



Demonstrating understanding of aspectuality depends on how the question is worded.

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SUMMARY

- Young children's understanding of perceptual aspectuality has been investigated by requiring them to choose the correct perceptual action to find out specific information about an object that has been hidden (e.g., Perner, 1991).
- The tasks reported to date are remarkably inconsistent in how they have referred to the target object (e.g., O'Neill, Astington, & Flavell, 1992; Pillow, 1993).
- Researchers have made different claims about whether children's performance will be affected by the question asked.
- The current study investigated whether 4-year-old children's ability to demonstrate understanding of aspectuality was influenced by how the test question was phrased.
- Performance was significantly worse when children were given a test question that did not refer directly to the target ("which one is in the tunnel") and we discuss the implications of these findings for the aspectuality literature.

INTRODUCTION

- Young children's understanding of aspectuality (the particular knowledge of objects that can be gained from different perceptual actions) has been investigated by asking them to choose the correct action to identify a hidden target object (e.g. Perner, 1991).
- The way that the target is referred to in the test question seems to vary in the extant literature. Children have been asked to find out "which one" has been hidden (e.g., Perner & Ruffman, 1995); "what colour" object has been hidden (e.g., O'Neill et al., 1992); whether the hidden object is "the red one" (e.g., Pillow, 1993).
- The literature suggests that children might find the aspect question (red) easier than both the dimension question (colour), and the identity question (which one), as it may remind them of the differentiating factor between the two original objects (O'Neill et al., 1992), or because it refers to a specific quality rather than an abstract concept (Pillow, 1993). However, the literature makes no clear prediction as to whether these two latter questions would differ.
- We made (to our knowledge) the first direct comparison between the test questions used in aspectuality tasks. Based on the existing evidence we expected that children asked aspect questions would perform better than those asked either the dimension or identity question.
- We hypothesised that any difference in performance would have important consequences for the aspectuality literature: some studies may have underestimated children's ability.

METHOD

PARTICIPANTS – 60 4-year-olds (mean age 4;8; 30 girls).

MATERIALS – The objects used were 7cm diameter balls. Two were blue and two were red. One of each was soft (stuffed with cotton wool) and one of each was hard (stuffed with a stone). A tunnel had a window in one end for looking through and a hole in the other end for feeling through. An opaque cloth and bag were used to hide the equipment when needed.

PROCEDURE – Children were allowed to examine, and had described to them, a pair of balls that shared one perceptual modality but differed in another (e.g., both soft, but one red and one blue). One of the pair was hidden in the tunnel and children were asked to find out information about it, by choosing either to look or to feel. Each child had two 'looking' trials and two 'feeling' trials.

Children were given one of the following test questions for all of their trials:

- Aspect - e.g., "find out if the one in the tunnel is the red one or the blue one (hard or soft)".
- Dimension - e.g., "find out what color the one in the tunnel is (what it's stuffed with)".
- Identity - e.g., "find out which one is in the tunnel".

RESULTS & DISCUSSION

Children were given a score of 1 for choosing the correct mode of perceptual access on each trial. Figure 1 shows the mean scores for each modality and condition.

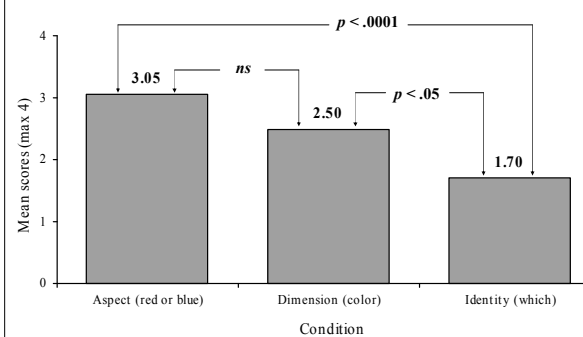


Figure 1. Mean number of trials correct

We conducted a repeated measures ANOVA with target question (aspect vs. dimension vs. identity) as a between-subject factor and modality (number of looking trials correct vs. number of feeling trials correct) as a within-subject factor.

We found a **main effect of target question**, $F(2, 57) = 10.07, p < .0001, \eta^2p = .26$.

- Children who received the aspect question performed better than those who received the identity question $t(38) = 4.57, p < .0001, r = .60$.
 - Children who received the dimension question also performed better than those who received the identity question $t(38) = 2.63, p = .012, r = .39$.
 - No difference was found between the aspect question ($M = 3.05$) and the dimension question $t(38) = 1.79, p = .082, r = .28$.
- No other effects were found.

The results supported the hypothesis that children's performance on aspectuality tasks would be affected by the phrasing of the test question. Children who were asked to identify the hidden target using a question that did not refer directly to the target performed worse than those who received questions referring to the target's modality dimension or perceptual aspect.

CONCLUSIONS

Differences in the phrasing of the test question affected young children's ability to choose the correct perceptual action to find out information about a hidden target. We suggest that:

- Children perform well when the question refers directly to the aspect or dimension of the target (making allowances for the difficulty matching O'Neill et al.'s (1992) tactile and visual dimension questions).
- For the identity question children have to recall their pre-trial experience of the objects in order to figure out what action they need to take. Perner & Ruffman (1995) agree that children of this age have difficulty re-experiencing this type of event.
- Future research will investigate further how phrasings and recall abilities might affect other findings in the aspectuality literature.

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