

Hypothesis

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1 question

Q: How to make an intelligent system that learns to manipulate symbols?

2 survey

2.1 cognitive science

Chomsky says that the power to taming syntax is innate property of human brain (universal grammar) [1]. Ibbotson says that “the complexity of language emerges not as a result of a language-specific instinct but through the interaction of cognition and use” (usage-based theory) [5]. According to the usage-based theory, linguistic structure develops by 1. categorization, 2. chunking, 3. rich memory, 4. analogy, and 5. cross-modal association [2, 5]. Children use a limited number of reliable short frames.

“ Overall it seems there is good evidence to support the usage-based prediction that language structure emerges in ontogeny out of experience (viz. use) and when a child uses core usage-based cognitive processes – categorization, analogy, form-meaning mapping, chunking, exemplar/item-based representations – to find and use communicatively meaningful units. [5] ”

The meaning of symbols is established by convention [8, 9, 6].

2.2 transformers

Transformer learns syntactic information [7, 4, 3, 10].

3 Note

References

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