Developmental changes in the semantic part structure of drawn objects

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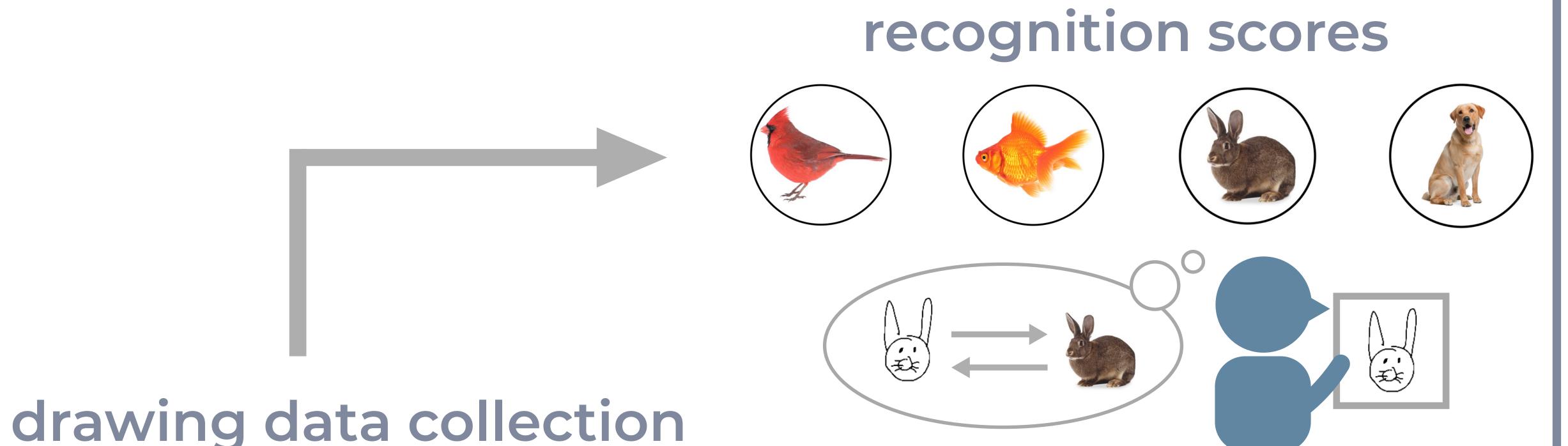
Question

Across childhood, children produce increasingly recognizable drawings of visual object concepts.

How well are such changes in recognizability explained by changes in the *amount* and *kind* of information that children include about the parts of each object?

Methods

recognition scores

Additional 3-10-year-olds played "guessing games" to measure the recognizability of each drawing in the dataset

drawing data collection

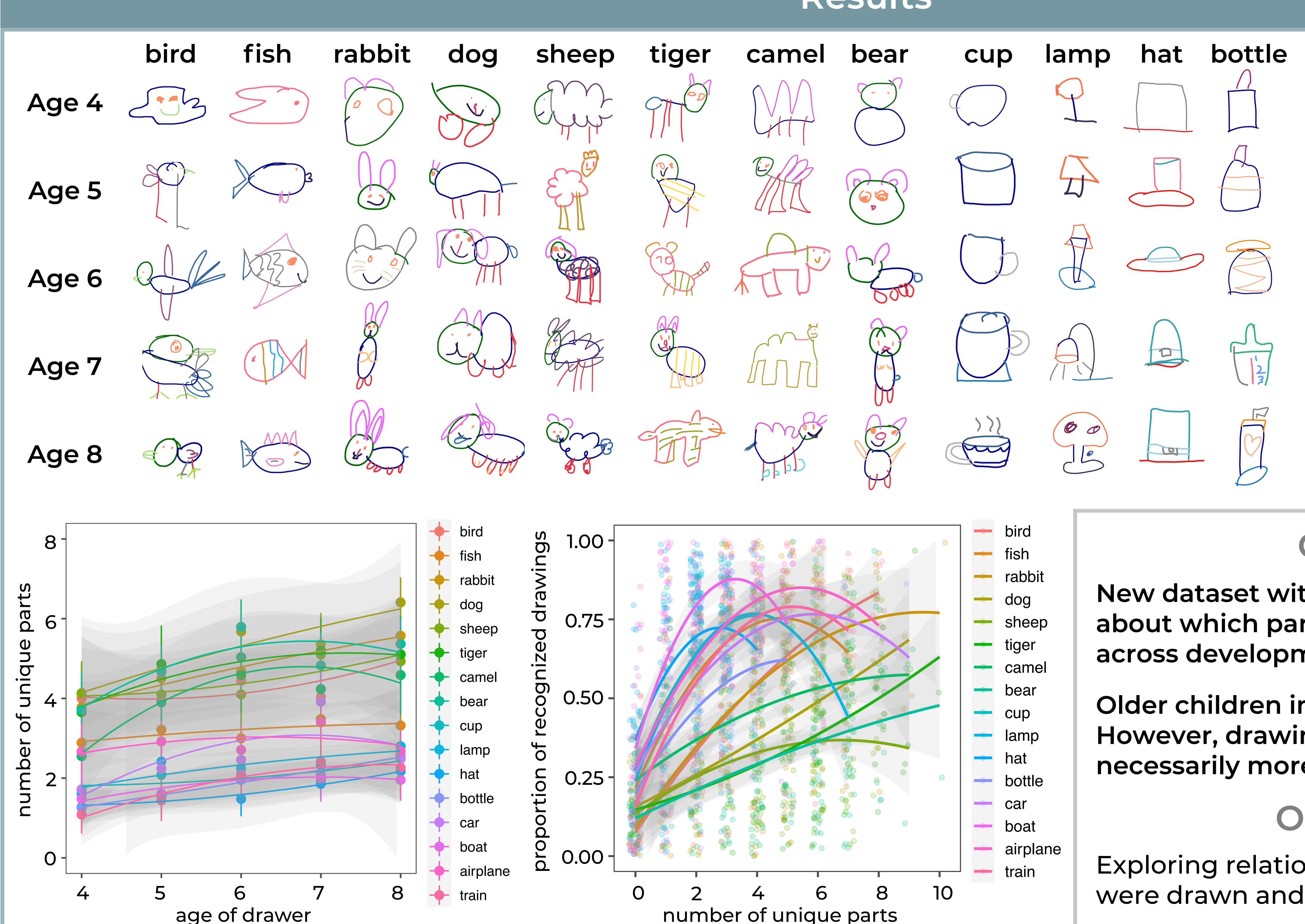4-8-year-olds produced 2,160 drawings across 16 common object categories

semantic annotations

Adults labeled each stroke in the drawing dataset with the object part that it represented

Results

Drawings become enriched with more parts across development

Complex relationship between number of unique parts and recognizability

Conclusion

New dataset with fine-grained information about which parts of objects children draw across development.

Older children include more unique parts. However, drawings with more parts are not necessarily more recognizable.

Ongoing work

Exploring relationship between which parts were drawn and recognizability.

Understanding how the appearance of different parts impacts recognizability.