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Presentation

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Infants are more likely to imitate novel actions when receiving ostensive and referential signals. 
- Newborns imitate facial gestures.
- 13-month-olds imitate inefficient, non-goal directed actions.
- 14-month-olds imitate unusual actions after a 1-week delay.
- 14-month-olds selectively imitate unusual actions, if the action is demonstrated with ostensive and referential signals.
- 3- and 5-year-olds imitate both causally necessary and irrelevant steps in an action sequence and interpret them as normative.

Theory of Natural Pedagogy

Imitation supports learning of cognitively ‘opaque’ information (e.g. cultural practices).
Imitation is facilitated by teaching: knowledge demonstrations with ostensive, referential cues (e.g. eye contact, pointing).

Discussion

Communication facilitates imitation in infants.
However, when investigating how often children copy a novel action, children perform the novel action many times, irrespective of pedagogical communication during action observation.

Results example

Infants were more likely to imitate after a signalled demonstration than after a non-signalled demonstration.

Method

Participants
44 18-month-old infants

Design
Model familiarity: familiar model vs. stranger model
Pedagogical communication: with signals vs. without signals
Baseline: familiar model, with pedagogical signals

Procedure
1. Warm up with Experimenter 1 (free play with pedagogical communication)
2. Four different test trials
   a) with either the familiar experimenter (E1) or a ‘stranger’ (E2)
   b) with pedagogical signals before and during action demonstration or without signals: e.g., eye contact, “Watch this, [name]”, pointing vs. no talking, no eye contact, no pointing

Study I: Do we have to teach all the time?

Baseline. Imitation on 9% of trials in baseline and on 44% of trials in experimental conditions (p<.05)

Communication. Infants were more likely to imitate after a signalled demonstration than after a non-signalled demonstration.

Table: Imitation rates broken down by model familiarity and pedagogical communication in average per cent of trials. Significant differences between communication conditions (p<.05 total, p<.05 familiar/ stranger) and familiarity conditions (p<.05 total/ with/without signals)

<table>
<thead>
<tr>
<th>Model familiarity</th>
<th>Stranger model</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>With signals</td>
<td>66.7%</td>
<td>69.6%</td>
</tr>
<tr>
<td>Without signals</td>
<td>40.0%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Total</td>
<td>52.6%</td>
<td>34.3%</td>
</tr>
</tbody>
</table>

Study II: Do parents actually teach their children?

Participants 1: 18 months

Exploring together: Participant 1: 18 months
P: point -> car front, “What can it do?”
C: grabs car and talks

Pedagogical communication
P: “Look here”, “action”
P: “Play with function 1”, “Play with function 2”

Participant 3: 4 years

Exploring together: Participant 3: 4 years
P: “Look here”, “action”
P: “Exploration”

Method

Participants. 10 18-month-olds and 4-year-olds

Materials. 2 novel toys with multiple hidden features

Procedure.
1. Parent watches 2 videos: action demonstration on toy A, no action on toy B (counterbalanced)
2. Parent (P) and child (C) play freely for 10 minutes with both toys

Discussion

Sometimes, parents use pedagogical signals to teach their children. Then, children might imitate their parents.

But often times parents direct their child’s attention and then ‘leave them space’ to detect the toy’s function themselves. The actions are then together developed further. 
Parents seem to direct and guide younger children more than older children.

References

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Effect of teacher familiarity and teaching in real life

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