

Supplementary Material

This PDF file includes:

Supplementary: Control analysis: impact of the time of test

Supplementary: Detailed Questionnaire

Control analysis: Impact of the time of test on the performances

Infants were tested at different time periods of the day. Because some trials in our experiment involved food, the time at which infants were tested may potentially have influenced their state of hunger and thus their motivation to participate in these food trials. To control for this potential “hunger” effect, we systematically noted the time at which each infant was tested, varying from 9am to 6pm. To simplify the statistical analyses, times were converted into a categorical variable with four main time periods (see Table S1): 9-10.30am (after breakfast), 11-12am (before lunch), 12.30am to 3pm (after lunch) and 3.30-6pm (before the afternoon break and/or dinner). The proportion of infants in each time period did not significantly differ between groups (see Table S1; Fisher exact test $p=.44$). An additional categorical variable was elaborated based on the previous one, grouping together in a “repletion group” the infants tested after breakfast and after lunch, and in a “hunger group” the infants tested before lunch or dinner. The number of infants did not differ significantly between the groups in the *hungry period* (14 infants in each group, see Table S1) as well as in the *repletion period* (7 in each group).

Table S1. Distribution of infants in each time period by group (note that the 4 infants who succeeded in the first presentation of rake-toy were excluded in the present analysis because they started succeeding before being exposed to any food condition). Grey cells refer to the repletion period, white cells to the hungry period.

Time period	9-10.30am	11am-12pm	12.30 to 3pm	3.30 to 6pm
Group _(spoon-toy) , n=21	6 (29%)	4 (19%)	1 (5%)	10 (48%)
Group _(rake-food) , n=21	3 (14%)	5 (24%)	4 (19%)	9 (43%)
Total in <i>hungry period</i>	28 (14 in each group)			
Total in <i>repletion period</i>	14 (7 in each group)			

To control for a potential effect of the time at which infants were tested on their motivation to access the food rewards, we ran two analyses on the proportion of successful infants in the

conditions involving food. Because there was no success in the rake-food condition of the facilitation phase, we performed these analyses on the spoon-food condition only. A two-tailed fisher's exact test showed no significant difference of performance between the four time periods of testing ($p > .50$). Similarly, we found no significant difference in the proportion of successful infants between infants tested in a repletion period and in a hunger period ($p = 1$). Thus, we can conclude that the time of the test did not impact the infants' performances.

Questionnaire used in the experiment

To evaluate the impact of infants' previous experience with spoons and other tools on their performance at the task, we asked the parents to fill in a questionnaire about their infants' behaviors with tools. In line with the perception-action hypothesis (Lockman, 2000), we expected infants who had accumulated more experience with the spoon and/or other tools across development to perform better in our toy-retrieval task. The questions from the questionnaire are detailed below.

1. Does your baby eat his/her meals before or at the same time than other people in your household?
2. How old was your baby when you first started feeding him with the spoon?
3. How old was your baby when he first started self-feeding with the spoon?
4. How often does your baby self-feed with the spoon?
 - a. About 100% of the meals on his own with the spoon (since when?).
 - b. About half of the meals on his own with the spoon.
 - c. About a quarter of the meals on his own with the spoon.
 - d. He/she rarely uses the spoon to self-feed.
5. Does your baby have a preference for the right or left hand when he uses the spoon? If yes, which one?
6. Is the spoon that your baby uses at home like the one in this experiment?
7. Have you ever watched your baby using a stick or another similar object to retrieve an out-of-reach toy (e.g. under a furniture...)?
8. Does your baby have a rake-like toy at home?