A New Procedure to Examine the Role of Intersensory Integration in an Operant Learning Task in 3-Month-Old Infants

Kelly Armstrong and Kimberly Kraebel – SUNY Cortland

Introduction

- Intersensory integration refers to the ability to combine information from different sensory modalities (i.e., visual and tactile) to form unified perceptual conclusions.
- This unity is aided by the detection of amodal cues; cues that are not specific to one sensory modality. Previous studies have shown that infants can detect amodal cues (e.g., Bahrick & Pickens, 1994).
- Most procedures examining the role of intersensory integration in learning have used simple procedures such as habituation and discrimination. For example, Bahrick and Lickliter (2000) found that 5-month-old infants were able to discriminate between two rhythms when the rhythms were presented in two sensory modalities (auditory and visual) but not when presented in only one modality (auditory or visual).
- Few studies, however, have assessed the influence of intersensory integration using more complex procedures, such as operant learning. The goal of the current study is to determine if a modified conjugate mobile procedure (Rovee & Rovee, 1969) can be used to analyze the role of amodal information in an operant learning task.

Purpose of Study

- To examine the use of a new, complex learning procedure to assess intersensory integration in 3-month-old infants.

Method

Participants

32 3-month-old infants participated.
- Control: 14 infants (10 females, 4 males); M age = 97.84 days (SE = 3.42); M SES = 62.88 (SE = 5.35).
- Cylinder: 8 infants (4 females, 5 males); M age = 97.56 days (SE = 3.22); M SES = 69.59 (SE = 6.74).
- Brick: 8 infants (3 females, 5 males); M age = 104.70 days (SE = 3.05); M SES = 63.01 (SE = 8.23).

Apparatus

- Computerized Kicking Apparatus
- See Kraebel, Fabia, & Gerhardt (2014) for mechanical details.
- A padded shield prevented the infants from processing the shape visually or orally. The padded shield was 22 cm long and 19.5 cm in height. The opening measures 10 x 6 cm.
- The cylinder was made of wood with a 6 cm diameter and 15 cm in height. The cylinder was made of wood.