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A COMPARISON OF VERBAL AND TANGIBLE STIMULUS PREFERENCE ASSESSMENTS

DANIEL COHEN-ALMEIDA

SIMMONS COLLEGE, THE NEW ENGLAND CENTER FOR CHILDREN, AND NORTHEASTERN UNIVERSITY

AND

RICHARD B. GRAFF AND WILLIAM H. AHEARN

THE NEW ENGLAND CENTER FOR CHILDREN AND NORTHEASTERN UNIVERSITY

Tangible preference assessments were compared with verbal preference assessments for 6 individuals with mental retardation, behavior disorders, or both. In the tangible assessment, items were placed in front of the participant. In the verbal assessment, participants were asked, "Do you want *X* or *Y*?" and the items were not present. The two assessments yielded similar high-preference items for 4 of the 6 participants. The verbal assessment was typically completed in less time than the tangible assessment.

DESCRIPTORS: preference assessment, correspondence between verbal and nonverbal behavior

Although most research on preference assessments has involved individuals with severe to profound disabilities, several recent studies have examined methods for identifying potential reinforcers for individuals with attention deficit hyperactivity disorder (ADHD) and typical intelligence. One investigation found that a verbal stimulus-choice procedure ("Would you rather play with *X* or *Y*?") and direct observation better identified reinforcers than a child nomination condition (e.g., "Of all the toys, which one is your favorite?"; Northup, Jones, Broussard, & George, 1995). Another study compared three types of preference assessments: a survey, in which children ranked items from different categories as being liked *not at all, a little,* or *a lot*; a verbal stimulus-choice procedure (e.g., "Which would you do a lot of hard work to get, Category *X* or Category *Y*?"); and a pictorial stimulus-choice procedure, in which the child was given coupons representing two categories and was told to "Just pick one" (Northup, George, Jones, Broussard, & Vollmer, 1996). The authors found that verbal or pictorial stimulus-choice assessments were more likely than the survey to identify items that functioned as reinforcers. In addition, the verbal assessment required the least amount of time.

The studies just summarized suggest that for children who perform in the normal range on IQ tests and have age-appropriate language, there is a high degree of correspondence between verbal and nonverbal expressions of stimulus preference. For individuals whose developmental level and language skills are well below their chronological age, however, it is not clear that verbal preference assessments produce valid and reliable results (e.g., Foxx, Faw, Taylor, Davis, & Fulia, 1993). The purpose of the present study was

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Reprints may be obtained from Daniel Cohen-Almeida, The New England Center for Children, 33 Turnpike Road, Southborough, Massachusetts 01772 (E-mail: dcalmeida@NECC.org).

Table 1
Participant Characteristics

Participant	Diagnosis	Age	IQ	PPVT-R age-equivalent (years–months)
Angelo	Pervasive developmental disorder (PDD), attention deficit hyperactivity disorder (ADHD), Asperger's syndrome	17	97	17–7
Mort	PDD, emotional and learning disabilities	19	79	12–4
Les	ADHD, Tourette's syndrome	15	69	9–10
Larry	Tourette's syndrome, obsessive-compulsive disorder (OCD), depressive disorder with psychotic features, atypical developmental disorder, borderline cognitive functioning	20	66	Not available
Hans	Behavior disorder, mental retardation	18	59	9–7
Dom	Posttraumatic stress disorder (PTSD), ADHD, moderate mental retardation	18	53	7–3

to compare hierarchies of preferred stimuli generated by tangible preference assessments with hierarchies generated by verbal assessments in individuals with a range of IQ scores who used vocal speech as their primary mode of communication.

METHOD

Participants and Setting

Participants were selected who used vocal speech as their primary mode of communication and achieved at least a 3-year age-equivalent score on the Peabody Picture Vocabulary Test—Revised (PPVT-R) or similar measure of ability. However, a PPVT-R score was not available for 1 participant. Participants were also required to demonstrate comprehension of two-step instructions and sentence constructions using the conjunction *or,* which was assessed with subtests from the Clinical Evaluation of Language Fundamentals—Revised (CELF-R) test. In addition, participants were required to demonstrate spoken-word/object match-to-sample skills for the assessed stimuli. The participants, 6 young men attending a residential school, are described in Table 1.

Assessment

Two types of preference assessments were conducted with each participant: tangible (A) and verbal (B). Three of the participants experienced the conditions in ABBABAAB order; the order for the other 3 participants was BAABABBA.

Sessions were conducted in a classroom in the school or in the participant's group home. A total of eight 10-min sessions were conducted with each participant. Assessments were administered sequentially and were separated by a 5-min break in a different room. All assessments were completed within a 2-week period for all participants.

Tangible assessment. The tangible assessment used procedures similar to those described by Fisher et al. (1992). For each participant, eight consumable items identified by the teaching staff were used. All participants were familiar with the stimuli. On each trial two stimuli were placed in front of the participant. The position of the two items was randomized. They were placed approximately 0.3 m in front of the individual and 0.5 m apart, and each stimulus pair was presented for 10 s. Approach responses were defined and recorded for all participants,

and resulted in the opportunity to consume the stimulus. Participants were allowed access to stimuli until they were consumed, except for Dom, who elected to save the items until the end of the session.

Verbal assessment. The verbal assessment used the same eight items as the tangible assessment. Each trial began with the experimenter asking, "Do you want *X* or *Y*?" (*X* corresponded to the item placed on the participant's left in the tangible assessment; *Y* corresponded to the item placed on the participant's right). Stimuli were not visible to the participant; only their oral names were presented. The participant was to state the name of one of the stimuli, which resulted in the opportunity to consume it.

Response Measurement and Interobserver Agreement

The dependent variables were the percentage of trials each stimulus was approached or named and the duration of time required to complete each assessment. A second observer recorded data in 50% of sessions, across both assessment conditions. Interobserver agreement was 100% for approach responses and naming, and the mean was 99.2% (range, 95% to 100%) for duration.

For each assessment, the percentage of opportunities on which each stimulus was approached or named was used to construct hierarchies of preferred items. Kendall rank-order correlation coefficients were computed to determine the degree of correspondence between the hierarchies produced by the two assessment methods for each participant.

RESULTS AND DISCUSSION

Table 2 depicts the hierarchies of preferred stimuli generated by the two assessments and the correlation coefficients for the rank orders. For 4 participants (Angelo, Larry, Les, and Mort), both assessments yielded the same two highest preference items. In addition, both assessments yielded the same two lowest preference items for 5 of 6 participants. For these participants, the two assessments produced a high degree of correspondence for the most and least preferred items. The two assessments had lower agreement for moderately preferred items; however, because moderately preferred stimuli do not necessarily function as reinforcers (e.g., Piazza, Fisher, Hagopian, Bowman, & Toole, 1996), the clinical significance of this finding is unclear. For Dom, there was little correspondence between the two assessments; the Kendall rank-order coefficient was 0.155. It should be noted, however, that Dom was the only participant who did not consume items during the session, although he did consume them immediately after the session.

Angelo, who had the highest correlation coefficient (1.0), also had the highest IQ and PPTV-R age-equivalent scores. Dom, whose correlation coefficient was lowest (0.155), had the lowest IQ and PPTV-R age-equivalent scores. For other participants, the relationship between IQ and PPVT-R scores and correlation coefficients was less clear. That is, absolute IQ level did not necessarily predict how well the two assessments would be correlated. A larger sample would be needed to address this question. A more important question is when can a verbal assessment be used. It is likely that there are certain prerequisite skills necessary to obtain valid assessments of preference using this method. Again, a larger sample would be needed to address this question.

One advantage of the verbal assessment was that it required less time to complete for 4 participants. On average, they completed the verbal assessment in 3.8 min. The mean completion time for the tangible assessment was 4.6 min. For Hans, the mean completion time was 5.7 min for the verbal assessment and 4.8 min for the tangible assess-

Table 2
The Rank, Mean Percentage of Approach Responses, and Kendall Rank-Order Correlation Coefficient for the Tangible and Verbal Assessments

Name/IQ	Stimuli	Tangible rank (mean approach responses)	Verbal rank (mean approach responses)	Tangible–verbal correlation coefficient
Angelo	Combos®	1 (100%)	1 (100%)	
IQ = 97	Pringles®	2 (79%)	2 (79%)	
	Soda	3.5 (64%)	3.5 (64%)	
	BBQ chips	3.5 (64%)	3.5 (64%)	
	Cereal	5 (50%)	5 (43%)	
	Twix®	6 (29%)	6 (36%)	
	Cookies	7 (14%)	7 (14%)	
	Reeses Pieces®	8 (0%)	8 (0%)	
				1.0
Larry	Soda	1 (100%)	1 (100%)	
IQ = 66	Chips	2 (71%)	2 (86%)	
	Snickers®	3.5 (64%)	3 (64%)	
	Oreos®	3.5 (64%)	4.5 (50%)	
	M & M®	5 (50%)	4.5 (50%)	
	Swedish fish	6 (36%)	6 (36%)	
	Licorice	7.5 (7%)	7 (14%)	
	Pretzel	7.5 (7%)	8 (0%)	
				.944
Les	Sour gummi	1 (100%)	1 (100%)	
IQ = 69	Swedish fish	2 (79%)	2 (79%)	
	Cashews	3.5 (57%)	3 (71%)	
	Soda	3.5 (57%)	6 (29%)	
	Reeses Pieces®	5 (50%)	5 (43%)	
	M & M®	6 (43%)	4 (64%)	
	Licorice	7 (14%)	7.5 (7%)	
	Pretzels	8 (0%)	7.5 (7%)	
				.741

Table 2
(*Extended*)

Name/IQ	Stimuli	Tangible rank (mean approach responses)	Verbal rank (mean approach responses)	Tangible–verbal correlation coefficient
Mort	Gummi bears	1 (93%)	1.5 (71%)	
IQ = 79	P.b. cups	2 (79%)	1.5 (71%)	
	M & M®	3.5 (57%)	4 (57%)	
	Soda	3.5 (57%)	6 (36%)	
	Oreo®	5.5 (43%)	3 (64%)	
	Cookies	5.5 (43%)	5 (50%)	
	Pretzels	7 (14%)	7 (21%)	
	Cereal	8 (7%)	8 (14%)	
				.717
Hans	Combos®	1 (86%)	1.5 (71%)	
IQ = 59	Snickers®	2 (79%)	3.5 (64%)	
	P.b. cups	3 (64%)	5 (50%)	
	Soda	4 (57%)	1.5 (71%)	
	Oranges	5 (50%)	6 (43%)	
	Gummi bears	6 (43%)	3.5 (64%)	
	Banana chips	7 (21%)	7 (36%)	
	Apricots	8 (0%)	8 (0%)	
				.667
Dom	Sour gummi	1 (100%)	5.5 (43%)	
IQ = 53	Fruit Roll Up®	2 (86%)	2 (86%)	
	Doritos®	3 (50%)	7 (14%)	
	Gummi bears	4.5 (43%)	5.5 (43%)	
	Pretzels	4.5 (43%)	1 (93%)	
	Chips	6.5 (36%)	3.5 (57%)	
	Soda	6.5 (36%)	3.5 (57%)	
	P.b. cups	8 (7%)	8 (7%)	
				.155

ment. These results are consistent with previous findings (Northup et al., 1996).

Because high-preference items have been demonstrated to function as positive reinforcers (e.g., Piazza et al., 1996), our data suggest that verbal assessments may be an efficient method to identify reinforcers for some individuals. One limitation of this study, however, is that no test of reinforcer effectiveness was conducted. The absence of a reinforcer assessment precludes definitive conclusions of the utility of the verbal assessment to identify reinforcers. Future research should examine whether stimuli identified in the preference assessments actually function as reinforcers, particularly when the two assessments yield different outcomes. It should also be noted that, of the eight consumable items, one was a drink. The momentary probability of selecting a liquid may have been altered by previous selections of food. Future research should examine whether the selection of specific classes of stimuli (e.g., foods, liquids, sensory stimuli) affects the subsequent selection of other classes.

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