

Can a balloon be a lollipop?

Four-year-olds use representational flexibility when understanding pictures

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Erika Nurmsoo
University of Bristol

Melissa Allen
Lancaster University

Norman Freeman
University of Bristol

Introduction

How do children interpret and label ambiguous pictures?

Artist Intent: Under some conditions, children label drawings according to the artist's intent, even when the drawings are ambiguous (Bloom & Markson 1998)

Under other conditions, 7-year-olds but not 4-year-olds used an artist's intent to label an ambiguous drawing (Browne & Woolley, 2001).

Representational Flexibility: Do children appreciate that an ambiguous drawing might represent multiple referents? Bloom and Markson (1998) give anecdotal evidence that they do not: 3- and 4-year-old children would often strongly object to a mislabeling of their picture.

A mature stance towards pictures respects the artist's intention, while appreciating that a given drawing could act as a symbol for multiple referents.

Our questions:

Do children accept multiple labels for ambiguous drawings?

Under what conditions will children show this flexibility?

Does this change over development?

Experiment 1: Can it be a lollipop?

Research questions:

Will children accept multiple labels for ambiguous drawings?
Does context affect children's representational flexibility

Participants: 48 4-year-olds and 46 6-year-olds

Contrast Condition



"balloon"



"lollipop"

Children watch as
Experimenter draws with
clear intent:
"I'm going to draw a balloon!
... Here's my drawing of a
balloon"

2nd trial: Ball/plate or book

Unique Condition



"balloon"

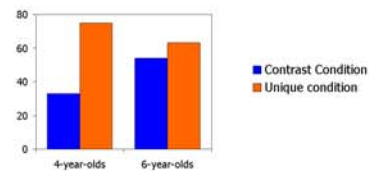


"snake"



10 minute delay
memory check (all above 70% correct)
Label question: **could this be a lollipop?**

Proportion of children accepting a second label:



In **Contrast** condition, 4-year-olds refuse a second label.
In **Unique** condition, they accept it.
6-year-olds perform similarly with or without contrast.

Experiment 2: Would it taste good?

Research questions:

Will participants accept properties of both labels?
How do adults interpret these questions?

Participants: 30 4-year-olds, 30 6-year-olds and 18 adults



"balloon"



"book"



"ball"

Children watch as
Experimenter
draws with clear
intent

1. Label question for each drawing: **Could this be a lollipop?**
YES: 4-year-olds: 68% 6-year-olds: 83% adults: 93%

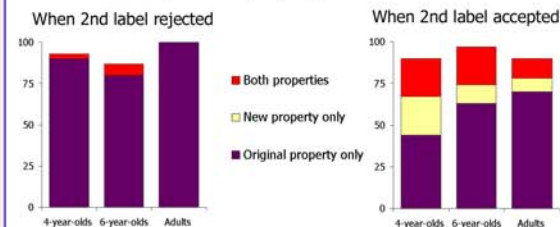
2. **3 property questions for each drawing:**

Property of old label: **if we let it go, would it float?**

Property of new label: **if we ate it, would it taste good?**

Distractor property: **if we dropped it, would it bounce?**

Proportion of property endorsements:



Results

Labels: Four- and six-year-olds labelled a drawing according to the artist's declared intent, and accepted multiple labels for a given ambiguous drawing when there was no contrasting drawing.

Properties: Even when endorsing multiple labels, participants were significantly more likely to endorse the original property alone than to endorse both relevant properties.

Conclusions

The results confirm the inflexibility bias anecdotally reported by Bloom and Markson (1998) but also identify a condition in which most preschoolers became more flexible.

When asked about the properties of the depicted item, participants were significantly more likely to endorse only those properties that applied to the artist's original intent, consistent with results from adult participants.

Children understand that, when it comes to naming pictures, a declared prior intention should be respected but is not necessarily binding on a viewer.

References:

Bloom, P. and Markson, L. (1998). Intentionality and analogy in children's naming of pictorial representations. *Psychological Science*, 9, 200-204.
Browne, C. A. & Woolley, J. D. (2001). Theory of mind in children's naming of drawings. *Journal of Cognition and Development*, 4(2), 389-412.

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