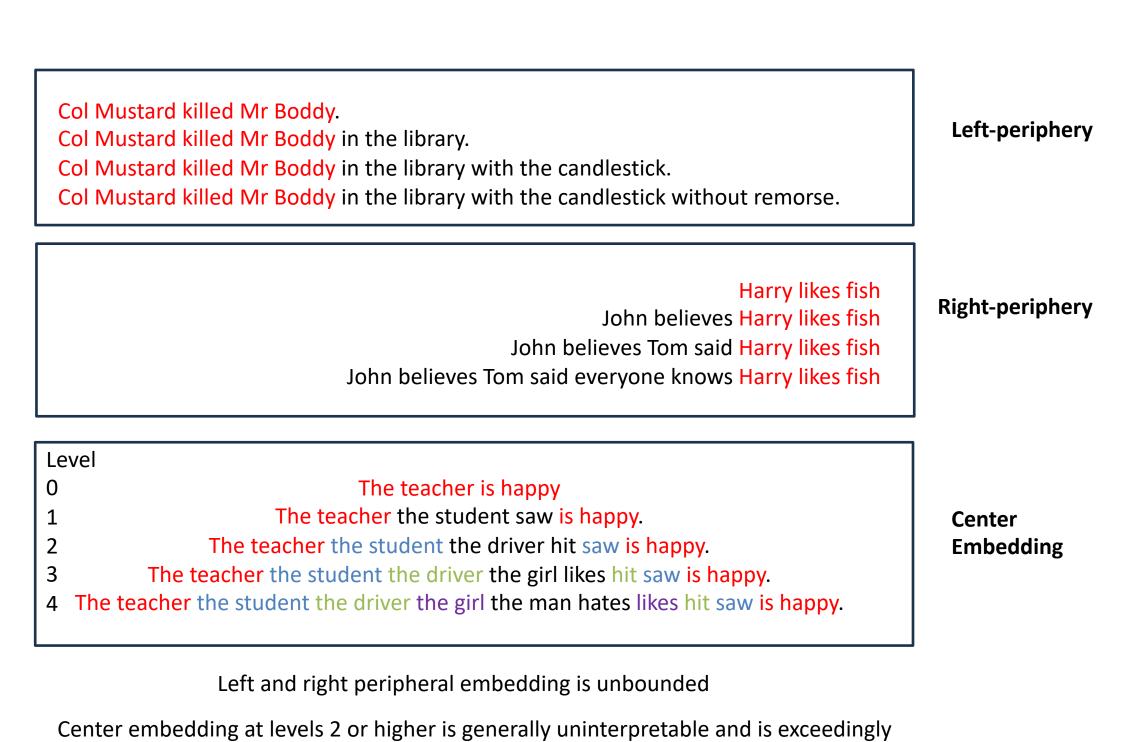




Sparks of Pure Competence in LLMs: the Case of Syntactic Center Embedding in English

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Syntactic Embedding

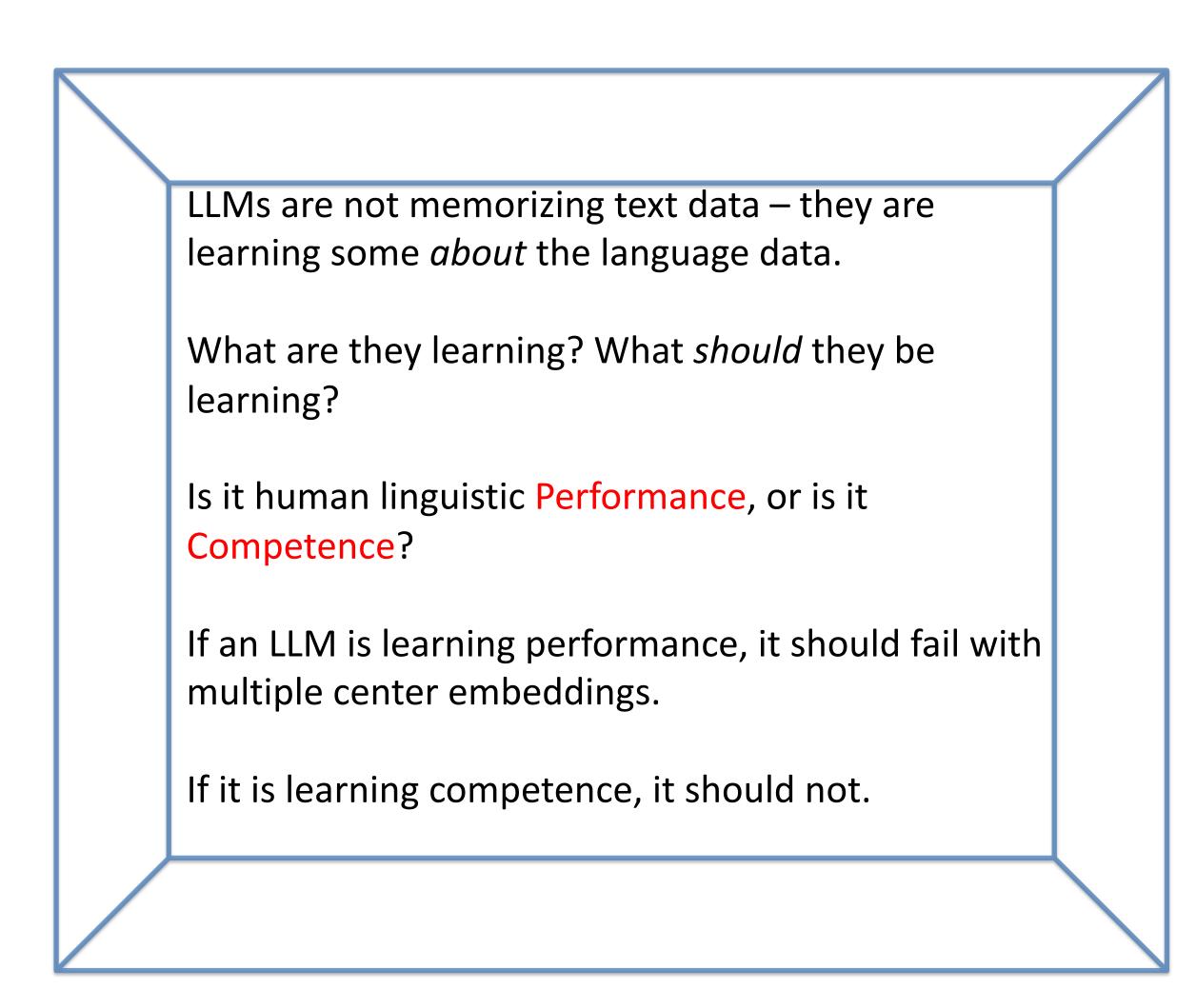


Competence vs. Performance

According to the Competence Model, center embedding is fully grammatical. (Chomsky 1957)

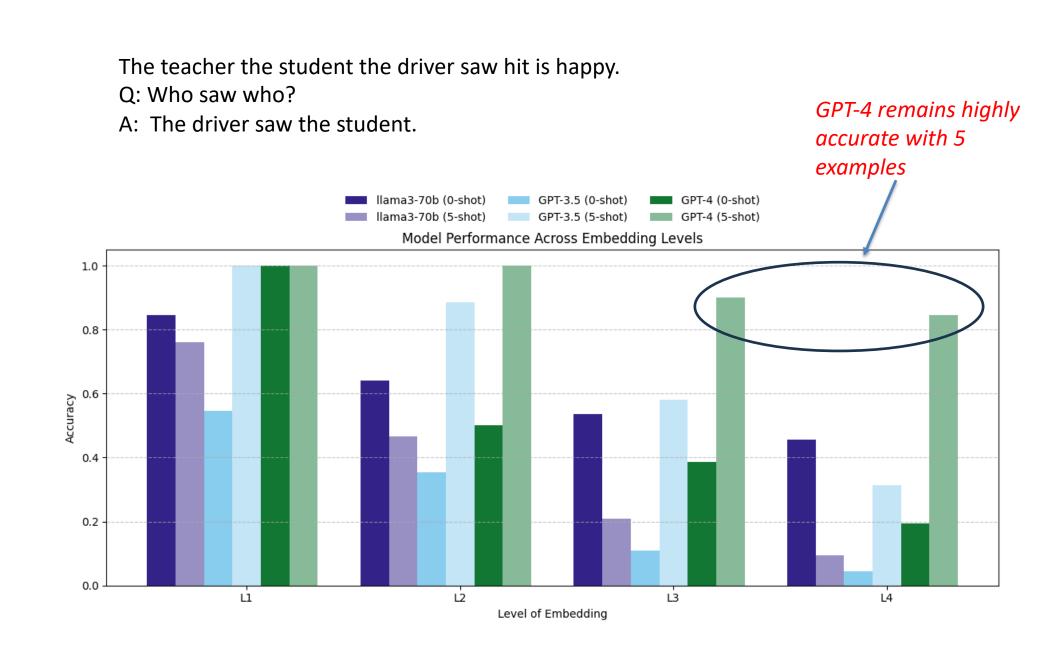
Human Performance is different -- multiple levels of center embedding are unacceptable (Gibson 1998)

The Question



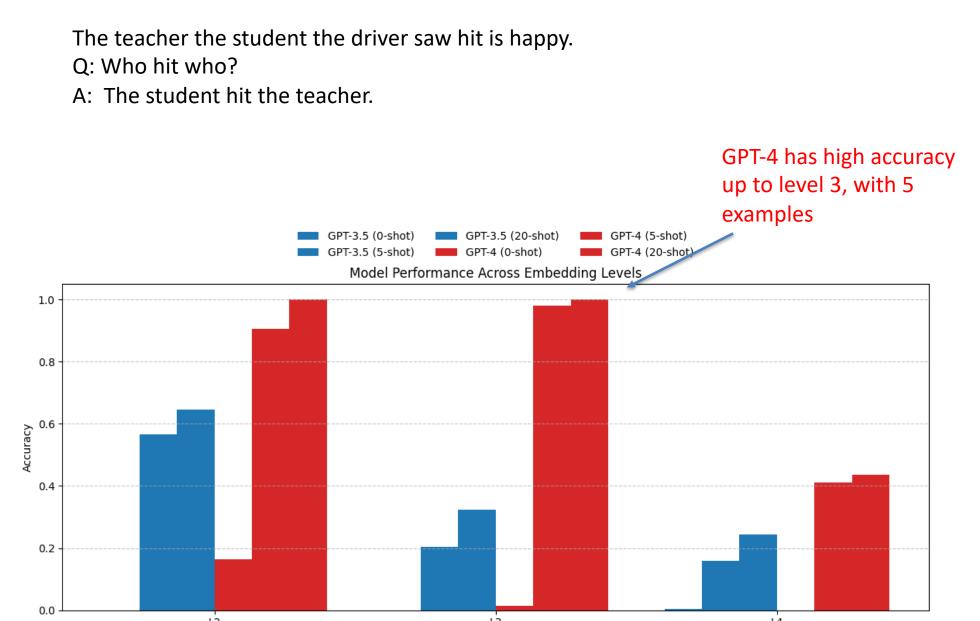
Test 1

Q0: Question targets most deeply embedding clause



Test 2

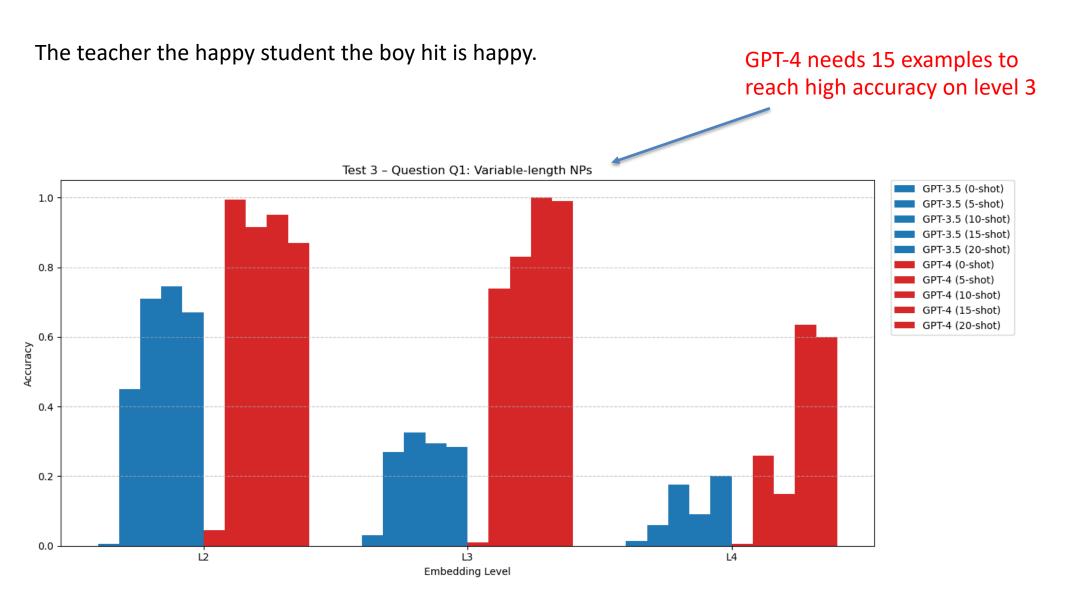
Q1: Question targets *next* most deeply embedding clause



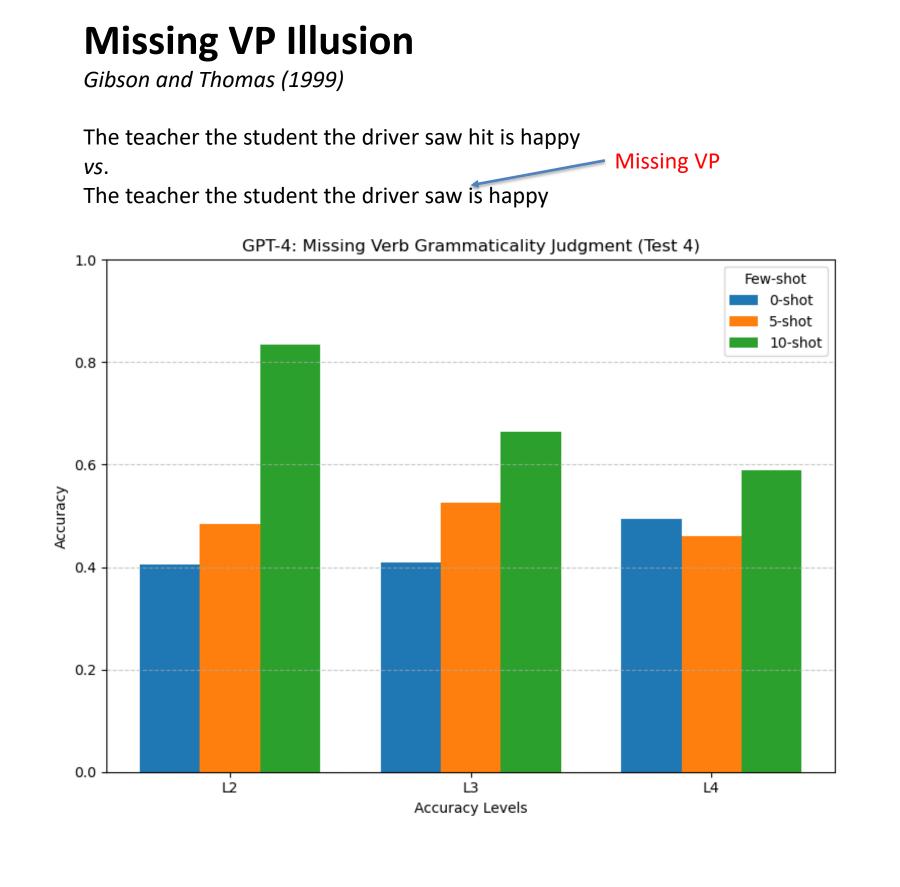
Test 3

Variable-length NPs:

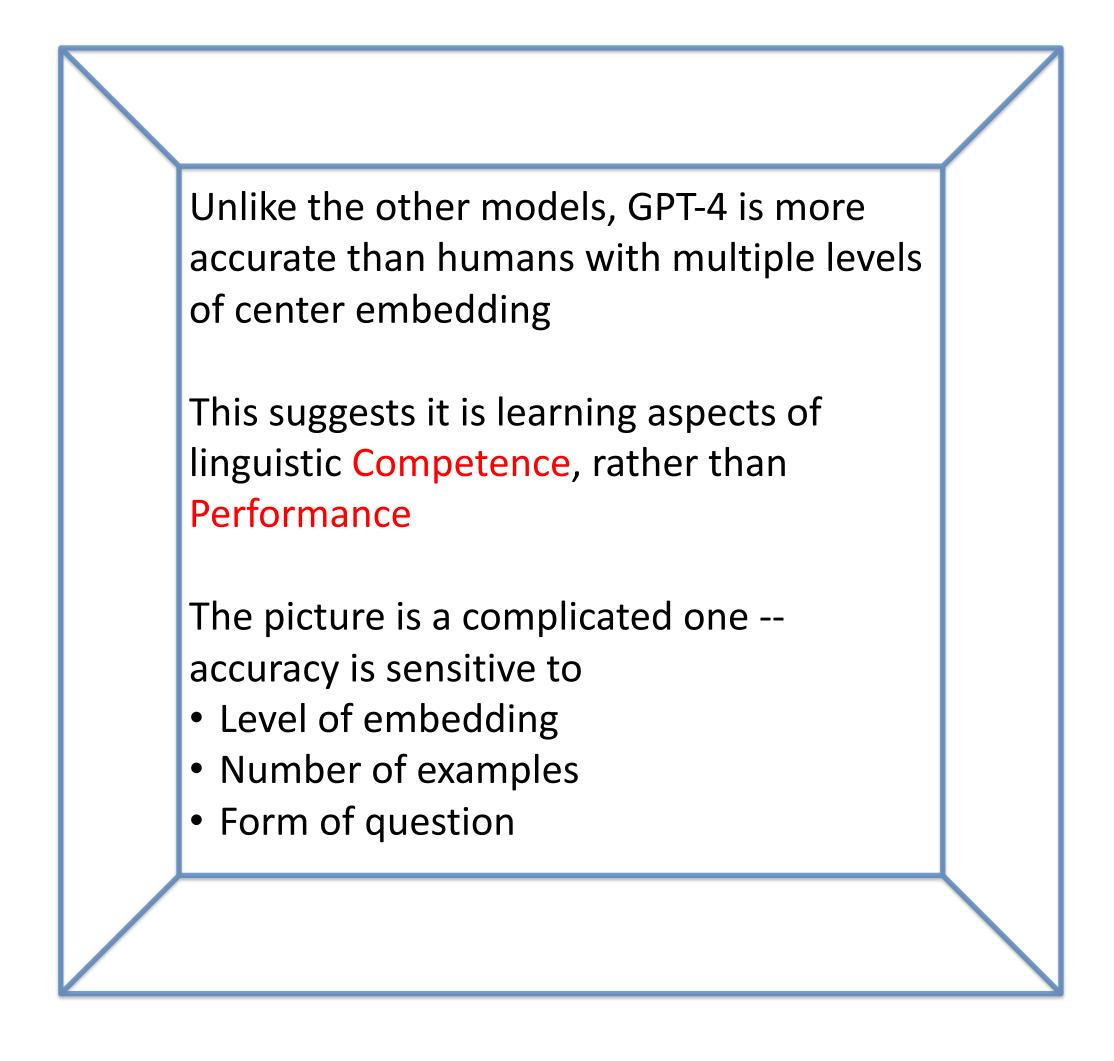
NPs can be either one word or two words



Test 4



Conclusion



References

Noam Chomsky. 1957. Syntactic structures. The Hague: Mouton.

Edward Gibson. 1998. Linguistic complexity: Locality of syntactic dependencies. Cognition, 68(1):1–76.

Edward Gibson and James Thomas. 1999. Memory limitations and structural forgetting: The perception of complex ungrammatical sentences as grammatical. Language and Cognitive Processes, 14(3):225–248.