We predicted that infants would succeed on Spatial Discrimination at a younger age and in fewer trials than on Visual Discrimination.

Non-human primates find it much easier to learn SD than VD and are able to do so in the absence of the cover (Stiller, 1980; Maxin et al., 1980). Additionally, infants tend to pay more attention to physical properties (such as number, trajectory, etc.) than to object appearance (e.g. color) (Spelke, 1991; von Hofsten et al.

In Spatial Discrimination (SD), one must deduce the rule that the reward is always on the right or the left. The reward is always hidden under a cover of a particular appearance (e.g., color, number, trajectory, etc.) than to object appearance (e.g. color) (Spelke, 1991; von Hofsten et al.

In Visual Discrimination (VD), one must deduce the rule that the reward is always hidden under a cover of a particular appearance (e.g., a red, plaid squares or a blue, faked-plain plaid circles). The left-right locations of the covers are varied randomly over trials, thus, the left-right location of the reward is also varied.

We administered each condition (SD, SD w/ Irrelevant, & VD) with the reward attached to the underside of the cover, rather than having the reward sit in the well:

- Better performance on VD than when the reward is in the well.

To test this, we administered each condition (SD, SD w/ Irrelevant, & VD) with the reward attached to the underside of the cover, rather than having the reward sit in the well:

- Better performance on VD than when the reward is in the well.

The reward was still concealed within the well when the covers were in place. The reward was revealed to, though detachable from, the underlying of the cover.

Predictions of affecting the reward to the cover:

- Worse performance on SD & VD w/ Irrelevant than when the reward is in the well.
- Better performance on VD than when the reward is in the well.
- SPATIAL w/ Irrelevant performance not significantly different from VD.
- Better performance on VD than VD-attached than VD-in-well at 12 months.

Attaching the reward to the cover might help participants learn that the appearance of the covers is relevant to the task.

In VD, 2 dimensions are potentially involved in the task.

Hypothesis 1: Spatial discrimination easier than Visual discrimination.

Hypothesis 2: Spatial discrimination easier than Visual discrimination.

Performance on SD robust in the face of irrelevant information.

SD w/ Irrelevant performance not significantly different from VD

Predicted effects of attaching the reward to the cover:

- The covers were different from one another (same stimuli as VD).
- The correct performance due to a bias from correct performance due to mastery of the task.

Findings

More infants of 9 months than 12 months developed a bias late in the session.

More infants of 9 months than 12 months showed the fewest and 9-month-olds showed the most.

The number of infants developing a bias decreased with age. 9-month-olds showed the fewest and 9-month-olds showed the most.

Hypothesis 1 was not supported. There were no significant differences in performance on SD, SD w/ Irrelevant, & VD with the covers in the well or attached to the underside of the covers.

Both 9- & 12-month-olds performed significantly worse on SD-attached than SD-in-well at 12 months.

Both 9- & 12-month-olds performed significantly worse on SD-attached than SD-in-well at 9 months.

Hypothesis 2 was supported. Both 9- & 12-month-olds performed better on VD-attached than VD-in-well at 12 months.

Both 9- & 12-month-olds performed better on VD-attached than VD-in-well at 9 months.

Significantly more children showed a bias on VD w/-ill at 9 & 12 months. SD w/-ill at 12 months vs. VD at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Significantly more children showed a bias on VD w/-ill than VD-in-well at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.

Hypothesis 1 was not supported. Both 9- & 12-month-olds performed significantly worse on SD-attached than SD-in-well at 9 months.

Hypothesis 2 was supported. Both 9- & 12-month-olds performed better on VD-attached than VD-in-well at 9 months.

Early biases were more evident at 12 months than at 9 months.

Both 9- & 12-month-olds showed a bias early in the session.

More infants of 9 months than 12 months developed a bias late in the session.

These 2-month-olds showing a bias were more likely to overcome the bias than 12-month-olds.

100% of 21-month-olds succeeded on VD-attached if the infants showing a bias are omitted from the analysis.

BIASES

A bias was said to be present if either criterion was met:

1) 7 consecutive responses to the wrong value within the relevant dimension.
2) 5 consecutive responses to the wrong value within the relevant dimension.

Findings

Early biases were more evident at 12 months than at 9 months.

More 12-month-olds showed a bias early in the session than late.

More infants of 9 months than 12 months developed a bias late in the session.

Increased bias was present at 9 months than 12 months.

The number of infants developing a bias decreased with age. 9-month-olds showed the fewest and 9-month-olds showed the most.

Hypothesis 1 was not supported. There were no significant differences in performance on SD, SD w/ Irrelevant, & VD with the covers in the well or attached to the underside of the covers.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Significantly more children showed a bias on VD w/-ill than VD-in-well at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.

Hypothesis 1 was not supported. Both 9- & 12-month-olds performed significantly worse on SD-attached than SD-in-well at 9 months.

Hypothesis 2 was supported. Both 9- & 12-month-olds performed better on VD-attached than VD-in-well at 9 months.

Significantly more children showed a bias on VD w/-ill than VD-in-well at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 12 months.

Significantly more children showed a bias on VD w/-ill than VD-in-well at 12 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.

Both 9- & 12-month-olds performed significantly better on VD than on SD w/-ill at 9 months.