

The Effects of Preference on the Transfer from Labels to Requests in Children Diagnosed with Autism

Kelly N. Paulson, Elizabeth T. Kooistra, Kristina K. Vargo, Tasha M. Rieck, and Kevin P. Klatt
(Psychology Department, University of Wisconsin-Eau Claire)



Introduction

Autism is a developmental disability typically classified by its impairments in verbal behavior, social interaction skills, play skills, and stereotypic or repetitive behaviors (DSM-IV; American Psychiatric Association, 1994). Due to these characteristics, interventions for young children should focus on teaching communication skills.

Two important communication skills include being able to label items and activities (e.g., chair, toy, juice) and requesting items and activities that a child wants (e.g., toy, juice, bike). When a child requests an item, the response is controlled by "motivation" or "desire" for the item. When a child labels an item, however, the response is controlled by reinforcers not related to the item, such as praise or access to toys, etc. Skinner (1957) described the request (i.e., mand) and the label (i.e., tact) as functionally independent of one another, with the acquisition of one (a label response) not necessarily producing the establishment of the other (a request).

Previous research supports Skinner's claim that teaching the name of an item (label) does not mean that someone will request the item. In previous studies, however, investigators did not ensure that there was "motivation" for the item. A request for an item would not be expected if the person did not "want" the item, and therefore this could potentially explain why the person did not ask for it in previous studies. Wallace, Iwata, and Hanley (2006) sought to account for this limitation by experimentally manipulating the preference of the reinforcer to test the transfer from labels to requests.

The purpose of this study was to replicate and extend Wallace et al. (2006) to determine the importance of "motivation" on the transfer from a label to a request. The current study included children diagnosed with autism who had a verbal behavior repertoire (Wallace et al., (2006) included adults diagnosed with severe mental retardation who used sign language). A preference assessment was conducted to identify both high-preferred (HP) and low-preferred (LP) toys. Therefore, in the present study children diagnosed with autism were taught to label both HP and LP toys and then tested whether the label response transferred to a request response.

Method

Participants

- Molly was a 4-year-old girl diagnosed with autism who received in-home applied behavior analysis (ABA) therapy 27 hours a week.
- Nicole was a 4-year-old girl diagnosed with autism who received 5 hours of ABA therapy a week at an on-campus autism program as well as 4.5 hours of in-home ABA therapy.
- Will was a 2-year-old boy diagnosed with autism who received ABA therapy at an on-campus autism program 4 hours a week.
- Nick was a 5-year-old boy diagnosed autism who received in-home ABA therapy 27 hours a week.
- All four children had adequate requesting and labeling repertoires prior to the study.

Setting

- Nicole's and Will's sessions were conducted in a therapy room at an on-campus autism program.
- Nick's and Molly's sessions were conducted in a room in his and her home.

Procedure

•**Preference Assessment:** A multiple stimulus without replacement preference assessment was conducted to determine relative preference for each toy (DeLeon & Iwata, 1996). A minimum of four sessions were conducted to establish a HP and LP toy for use in the remainder of the study (Figure 1).

•**Baseline and Request Test Condition:** Each toy was placed simultaneously in front of the participant. Each session lasted a maximum of 10 minutes, and if the participant emitted the target request, they received 30-seconds of access to the toy.

•**Baseline and Label Training Condition:** The instruction "What is it?" was given, and if a correct response was emitted, the participant received social praise and food. If the participant made an error, the next trial was presented by helping the participant with the answer to prevent an error. For example, "What is it? Say car." Mastery criterion occurred when participants correctly labeled both toys on 100% of the trials over two consecutive sessions.

•**Missing Toy Request Test:** Conducted for Nick only and was identical to the request test, only the toys were hidden under a blanket to ensure that the presence of the toy was not acting as a cue to label the toy. This test was conducted to evaluate whether the requesting response would occur under a motivation rather than a labeling condition.

Treatment Integrity

For Molly, treatment integrity was calculated on 38% of the sessions and was 100%. For Will, treatment integrity was calculated on 94% of the sessions and was 99%. For Nicole, treatment integrity was calculated on 96% of the sessions and was 99%. For Nick, treatment integrity was calculated on 41% of the sessions and was 100% for Nick.

Interobserver Agreement

To complete interobserver agreement (IOA), a second observer collected data on 38% of the sessions for Molly, 90% of sessions for Will, 96% of the sessions for Nicole, and 41% of the sessions for Nick. For Molly, the mean agreement score was 100%. For Will, the percentage of IOA ranged from 88% to 100%, and the mean agreement score was 99%. For Nicole, the percentage of IOA ranged from 95% to 100%, and the mean agreement score was 99%. For Nick, the percentage of IOA ranged from 95% to 100% and the mean agreement score was 99%.

Author Note

The authors of this research would like to thank the University of Wisconsin-Eau Claire's Office of Research and Sponsored Programs for financial support of the study. Researchers would also like to thank Renee Norman, Cassie Drees, and Cierra Micke for their support of the study.

Results

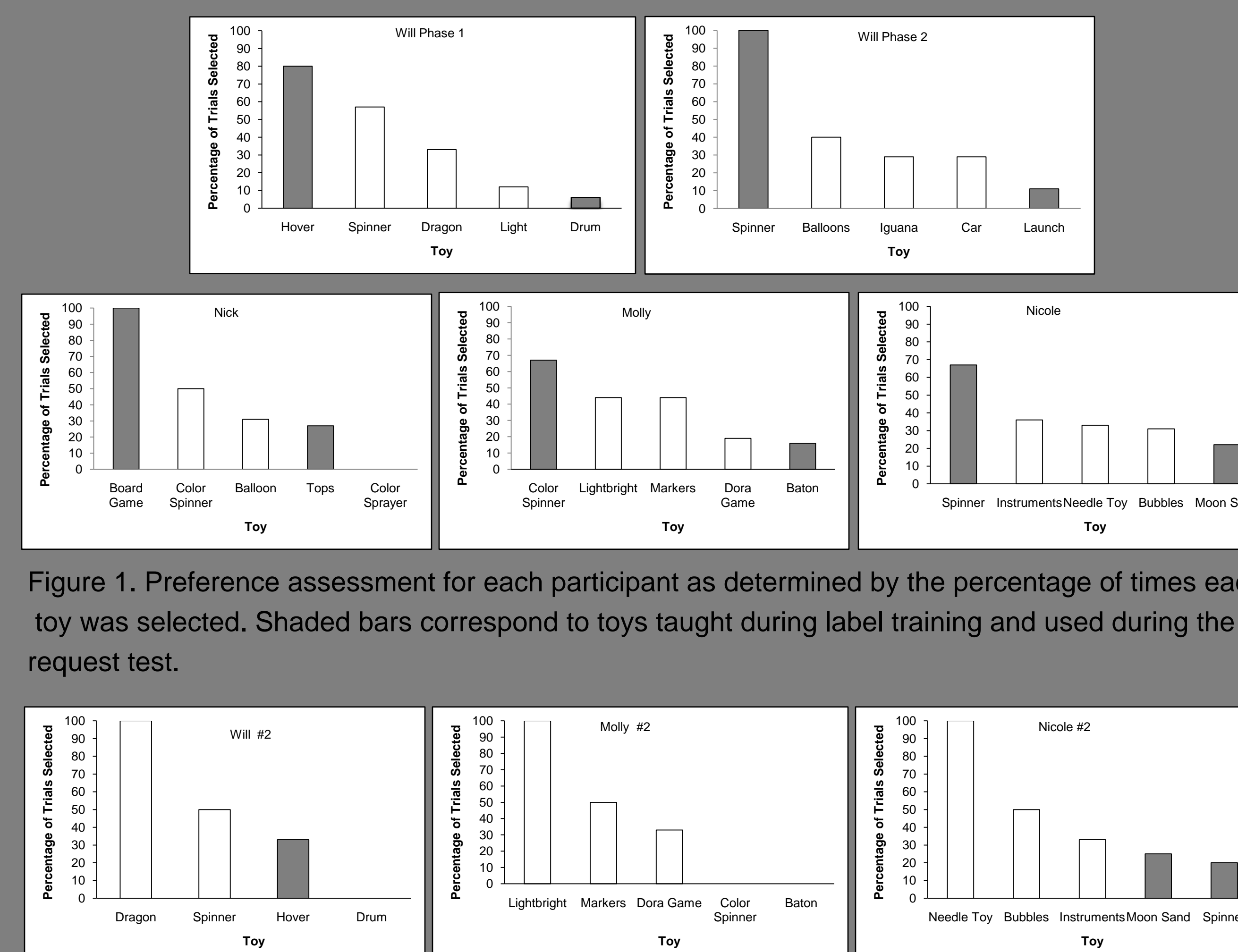


Figure 1. Preference assessment for each participant as determined by the percentage of times each toy was selected. Shaded bars correspond to toys taught during label training and used during the request test.

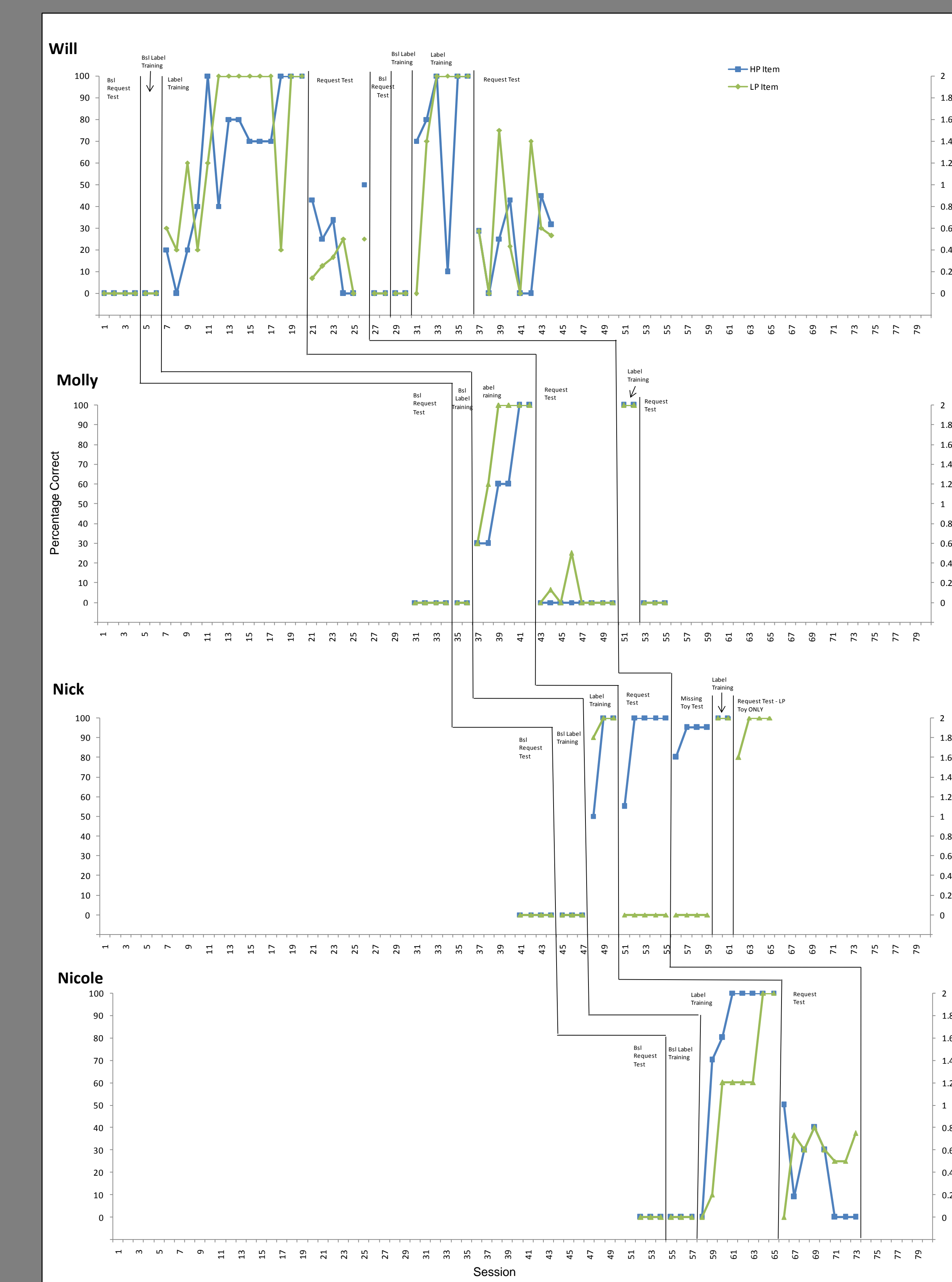


Figure 2. A reassessment of Will's and Molly's initial preference assessments. Shaded bars refer to the toys that were taught during initial label training and used during the initial request test.

Results (cont)

•**Will: (Phase 1)** Panel 1 in Figure 3 shows that during the request test, Will asked for the HP toy an average of .4 times per minute and asked for the LP toy an average of .2 times per minute. The range for the HP toy was 0 to .9 times per minute, and the range for the LP toy was 0 to .5 times per minute. Following session 24, preference for each of the toys was reassessed. As illustrated in Figure 2, the second preference assessment shows that Will chose the HP toy over the LP toy; however, the HP and LP toys were the bottom two toys chosen. Following a 26-day deprivation from both toys, a request test probe was conducted in which Will asked for the HP toy .6 times per minute and the LP toy .5 times per minute.

•**Will: (Phase 2)** Panel 1 in Figure 3 shows that Will asked for the HP toy an average of .43 times per minute, and the LP toy an average of .6 times per minute. The range for the HP toy was 0 to .9 per minute and the range for the LP toy was 0 to 1.5 per minute.

•**Molly:** Panel 2 in Figure 3 shows that during the request test, Molly did not ask for her HP toy. The range for her LP toy was 0 to .5 and the average was .1 per minute. During the label training reversal, Molly correctly responded on 100% of the trials across two days. As illustrated in Figure 2, when preference was reassessed, Molly did not choose either the HP or LP toy.

•**Nick:** Panel 3 in Figure 3 shows that Nick asked for the HP toy an average of 1.8 times per minute and did not ask for the LP toy at all during the initial request test. The range for the HP toy was 1.1 to 2 times per minute. During the missing toy test, Nick asked for the HP toy an average of 1.8 times per minute, and did not ask for the LP toy. The range for the HP toy was from 1.6 to 1.9 times per minute. In a reversal to label training, Nick correctly responded on 100% of trials for both toys across two days. During the LP request test, Nick asked for the toy an average of 1.9 times per minute, and the range was from 1.6 to 2 times per minute.

•**Nicole:** Panel 4 in Figure 3 shows that Nicole asked for her HP toy an average of .4 times per minute, and her LP toy an average of .6 times per minute during the request test. The range for her HP toy was 0 to 1 request per minute, and the range for her LP toy was 0 to .8 times per minute. Following the request test, preference was reassessed. As illustrated in Figure 2, Nicole chose the HP and LP toys fifth and fourth from an array of five toys, respectively.

Discussion

The results of the current study suggest that motivation is a critical component in the transfer from a label to a request in children diagnosed with autism. For three participants, Will, Nick, and Nicole, the transfer from a label to a request did occur; however, for Molly, the establishment of a request did not follow the acquisition of a label. These results further support the findings from Wallace et al., (2006) and provide stronger evidence on how to teach a child with autism to request items.

Phase 1 of Will's results suggest that the transfer from a label to a request did occur; however, these rates quickly decreased to zero. One possible explanation for the decline in the rate per minute was that Will did not have motivation to ask for either of the toys. To test this explanation, an additional request test was conducted following a 26-day deprivation. On the deprivation probe, both toys had a rate per minute higher than or comparable to the rates initially following label training. The deprivation probe helps to support the conclusion that Will had no motivation to ask for the toys, which could explain why both toys declined to rates of zero. Phase 2 of Will's results suggest that the transfer from a label to a request did occur, however, there needs to be extremely strong motivation present for the requests to continue at a high and stable rate.

During the request test, Nick asked for the HP toy, but not for the LP toy. An explanation could be that there was no reason to ask for the LP toy when the HP toy was concurrently available.

Therefore, an additional request test was conducted with only the LP toy available, which shows that with the absence of the HP toy, the transfer from a label to a request occurred. The request test with only the LP toy available further suggests that motivation is a necessary component in the transfer from a label to a request. When the HP toy was concurrently available, there was no motivation to ask for the LP toy because there was a stronger reinforcer present. The missing toy test suggests that the presence of the HP toy did not act as a cue to evoke the target response, and that the response was controlled by motivational characteristics.

The variable rates during Nicole's request test suggest that her high preferred toy lost its reinforcing value. When preference was reassessed, the toys used during label training and the request test were now both LP, suggesting that motivation was not as high as immediately following label training.

Molly did not emit any requests following label training. To ensure there was no transfer from the label to a request, a reversal to label training was conducted (ABAB design; Cooper, Heron, & Heward, 1987). After Molly demonstrated that she maintained her ability to label the toys, the second request test was run; results were similar to the initial request test, in that the requests remained at zero. The reversal helped to conclude that she could label the toys, but the label did not transfer to a request. In Molly's second preference assessment, she did not choose either of the toys used in label training and the request test, which suggests she did not have motivation to ask for either toy.

One limitation to the current study is that during the request test, the participant was given 30-second access to the toy when he or she asked for it, which could have facilitated request training. Based on this limitation, future research should evaluate the effects of using a generalized reinforcer (e.g., social praise, "nice asking") on the transfer from a label to a request. Future research could also experimentally manipulate the effects of motivation (i.e., deprivation and satiation).

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (1987). Multiple Baseline and Changing Criterion Designs. In *Applied Behavior Analysis* (pp. 195-226). New Jersey: Prentice-Hall, Inc.
- DeLeon, I. G., & Iwata, B. A. (1996). Evaluation of a multiple-stimulus presentation format for assessing reinforcer preferences. *Journal of Applied Behavior Analysis, 29*, 519-533.
- Fisher, W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens, J. C., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis, 25*, 491-498.
- Skinner, B. F. (1957). *Verbal Behavior*. New York: Appleton Century-Crofts.
- Wallace, M. D., Iwata, B. A., & Hanley, G. P. (2006). Establishment of mands following tact training as a function of reinforcer strength. *Journal of Applied Behavior Analysis, 39*, 17-24.