**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.
- Preschoolers infer social intent therefore imitate faithfully by default (unless they have other reasons not to, such as an unreliable tester).

**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 actions.
- 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 imitation.

**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 toys used in the imitation test.

2. Prior games
   - Children played one of three prior games, the list of which was shown below:
     - **“Copy-me” game**: The tester did several hand actions and told children to do the same. (action A+B)
     - **“Find-the-piece” game**: The tester found a piece and then put puzzle pieces back to a puzzle board. (other actions)
     - **“Drawing” game**: The tester drew by themselves. (baseline control)

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)”. Conditions included:
     - **Necessary condition**: Necessary condition
     - **Unnecessary condition**: Unnecessary condition

**Results & Discussion**

- **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.

- **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**