



Evaluation of Generalization When Training Stimulus Preference Assessments

Maria I. Torres Dominguez¹, Patrick W. Romani^{1,2}, Andrea L. Boorse¹, and Sophia B. Silver¹

¹ Pediatric Mental Health Institute, Children's Hospital Colorado; ² School of Medicine, University of Colorado (Anschutz Medical Campus)



PROJECT OVERVIEW

- The use of positive reinforcement in the context of behavioral treatment is an important and common practice (Karsten & Carr, 2009).
- To identify positive reinforcers, five stimulus preference assessments are often used (MSWO, DeLeon & Iwata, 1996; Paired Stimulus, Fisher et al., 1992; Single Stimulus, Pace et al., 1985; Competing Stimulus, Piazza et al., 1998; Free Operant, Roane et al., 1998).
- Training all five preference assessment procedures may be inefficient for some settings.

Research Questions:

- How many preference assessments need to be trained before participant shows improvement on untrained preference assessments?
- Does teaching certain preference assessments interfere with acquisition of skills for the other preference assessments?

METHOD

Participant and Setting

- Participant was a mental health counselor employed by a university-based inpatient unit for children with intellectual and developmental disabilities.
- Participant had no prior experience with applied behavior analysis or preference assessment procedures prior to participation.
- Study took place in a therapy room that was 6.0 m x 6.0 m. Therapy room contained a table and two chairs.

Experimental Design

- The current study took place within a multiple probe across preference assessments design (Kennedy, 2005).

Dependent Variables

- Protocol integrity* was defined as steps on the preference assessment protocols correctly implemented. These data were represented as a percentage (frequency of correct implementation divided by frequency of correct plus incorrect implementation multiplied by 100).

Procedures: Main Study

Baseline

- Participant was given preference assessment protocol and 5 min to review protocol.
- Protocol restricted from participant. Materials given to participant to implement preference assessment.
- Experimenter responded to the participant's implementation of the assessment based on confederate protocol.
- After finishing assessment, participant graphed and interpreted data.

Behavioral Skills Training (Parsons, Rollyson, & Reid, 2012)

- Experimenter described and provided written description of each step of the preference assessment protocol. Answered any questions participant had.
- Experimenter modeled each step of the targeted preference assessment and had participant practice until they implemented steps without assistance.

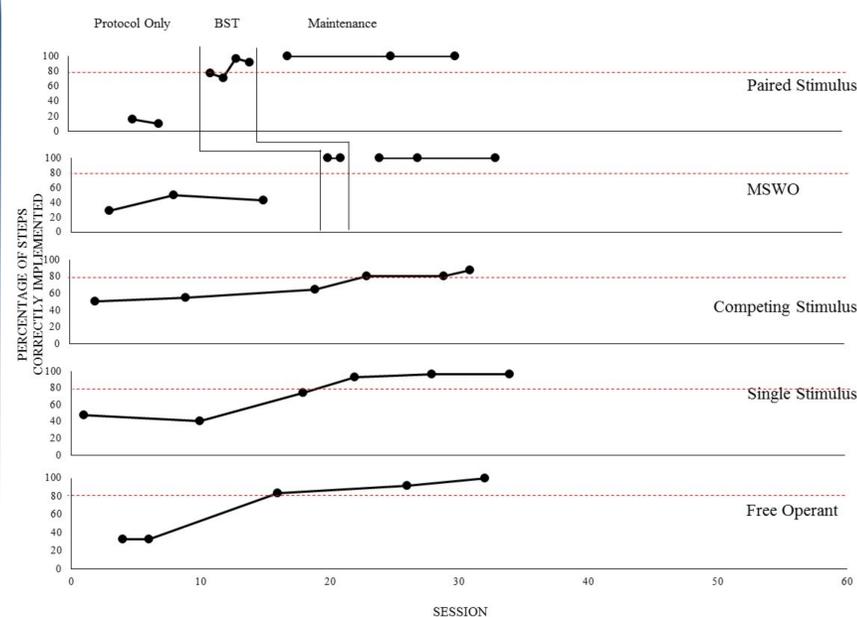
Maintenance

- Same procedures as Baseline.

Procedures: Retrospective Study

- Created Excel spreadsheet listing each step for each preference assessment in separate columns. Entered data on whether each step was implemented correctly or incorrectly for each session.
- We divided data into conditions marked by the specific combination of assessments that had been taught and mastered by the participant.
- Calculated percentage of times each step was implemented correctly to evaluate generalization of responding and potentially interfering conditions.

RESULTS: FIGURE 1



RESULTS: TABLE 1

	Baseline	Following Training on Paired Stimulus	Following Training on Paired Stimulus and MSWO
Competing Stimulus			
Interview (1x)	50%	100%	66%
Stimulus Available for 30 s (5x)	0%	100%	33%
No Attention Delivered During Playtime (1x)	100%	100%	33%
MSWO			
Selected Toy Restricted from Array (3x)	50%	0%	100%
Toys Appropriately Moved (3x)	50%	0%	100%
Trial Ended (1x)	50%	0%	100%
Assessment Ended (1x)	100%	0%	100%
Graphing (1x)	100%	0%	100%
Single Stimulus			
Interview (1x)	50%	100%	66%
Representation of Stimulus (1x)	0%	100%	66%

RESULTS (CONT'D)

- During baseline, procedural integrity with each preference assessment was exhibited at moderate-to-low levels (**Figure 1**).
- Following BST for the paired stimulus assessment, procedural integrity for that assessment increased to an average of 84.6%. Integrity maintained at 100% following this training.
- Following BST for the MSWO assessment, procedural integrity increased to 100%. Integrity maintained at 100% following training.
- Following training on both the paired stimulus and MSWO preference assessments, procedural integrity for the competing stimulus assessment ($M = 82.8\%$), single stimulus ($M = 95.1\%$), and free operant ($M = 91.7\%$) increased to above the 80% mastery criterion for three consecutive sessions.
- Via the retrospective analysis, while overall procedural integrity increased over time for all five preference assessments, within-session analysis showed certain skills actually became more variable (**Table 1**).

DISCUSSION

- For Participant, training on two preference assessments (paired stimulus and MSWO assessments) were needed before generalization to three untrained assessments (competing stimulus, single stimulus, and free operant assessments) occurred. BST effectively increased procedural integrity for the paired stimulus and MSWO preference assessments.
- Within-session analysis of Participant data showed that while the overall integrity for all five assessments increased, certain skills became more variable.
- Following training on the paired stimulus preference assessment:**
 - Reliable decreases in restricting the selected toy and moving the toys during the MSWO assessment occurred.
- Following training on paired stimulus and MSWO preference assessments:**
 - Reliable decreases in having the toy available for 30 s occurred during the competing stimulus assessment.
 - A second participant demonstrated similar results. Thus, a future, prospective, study might evaluate a training package consisting of forced-choice preference assessments with specific emphasis on when to restrict stimuli, move stimuli, and how long to have stimuli available for.
 - A limitation of the current investigation was that we conducted this analysis for only two participants out of the five. Future research should recruit additional participants to evaluate the current project's research questions.

REFERENCES

- DeLeon, I. G., and Iwata, B. A. (1996). Evaluation of a multiple-stimulus presentation format for assessing reinforcer preferences. *Journal of Applied Behavior Analysis*, 29, 519-533. doi: 10.1901/jaba.1996.29-519
- Fisher, W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens J. C., and Slevin, J. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis*, 24, 491-498. doi: 10.1901/jaba.1992.25-491
- Pace, G. M., Ivancic, M. T., Edwards, G. L., Iwata, B. A., and Page, T. J. (1985). Assessment of stimulus preference and reinforcer value with profoundly retarded individuals. *Journal of Applied Behavior Analysis*, 18, 249 - 255. doi: 10.1901/jaba.1985.18-249
- Piazza, C. C., Fisher, W. W., Hanley, G. P., LeBlanc, L. A., Worsdell, A. S., Lindauer, S. E., and Keeney, K. M. (1998). Treatment of pica through multiple analyses of its reinforcing functions. *Journal of Applied Behavior Analysis*, 31, 165-189. doi: 10.1901/jaba.1998.31-162
- Roane, H. S., Vollmer, T. R., Ringdahl, J. E., and Marcus, B. A. (1998). Evaluation of a brief stimulus preference assessment. *Journal of Applied Behavior Analysis*, 31, 605-620. doi: 10.1901/jaba.1998.31-605