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Journal

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Publication Date

2024

Copyright Information

Peer reviewed

Modelling Pragmatic Inference in Children's Use of Perception Verbs with Language Models

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Abstract

Perception Verbs (PVs) can have, besides their denotational interpretation that 'X perceives Y', other interpretations depending on context. For example, in narratives we often find contexts where seeing something introduces a new referent, heralds a pivotal event, or compresses redundant information about characters' inner states. We computationally model the emergence of such pragmatic use in children (4-12y) with recent Language Models (LMs). Since LMs are partly trained narrative corpora and can model coherence in narratives, we assume that a LM can be used to identify PV contexts that humans recognise as having a pragmatic function. We sample PV contexts from ChiSCor, a corpus of Dutch children's freely told narratives, and use the confidence of LM predictions to identify developmental patterns in pragmatic use of PVs for children of different ages. Simultaneously, our setup allows us to identify types of pragmatic meaning that LMs still struggle with.