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THE EFFECTS OF PROVIDING ACCESS TO STIMULI FOLLOWING CHOICE MAKING DURING VOCAL PREFERENCE ASSESSMENTS

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Two variations of a vocal paired-stimulus preference assessment were evaluated to determine whether the verbal reports of preference, given by individuals with developmental disabilities when no access to the activity was given, matched their verbal reports when access to the activity was given contingent on their choice. The results indicated different outcomes between the two methods for 6 of the 7 participants. Subsequent reinforcer assessments, conducted for 2 participants, showed that activities identified in the preference assessments that provided access contingent on selection resulted in more responding than did activities identified in the preference assessment that did not include access to items following their selection.

DESCRIPTORS: choice, developmental disabilities, preference assessments, reinforcer assessments

Identifying preferred items and activities that may serve as reinforcers for individuals with developmental disabilities is necessary in developing effective programs to reduce problem behavior (e.g., self-injury) and increase adaptive skills (e.g., activities of daily living). If a person communicates vocally, one method often used for identifying preferences includes asking the person to identify his or her most highly preferred items or activities. However, simply asking individuals with developmental disabilities what they would like to do may not be a valid measure of preference or reinforcer potency under some circumstances (e.g., Northup, George, Jones, Broussard, & Vollmer, 1996) For example, Cohen-Almeida, Graff, and Ahearn (2000) compared the effects of verbal and tangible choice methods on the food preferences of vocal individuals with developmental disabilities and showed that both methods were equally effective in determining high-preference items for 4 of 6 participants and low-preference items for 5 of the participants. For 1 participant, however, there was little correspondence between the results of the two assessments.

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This lack of correspondence for the 1 participant in the Cohen-Almeida et al. (2000) study may have been influenced by the fact that the participant did not consume the chosen foods until a session had been completed (i.e., access to food was delayed). Indeed, several recent investigations have examined the impact of providing contingent access to stimuli selected in preference assessments. Higbee, Carr, and Harrison (1999) evaluated the effects of tangible and pictorial preference assessments. The two assessments were conducted in a similar manner except that access to the stimuli was provided after each selection in the tangible assessment or no access to the stimuli was provided following selections in the pictorial assessment. The results of both assessments showed different preference rankings, and subsequent reinforcer assessments indicated that the items identified as highly preferred in the tangible assessment functioned as more effective reinforcers than the items identified as high preference in the pictorial assessment. Similarly, Hanley, Iwata, and Lindberg (1999) evaluated the effects of providing contingent access or no access to activities during pictorial preference assessments. Results demonstrated that consistent preferences could not be identified unless access to the activities was provided contingent on the selection of an activity.

Despite the findings of Higbee et al. (1999) and Hanley et al. (1999), it is unknown whether the outcomes of vocal preference assessments would be differentially affected by providing contingent access to the stimuli. Thus, the purpose of the current study was to evaluate whether providing access or not providing access to stimuli following choices would produce differential outcomes during vocal stimulus preference assessments.

METHOD

Participants and Setting

Seven boys, ranging in age from 11 to 18 years, participated in the initial preference assessments, and 2 of these participants also completed a subsequent reinforcer assessment (based on their availability). The participants had a variety of diagnoses (e.g., mild mental retardation), but all used vocal speech as their primary mode of communication. All sessions were conducted in the living room or dining room of the participants' living environment.

Data Collection and Interobserver Agreement

During each preference assessment, observers collected data on the participant's choices (defined as vocal selection of an activity). The data were summarized as the mean percentage of opportunities in which each activity was selected across sessions. This was calculated by dividing the cumulative number of times an activity was selected across all preference assessments by the cumulative number of times it was available and then multiplying by 100%. For the reinforcer assessments, frequency data were collected on the number of correct math problems completed and are reported as responses per minute. Interobserver agreement, collected during 89% of all preference assessment sessions, was calculated by dividing the number of agreements on activity selection by the number of agreements plus disagreements on selections and multiplying by 100%. Mean total agreement was 99% (range, 91% to 100%) across all participants. Interobserver agreement was collected during 60% of the reinforcer assessment sessions using an exact agreement coefficient. Mean agreements for Kyle and Justin were 99% and 100%, respectively.

Experimental Design and Procedure

Preference assessments. A paired-choice vocal preference assessment, based on the procedures described by Fisher et al. (1992) and Northup et al. (1996), was used. Nine or 10 activities were presented using a concurrent-operants arrangement. All participants had a history of engaging with all activities presented. During the no-access assessment, the therapist promp-

ted the participant to select an activity by saying, "[boy's name], would you rather do *x* or *y*?" Following each selection, the next stimulus pair was presented (i.e., the participant did not receive access to the selected item). The assessment continued until all possible pairs of activities were presented. The access assessment was conducted using the same procedures as the no-access assessment; however, approximately 2 min of access to the activity was provided immediately following each selection. Thereafter, the selected item was withdrawn and the next stimulus pair was presented. Three to five assessments were conducted in a counterbalanced or sequential (no access followed by access) order across participants.

Reinforcer assessments. The reinforcer assessment was conducted using procedures similar to those described by DeLeon et al. (2001) and Northup et al. (1996). The task selected for both participants was completing single-digit addition problems. A reversal design was used to evaluate the reinforcing efficacy of the selected activities. The activities evaluated in the reinforcer assessment for Kyle were Pokemon® cards and a handheld video game. For Justin, a handheld video game and watching a movie were evaluated.

During baseline, the participant was prompted to sit at a table with a 15-problem math worksheet directly in front of him and was given the instruction, "You can do as many problems as you want, as little as you want, or none at all. We will stop after 5 min." During the reinforcement condition, the reinforcement contingencies were explained, and three identical math worksheets were placed an equal distance apart on a table. Activities selected from the preference assessments, or nothing (control), were placed directly behind one of three worksheets, the participant was instructed to "work for what you want," and 30-s access to the activity was provided contingent on correct completion of two math problems. Completion of math problems on the control worksheet resulted in a 30-s interval with no access to either activity. Following the reinforcement interval, the activities and corresponding worksheets were rotated, and the participant was again prompted by the experimenter in the manner described above. The length of each session was 5 min.

RESULTS AND DISCUSSION

Figure 1 shows the average percentage of opportunities each activity was selected during the no-access and access assessments for all participants. For 6 of 7 participants, there were changes in stimulus rankings between the no-access and access conditions for several activities (Kendall τ_b correlations averaged 0.24 across the preference assessments for these 6 participants). For example, in the no-access condition for Max, math worksheets were the least preferred activity; however, when given the opportunity to complete the worksheets contingent on selection, his preference for the activity increased. Data for 6 of the 7 participants also demonstrated that for some activities, preference did not change when access was provided compared to the no-access condition. In addition, Tyrone showed statistically significant similarities in his preference hierarchies across the two conditions (0.73). The average duration of each assessment was approximately 25 min (no access) and 90 min (access).

Figure 2 depicts the rate of problem completion across baseline and reinforcement assessment sessions for Kyle and Justin. Following baseline (*M*s = 2.1 and 0.3 responses per minute for Kyle and Justin, respectively), higher rates of problem completion occurred for those activities that had been identified as preferred in the access assessment (*M*s = 5.1 and 1.6 for Kyle and Justin, respectively). In contrast, lower levels of problem completion occurred for those items that had been identified in the no-access assessment (*M*s = 1.4 and 0.1 for Kyle and Justin, respectively).

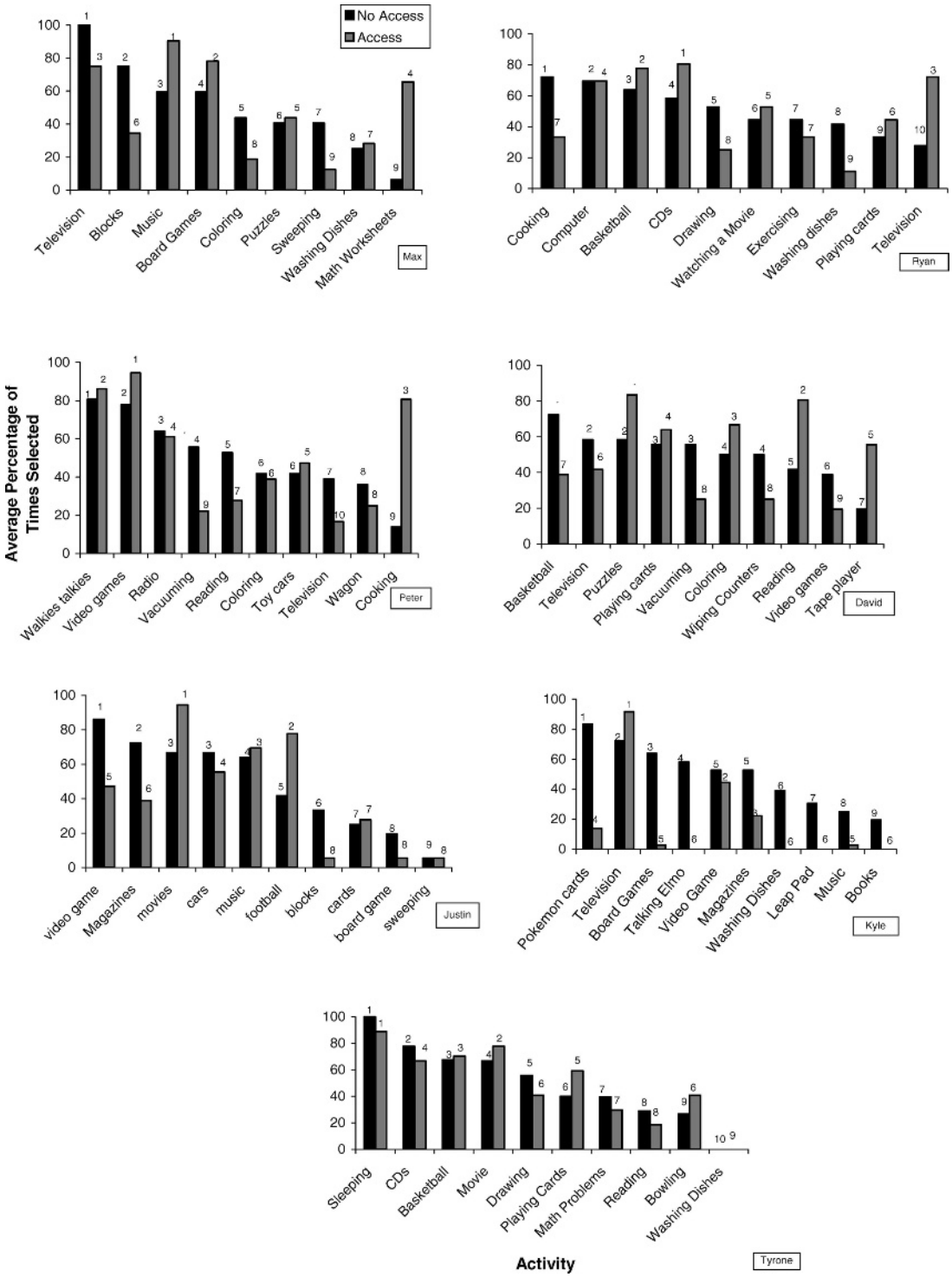

Figure 1. Average percentage of times each activity was selected during no-access and access preference assessments for each participant.

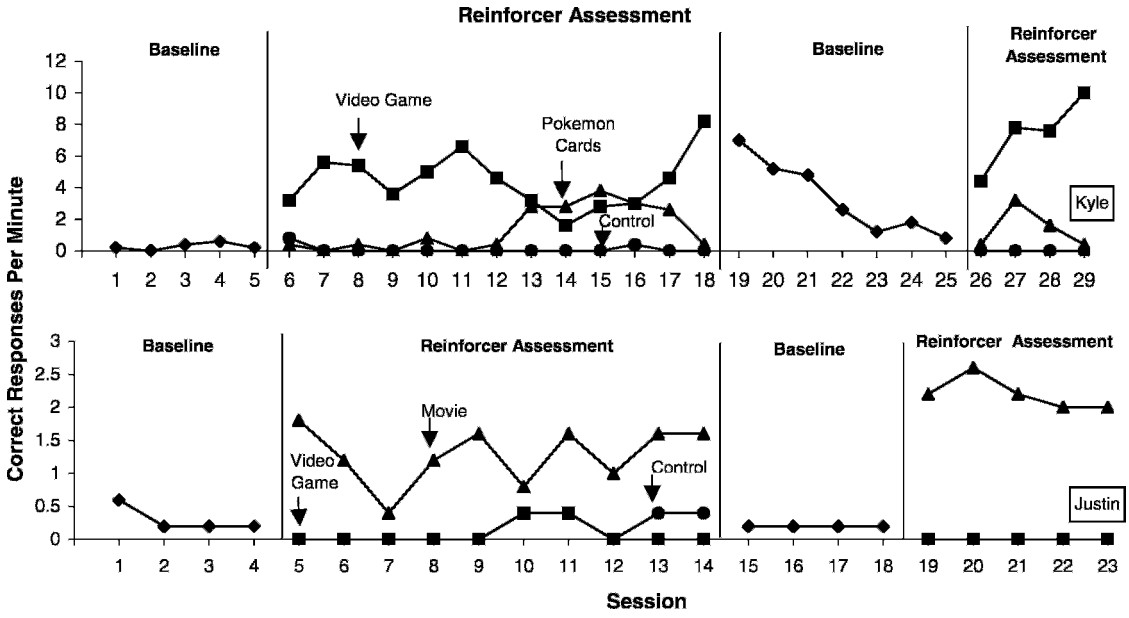

Figure 2. Correct responses per minute, across baseline and reinforcer assessment sessions, for Kyle (top) and Justin (bottom).

Across both participants, low levels of problem completion were observed in the control condition.

In summary, for 6 of 7 participants, there were clear differences in the results of preference assessments when the opportunity to engage in an activity was provided contingent on a selection, compared to when no access to activities was provided during vocal paired-stimulus choice assessments. In addition, for 2 participants, results of reinforcer assessments indicated that problem completion occurred at a greater rate than in baseline, and more responses were allocated to the problems that resulted in the delivery of items identified as preferred in the access condition relative to those identified in the no-access condition. These results suggest that access to activities contingent on selection was a more accurate predictor of reinforcer value in a vocal preference assessment than when no access to the activities was provided.

One explanation for these outcomes may be that access to the item selected was a manipulation of reinforcer magnitude across the two assessments (i.e., 0 min vs. 2 min of access) that affected the outcome of the preference assessments (Hoch, McComas, Johnson, Faranda, & Guenther, 2002). That is, providing 2 min of access contingent on item selection may have altered the potency of some items as reinforcers, thus affecting subsequent choice responding.

The results of this study are significant for those who conduct clinical work in applied settings for several reasons. First, these results suggest that conducting vocal preference assessments in which access to items selected is not provided may not identify the most potent reinforcers for many individuals with developmental disabilities. Second, the results have implications related to the practicality of conducting vocal preference assessments. Vocal-only preference assessments, in which no access to stimuli is provided, may be more practical in some clinical settings than preference assessments in which contingent access to stimuli is provided due to the time requirements of each. Future researchers could evaluate the utility of vocal preference assessments in which contingent access to iconic (e.g., a picture) or textual (e.g., an index card with

a printed word) representations of the stimuli are presented contingent on a participant's vocal choice.

The reinforcer assessment procedures used in the current investigation warrant additional discussion. First, the external validity of the results of the reinforcer assessment is limited by the fact that the assessment was conducted with only 2 of the 7 participants. Second, these results should be interpreted within the limitations of the concurrent-operants arrangement. The concurrent-operants arrangement incorporated only academic tasks and required a relatively low response effort. In addition, Roscoe, Iwata, and Kahng (1999) demonstrated that stimuli identified as less preferred in a concurrent-operants arrangement might function as reinforcers when presented in a single-operant format. Thus, it is possible that the stimuli identified by the vocal preference assessment without access may have functioned as reinforcers had they been evaluated within a single-operant paradigm.

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