

*THE EFFECTS OF ESTABLISHING OPERATIONS ON  
PREFERENCES FOR TANGIBLE ITEMS*

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Researchers have demonstrated that both deprivation and satiation can affect the outcome of preference assessments for food. In the current study, paired-stimulus preference assessments for tangible items were conducted under three conditions: control, deprivation, and satiation. Three persons with developmental disabilities and 3 typically developing preschool children served as participants. The results demonstrated that deprivation and satiation influenced the outcome of preference assessments of leisure items or toys.

DESCRIPTORS: preference assessment, deprivation, satiation, establishing operations

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Recently, researchers have examined the degree to which procedural manipulations influence the outcome of preference assessments. Gottschalk, Libby, and Graff (2000) examined the effects of deprivation and satiation on the results of preference assessments for food. Their results demonstrated that both deprivation and satiation influenced the outcome of preference assessments, suggesting that access to the food items included in a preference assessment should be held constant. The purpose of this study was

to replicate and extend the study by Gottschalk et al. by evaluating the effects of deprivation and satiation, potential establishing operations, on the results of preference assessments for leisure items or toys.

## METHOD

### *Participants and Setting*

Six individuals participated in the current study. Three participants had either moderate or severe mental retardation and had been admitted to a neurobehavioral unit for the treatment of their problem behaviors. Keith, David, and Debbi were 17, 18, and 12 years old, respectively. Three typically developing children who attended a university-based preschool also participated. Ann, Helen, and Tim were 3, 4, and 4 years old, respectively.

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### *Response Measurement and Reliability*

A choice was defined as reaching towards and picking up one item (Fisher *et al.*, 1992). During each session, data were collected on the number of choice responses for each item. The percentage of trials in which each item was chosen was calculated by dividing the number of times the item was chosen by the number of trials in which that item was presented and multiplying by 100%. For each participant, a second observer simultaneously and independently collected data on the item chosen for at least 20% of the sessions, and interobserver agreement for choice responses was 100%.

### *Experimental Conditions*

Preference assessments were conducted using the paired-choice format described by Fisher *et al.* (1992). A total of 13, 14, or 15 preference assessments were conducted for each participant. Initially, three to four preference assessments were conducted to identify high- and moderate-preference stimuli prior to the manipulations. Based on visual inspection of the combined results of the initial assessments, two high- and two medium-preference items for each participant were selected for inclusion in the control, deprivation, and satiation conditions described below (a more detailed description of the procedures and initial preference assessment data are available from the authors upon request).

Thereafter, control assessments (two for Helen; three for David, Ann, Keith and Debbi; and four for Tim), four deprivation assessments (one per stimulus), and four satiation assessments (one per stimulus) were conducted with each participant in the manner described below. No more than one preference assessment was conducted per day, and the data were collapsed across assessments.

*Control.* During the control condition, the participants received regulated (equal) access to each of the four items by allowing either 10-min (participants with developmental disabilities) or 20-min (typically developing children)

access to each item immediately prior to conducting the preference assessment.

*Deprivation.* During the deprivation condition, the participants received either 10 min or 20 min of regulated (equal) access to three of the four items immediately prior to the start of the preference assessment. The participants were deprived of the fourth item for 24 to 144 hr (range, 24 to 48 hr for persons with disabilities; range, 24 to 144 hr for typically developing children) prior to the preference assessment.

*Satiation.* In the satiation condition, the participants were provided with either a 10-min or 20-min period of free access to one of the four items immediately prior to conducting the preference assessment. The participants were deprived of the other three items for 24 to 144 hr.

## RESULTS AND DISCUSSION

The results are presented in Figure 1. Deprivation resulted in increased selection of that item for at least one item for all of the participants and at least three items for 4 of the participants. For several items, however, the percentage of trials in which the item was selected was not entirely out of the range of the variability observed during the control condition. This suggests that some of the differences in the percentage of times in which an item was selected might be due the natural fluctuation that occurs across repeated preference assessments. For David and Helen, the deprivation manipulation resulted in the selection of an item that was never chosen during the control or satiation conditions.

The satiation manipulation also affected the items chosen. For each participant, at least two items were chosen less frequently following the satiation condition compared to the control condition. In addition, at least one item was never selected by each participant following the satiation manipulation, although all the items were either highly or moderately preferred

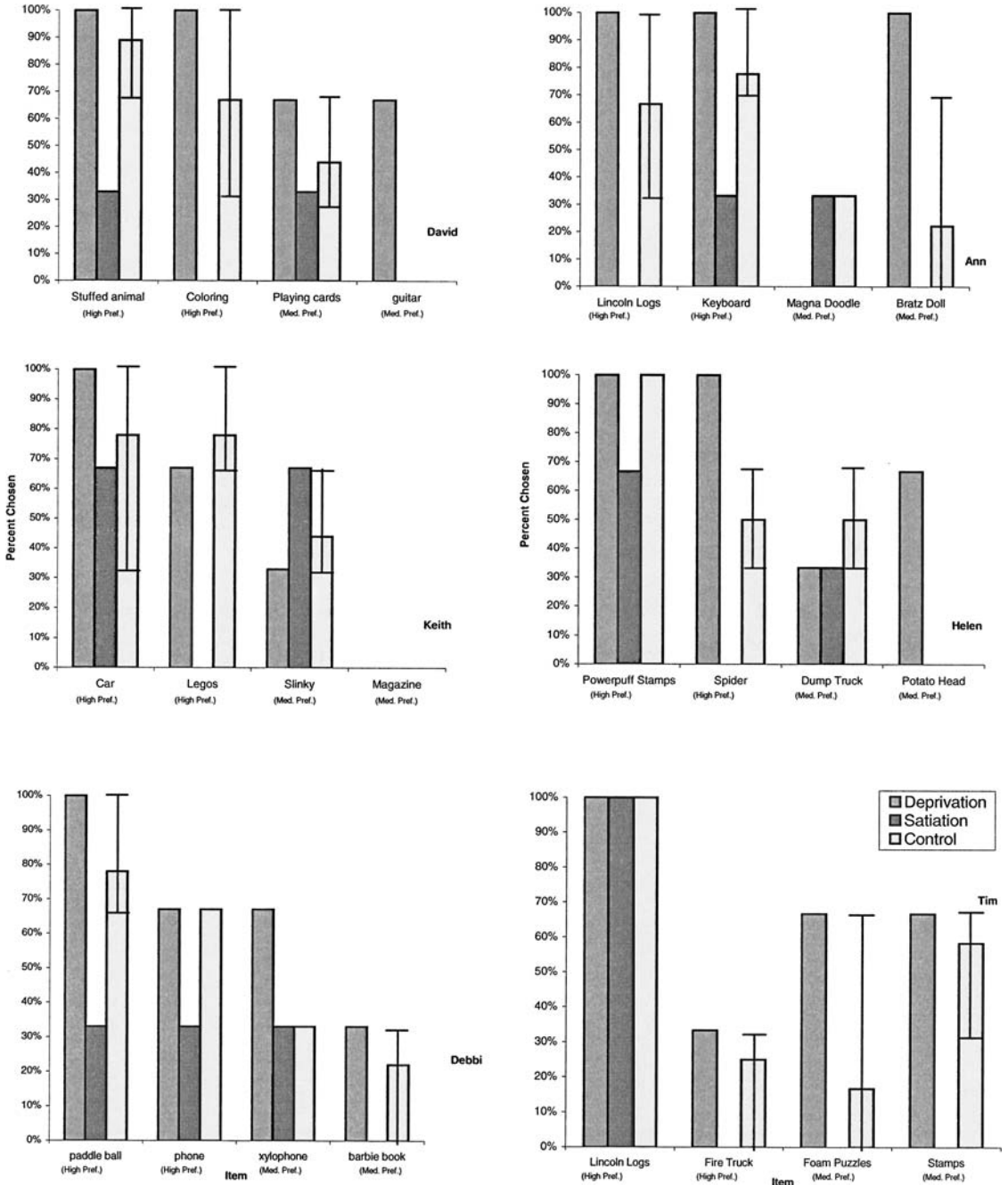


Figure 1. Cumulative percentage chosen across, deprivation, satiation, and control conditions for the typically developing children and persons with developmental disabilities. The range bars indicate the variability in selection percentages during the control conditions.

based on the results of the initial preference assessments.

These results suggest that behavior analysts should further explore the influence of deprivation on the various items included in intervention packages designed to increase engagement. For example, DeLeon, Anders, Rodriguez-Catter, and Neidert (2000) found that providing a rotating set of toys (i.e., crayons and coloring book or dolls) more effectively reduced the self-injury of an 11-year-old girl with a developmental disability than did a single set of toys (i.e., crayons and coloring book), suggesting that satiation limited the effectiveness of the single set of toys. The results of DeLeon *et al.* and the current study suggest that researchers should examine the use of both deprivation and satiation on environmental enrichment interventions designed to increase the engagement and to reduce problem behaviors (e.g., competing items in intervention packages). The systematic use of deprivation also might allow researchers to design interventions whose effects will be maintained over an extended period of time, providing a strategy to program maintenance.

Finally, some limitations of the current study should be acknowledged. First, the effect of deprivation and satiation on a relatively small number of high- and medium-preference tangible items was examined. Second, a reinforcer assessment was not included in the current

study, so the ability of the items used to maintain or increase behavior was unknown. Third, the deprivation periods used in this study ranged from 24 to 144 hr. However, Klatt, Sherman, and Sheldon (2000) found few differences between deprivation periods longer than 24 hr on the engagement of persons with disabilities in functional activities, suggesting that the range of deprivation periods used in the current study was not problematic.

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