

Young Children's Imitation of Causal Actions is Influenced by the tester's Prior Intention

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INTRODUCTION

- Whether children **imitate faithfully** or only **emulate goals** depends on many factors, including physical causality, the tester's intentional or pedagogical cues, and the rationale behind the actions¹⁻⁷.
- **Children's tendency to imitate faithfully or emulate also depends on age**; infants and toddlers usually engage in more goal emulation, preschoolers engage in more faithful imitation⁴⁻⁶.

OBJECTIVE

- We investigate the hypothesis that the age difference in imitation behavior is due to a **difference in social learning**. We hypothesize:
 - Toddlers imitate faithfully **only when they have explicit social cues**^{1,6}
 - Preschoolers infer social intent therefore imitate faithfully **by default** (unless they have other reasons not to, such as an unreliable tester⁷)

METHOD

- **Participants:** 36 2-year-olds (19 males, age 23-33 mo) and 36 4-year-olds (19 males, age 4.0-5.0 y). Children of each age were randomly assigned into 3 groups of prior games, $n = 12$ for each group.

1. Familiarization

Children were familiarized with the causal properties of the 4 toys¹ used in the imitation test



2. Prior games

Children played one of 3 prior games, in which the tester showed different intentions



"Copy-me" game (set up a routine to mimic): the tester did several hand actions and told children to do the same.



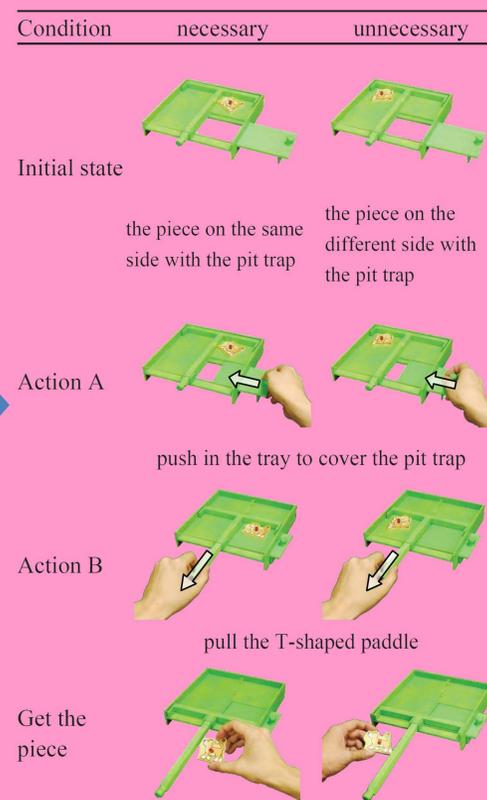
"Find-the-piece" game (set up a goal): the tester and children put puzzle pieces back to a puzzle board.



"Drawing" game (baseline control): children drew by themselves.

3. Imitation task

The tester demonstrated 3 actions in sequence. Children's response were coded as "full imitation (action A+B)", "goal emulation (action B only)" or "exploration (other actions)"



RESULTS & DISCUSSION

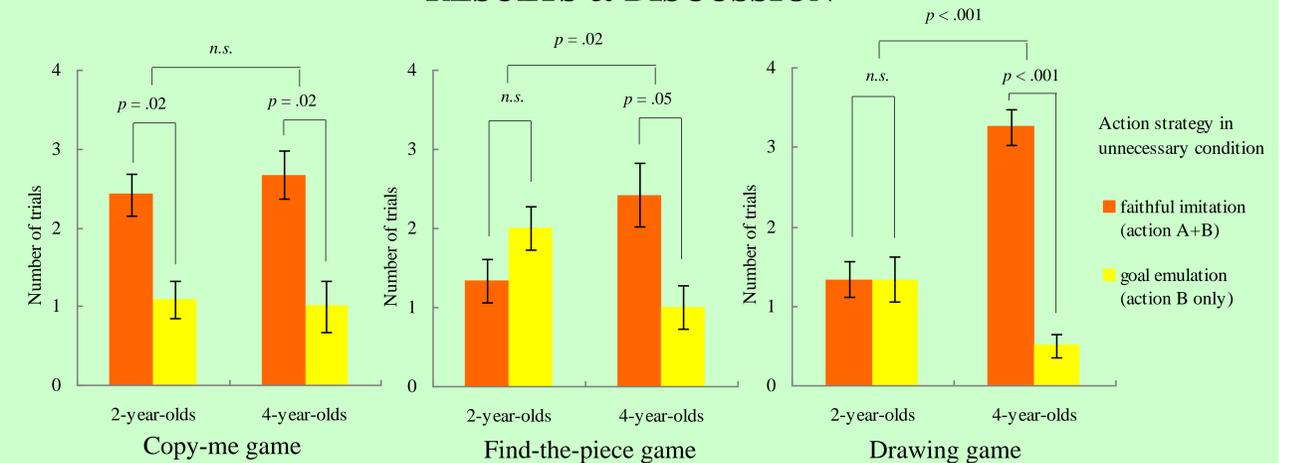


Figure 1. Children's faithful imitation and goal emulation responses in the unnecessary condition

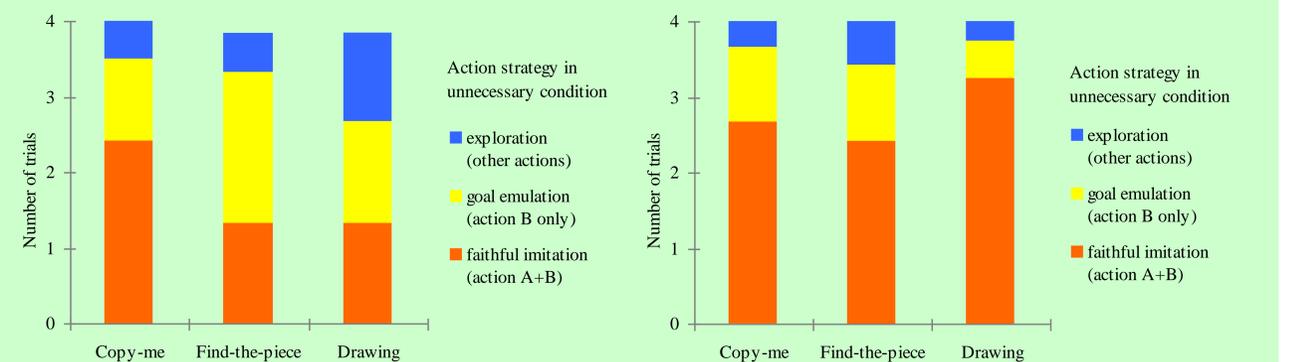


Figure 2. 2-year-olds' action strategy by prior game

- 2-year-olds' action strategy in unnecessary condition depended on the prior games ($F(4,66) = 5.56, p = .003$).
 - Faithful imitation: copy-me > (find-the-piece = drawing)
 - Goal emulation: Find-the-piece > Copy-me
 - Exploration: Drawing > (Copy-me = Find-the-piece)
- This difference was not the result of less attention to the demonstration after playing "find-the-piece" game or "drawing" game – infants consistently imitated both actions in the necessary condition.

Figure 3. 4-year-olds' action strategy by prior game

- 4-year-olds' action strategy did not differ across 3 prior games ($p > .17$).
- They were more likely to imitate faithfully than 2-year-olds ($F(1,66) = 21.1, p < .001$). This difference was significant for find-the-piece and drawing games, but not for copy-me game.
- When asked whether it's possible to get the piece without action A in unnecessary condition, 94% said yes and/or performed goal emulation.

CONCLUSIONS

- **Toddlers faithfully imitated the tester who provided explicit social cues to copy actions.** They emulate the tester who provided explicit cues to get the piece. Without explicit cues, they engaged more in exploratory play.
- As in previous studies, **4-year-olds showed a high rate of faithful imitation**, even when the tester did not show social cues to let them copy.
- **The results suggest that there are important developments in social learning through imitation between 2- and 4-years of age.** Further studies should further examine the role of social context in determining children's learning from others actions.

References

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