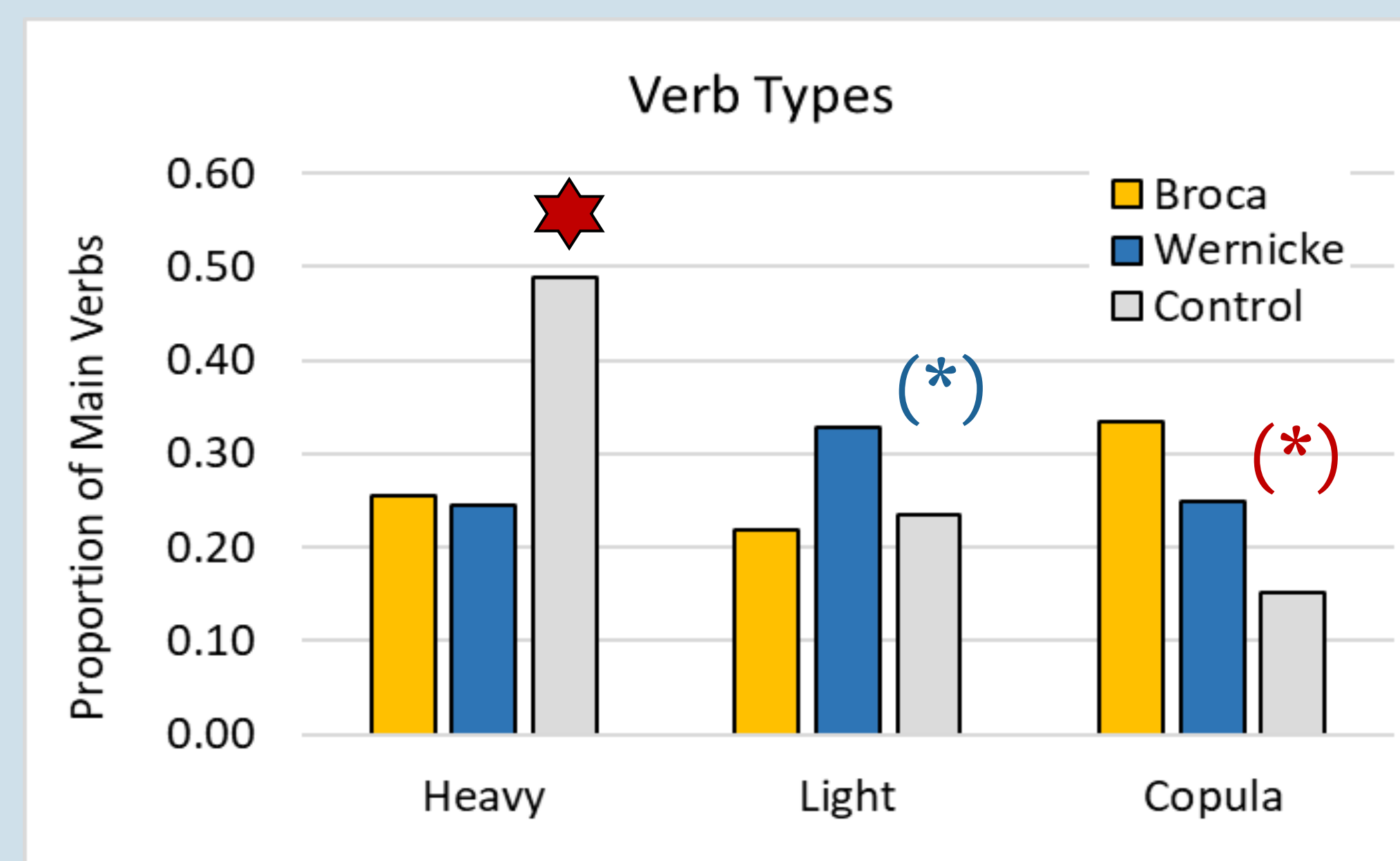
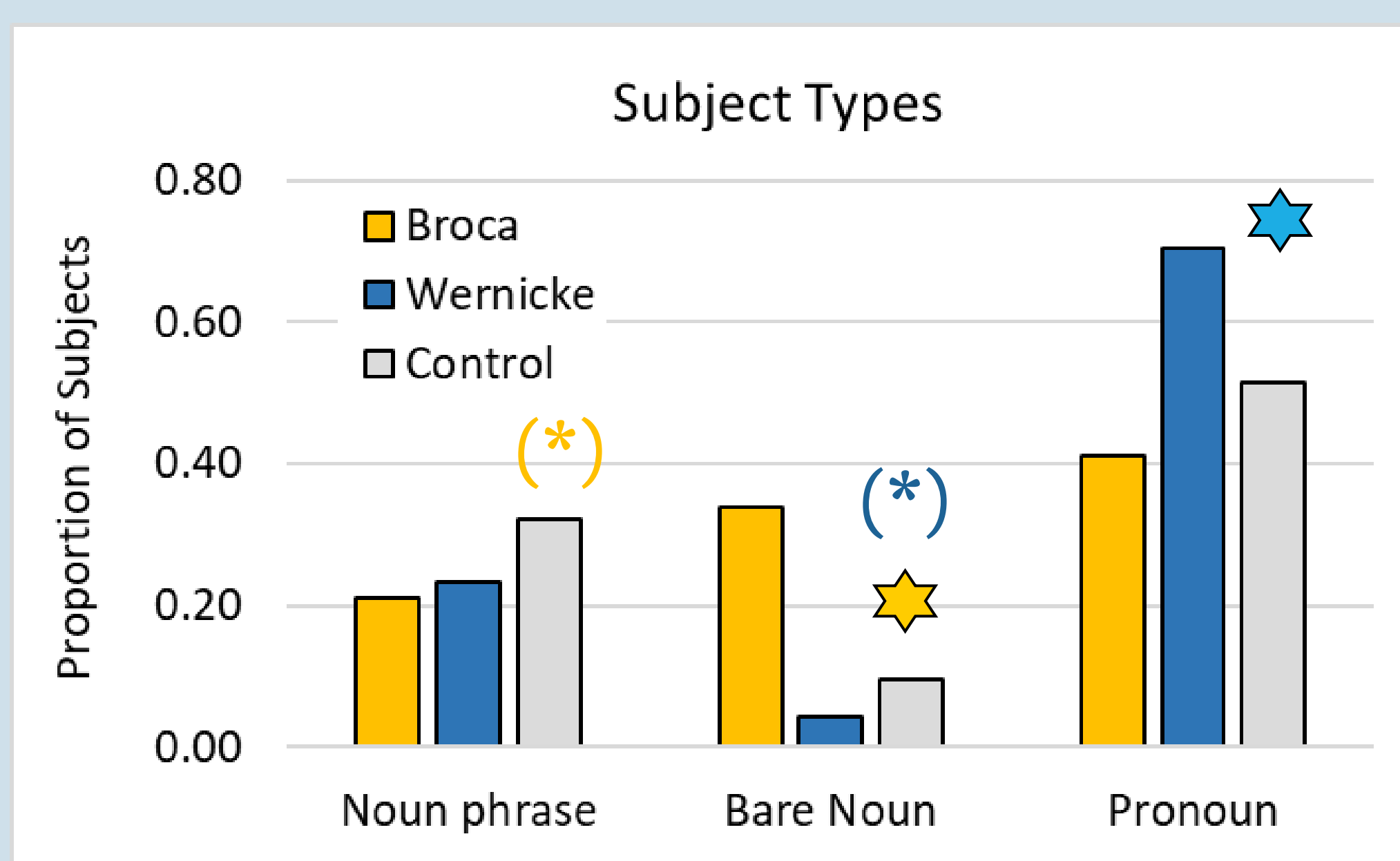
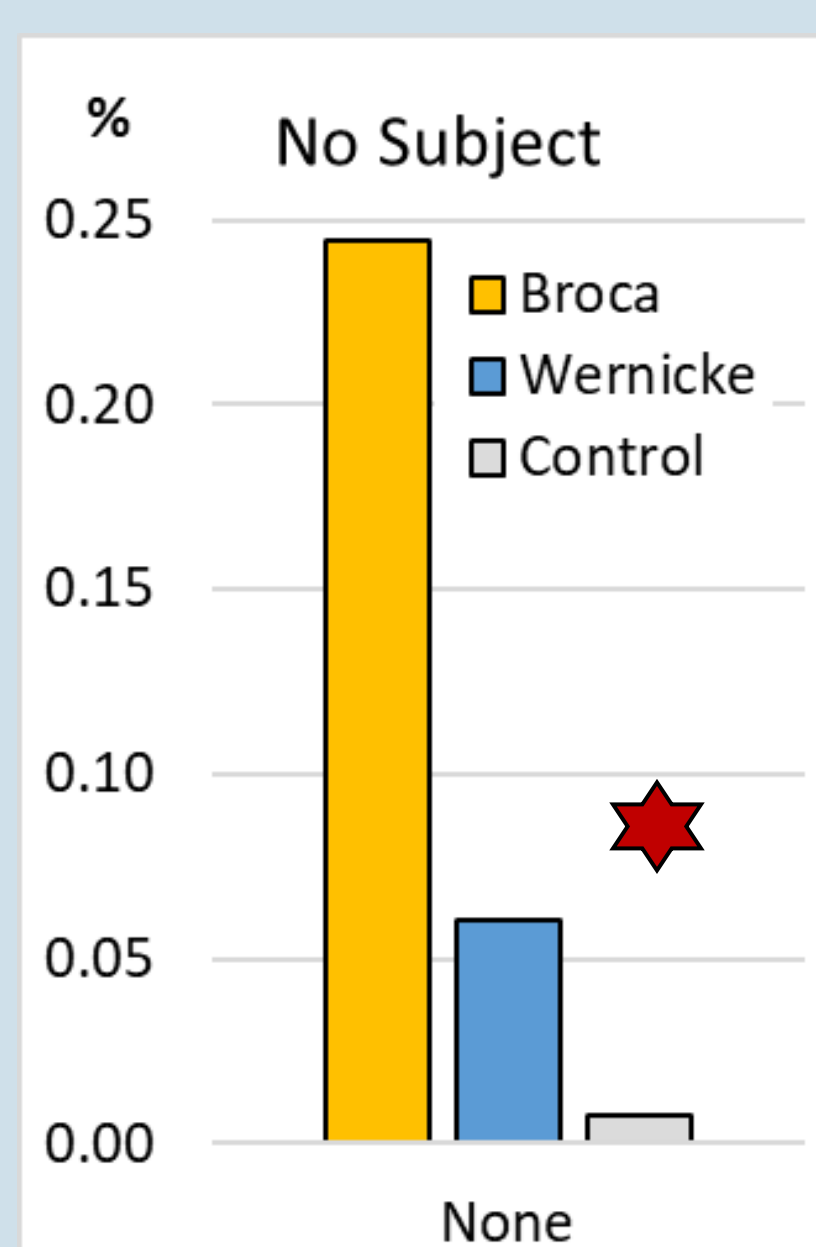
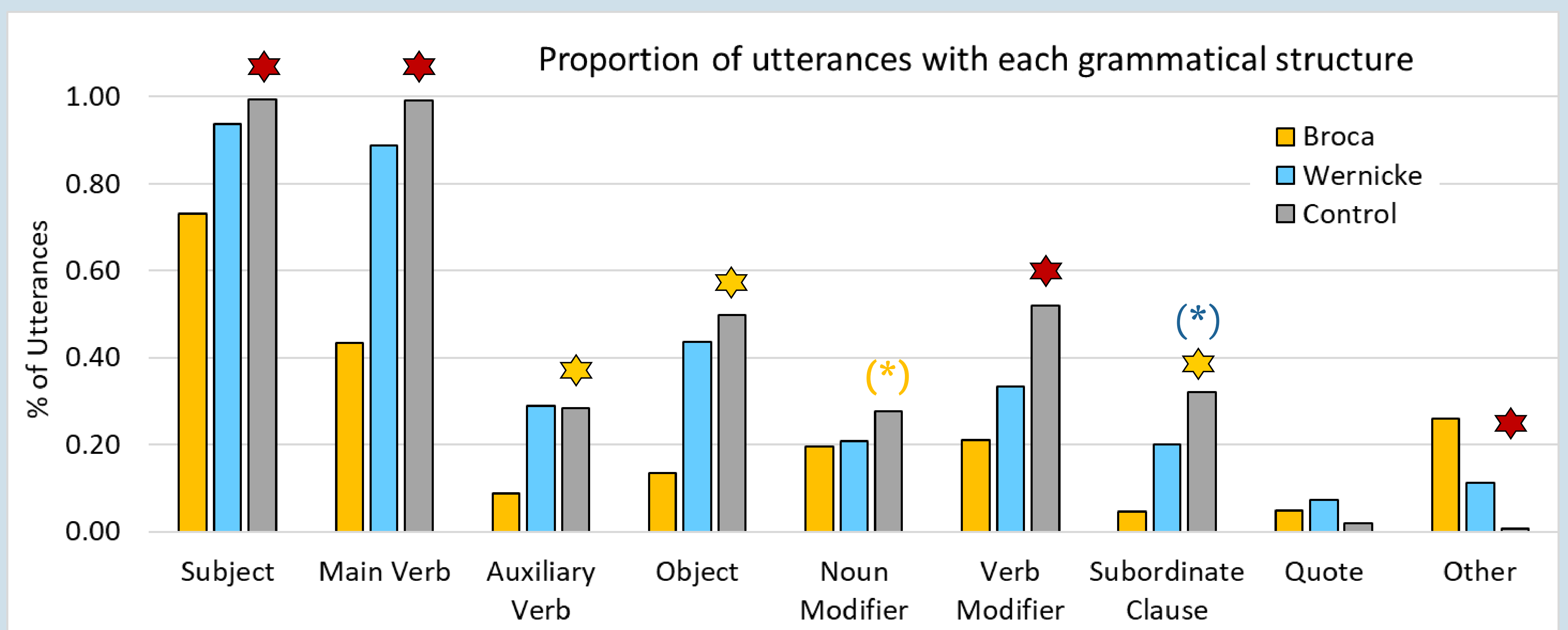
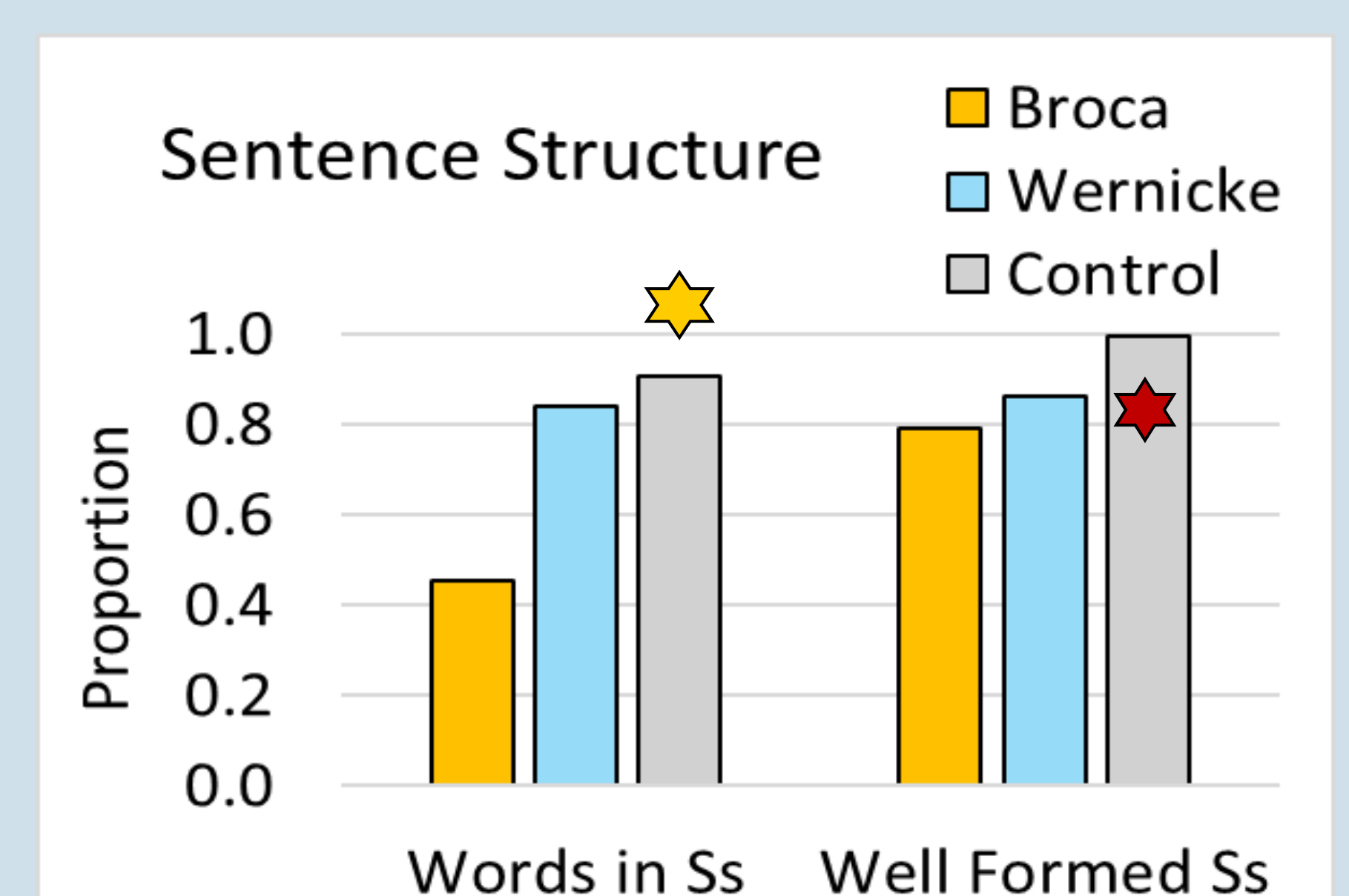
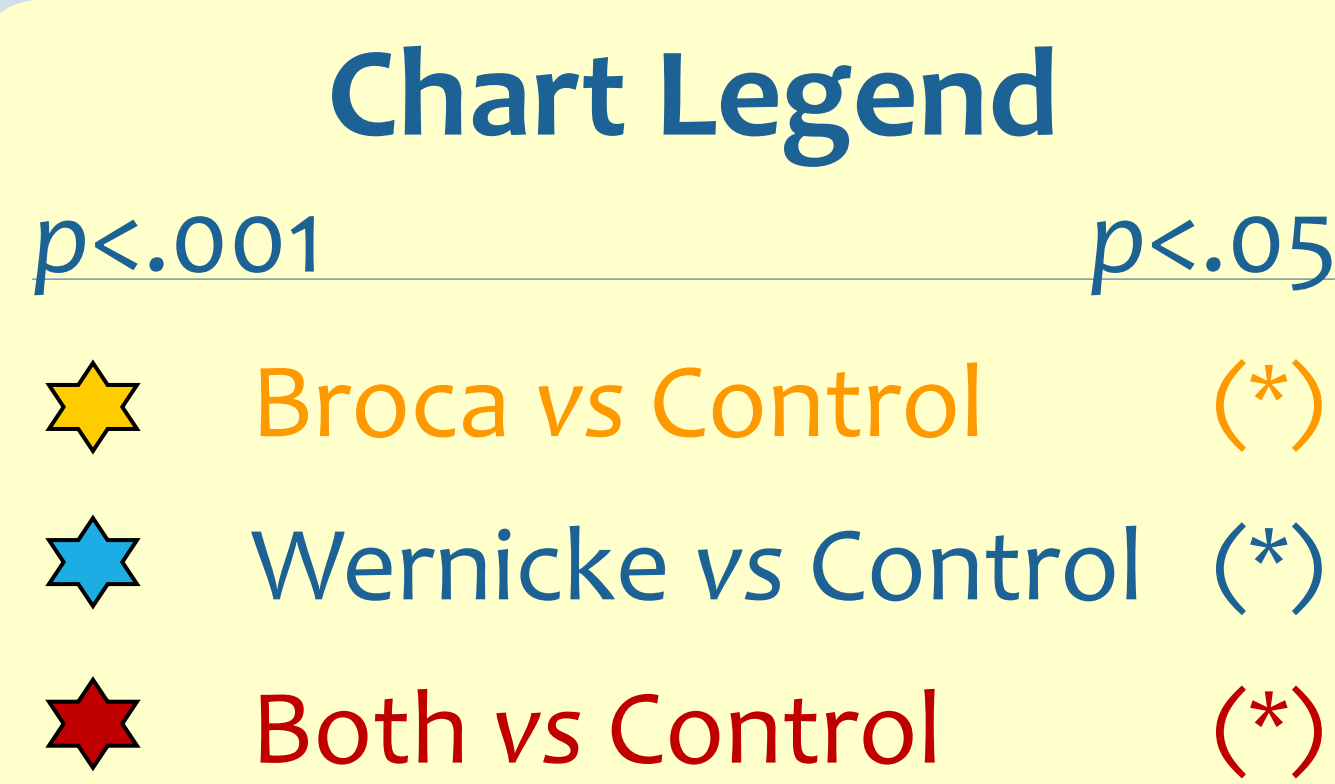
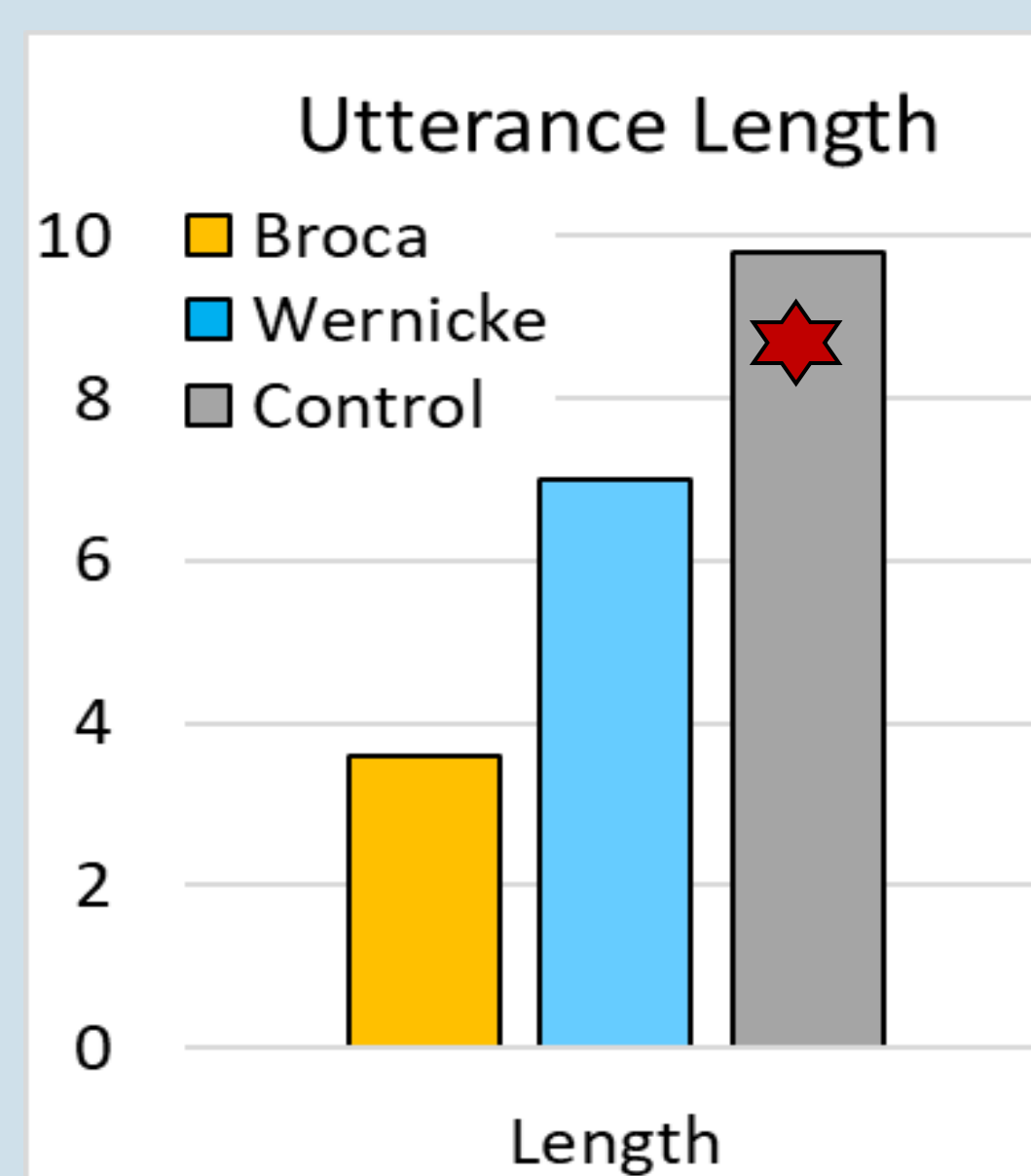
## Methods

- 20 each of 3 age-matched groups from AphasiaBank:
  - Broca's aphasia (BA)
  - Wernicke's aphasia (WA)
  - no aphasia (Control)
- BA and WA groups were also **severity-matched**
- 1295 utterances (BA=296, WA=372, Control=627) from Cinderella story analyzed for structural elements:
  - utterance length, grammaticality, and complexity (CQPA)
  - presence and types of **obligatory elements** (subjects & main verbs)
  - elaboration of elements (e.g., modifiers, objects, auxiliary verbs)



## Results

- Both **BA & WA** produced **shorter utterances** and **fewer grammatical utterances** than **Controls**, but only **BA** produced more **sentence fragments**.
- Both **BA & WA** **omitted subjects and main verbs** more often than **Controls**, but BA did so more often than **WA** ( $p < .001$ ).
- Only WA** produced **more pronoun subjects** than **Controls**.
- Both **BA & WA** produced **fewer heavy verbs** and **more copulas** than **Controls**, but **only WA** produced **more light verbs** than **Controls**.



## Discussion

- Similarities in grammatical deviations** of BA and WA from typical patterns (e.g., shorter utterances, reduced verb elaboration, more grammatical errors) support a contribution of **reduced processing resources** (e.g. Faroqi-Shah, 2023; Boye & Harder, 2023) that is likely not specific to agrammatism.
- Qualitative differences** (e.g., retrieval and elaboration of verbs; overuse of pronouns and light verbs) suggest:
  - additional **agrammatic deficits** of **morphosyntactic combination**, (Faroqi-Shah, 2023; Boye & Harder, 2023);
  - a relatively preserved ability in paragrammatism to **fill obligatory slots with empty elements**.