JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1990, 23, 183–195 NUMBER 2 (SUMMER 1990)

ASSESSING FOOD PREFERENCES AMONG PERSONS WITH PROFOUND MENTAL RETARDATION: PROVIDING OPPORTUNITIES TO MAKE CHOICES

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Increased attention has been directed recently to assisting persons with severe handicaps to express preferences concerning events in their lives. We evaluated a program for assessing choice-making skills to provide opportunities for persons with profound mental retardation to express food and drink preferences. In Experiment 1, the assessment procedure involving repeated, paired-item presentations resulted in active choice making and the identification of preferences for all 5 participants. Results also indicated that caregiver opinion was not predictive of participant food and drink preferences. A survey of service providers supported the importance of meal-related choices in this population. In Experiment 2, the practicality of the assessment procedure was supported by demonstrating that (a) routine caregivers could apply the procedure with appropriate supervision to provide choice opportunities, and (b) results of the procedure were predictive of participant choices when a less structured and more normal opportunity to express a preference was provided during regular mealtimes. Results are discussed in terms of extending the developing technology of preference and reinforcer identification to other important areas for persons with severe disabilities.

DESCRIPTORS: choice, preferences, behavioral assessment, severely handicapped, mentally retarded

An area of growing concern in service provision for persons with severe handicaps is client choice making. The benefits of allowing these individuals to make choices and express preferences have been discussed frequently (Bannerman, Sheldon, Sherman, & Harchik, 1990; Guess, Benson, & Siegel-Causey, 1985; Houghton, Bronicki, & Guess, 1987; Shevin & Klein, 1984). Researchers have also begun to identify specific procedures for providing choice-making opportunities and for reliably assessing preferences and reinforcers in this population (Mithaug & Hanawalt, 1978; Pace, Ivancic, Edwards, Iwata, & Page, 1985; Steege, Wacker, Berg, Cigrand, & Cooper, 1989; Wacker, Wiggins, Fowler, & Berg, 1988).

To date, the applied behavioral research on choice making with persons who have severe handicaps has resulted in several outcomes. In particular, it appears necessary to conduct structured and systematic behavioral assessment procedures that are specifically designed to identify preferences and reinforcers (Green et al., 1988). These procedures are necessary because of the impaired motor and communication skills of persons with severe disabilities (e.g., profound mental retardation) that prohibit the expression of preferences in a manner typically used by nonhandicapped persons (Mithaug & Hanawalt, 1978; Reid & Hurlbut, 1977). Also, traditional means of identifying client preferences and reinforcers, such as the subjective opinion of caregivers, often do not predict what clients will actually do when provided with a choice-making opportunity (Favell & Cannon, 1976; Green et al., 1988). Another outcome of the research to date is that persons with severe disabilities do indeed display a variety of definite preferences when they are provided with functional choice-making opportunities (Green et al., 1988; Wacker et al., 1988).

In general, applied behavioral research involving preference and reinforcer identification among persons who have severe handicaps has focused on two areas: leisure activities (e.g., Dattilo & Rusch, 1985;

Appreciation is expressed to Rod Realon and Ed Konarski for their helpful comments on an earlier draft of the paper, to the Spruce Unit educators of Western Carolina Center for their efforts in conducting the procedures, and to Carole Daves for her competence in preparing the manuscript.

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Wacker et al., 1988) and vocational situations (e.g., Mithaug & Mar, 1980; Parsons, Reid, Reynolds, & Bumgarner, 1990). Given the success of research in these two areas, investigation is warranted to extend the developing preference and reinforcer assessment technology to other important areas, such as meals and snack times. Mealtimes are considered to be a significant component in the overall quality of life of an individual (Perske, Clifton, McLean, & Stein, 1977), and the ability and opportunity to choose actively what one eats or drinks can affect significantly the quality of mealtimes. However, individuals with severe handicaps often have little control over the foods and drinks that constitute their meals because of a lack of choice-making skills or opportunities to choose (Wilson, Reid, Phillips, & Burgio, 1984).

The major purpose of Experiment 1 was to develop and evaluate a means of assessing choice-making skills for expressing food and drink preferences among persons with profound mental retardation who are nonverbal. Given the research findings in leisure and vocational areas, a second purpose of Experiment 1 was to compare the results of a structured behavioral assessment to a more traditional caregiver survey for determining client food and drink preferences. A third purpose of Experiment 1 was to validate socially the importance of providing persons with severe handicaps with more choice-making opportunities regarding food and drink consumption.

In Experiment 2, we investigated the practicality of the behavioral assessment by evaluating the supervised use of the procedure by routine caregivers. Experiment 2 also evaluated whether results of the formal behavioral assessment would predict food and drink preferences if clients were provided with choice-making opportunities during routine meals.

EXPERIMENT 1

Method

Participants and setting. Five men (aged 27 to 43 years) with profound mental retardation (Grossman, 1983) who lived in a residential facility participated in Experiment 1. The participants (mental ages less than 2 years) were ambulatory and nonverbal in terms of interpretable speech. Receptively, each participant responded to simple requests (e.g., "Please hand me your coat."), although compliance was sporadic. John and Ted could dress themselves with minimal assistance, whereas Todd, Mike, and Derek required substantial staff assistance. All participants could feed themselves, although there was considerable food spillage except for Ted. Four of the 5 participants displayed maladaptive behavior, such as pica, aggression, and mild self-injury. There were no apparent physical or sensory impairments with any of the participants. The participants were selected because they met the criterion of having profound mental retardation and because the trainer (a certified special education teacher) responsible for the participants' day treatment program had previously expressed an interest in the concept of choice making.

All conditions were conducted during the participants' day treatment program, which occurred in one room of a building designed for educational and vocational services. The participants attended the program for 4 hr each day and received training in basic self-care, leisure, and vocational skills; these services were provided by the trainer and one paraprofessional assistant.

Behavioral definitions. The target behavior was choosing a food or drink item when participants were provided with two different items. Specifically, a *choice* of an item was defined as an individual picking up and consuming the item within 10 s of the presentation of the item. Conversely, *no choice* was defined as an individual not consuming either item within 10 s. A third mutually exclusive category of *expulsion* was defined as an individual spitting out an item; however, expulsion was never observed. Finally, a *preference* for a respective food or drink item was defined as an individual choosing a given item during at least 80% of the presentation trials averaged across sessions (Green et al., 1988; Pace et al., 1985).

Food and drink items targeted for preference assessments. Two primary criteria were used in selecting pairs of food or drink items. First, items

were selected if the two foods or drinks were available routinely for meals or snacks or could easily be made available during such times. Second, item pairs were selected that represented choices that would not be unusual for nonhandicapped persons to make during meals or snack times. The specific pairs of items assessed were black coffee versus coffee with cream and sugar, chocolate pudding versus applesauce, plain toast versus toast with jelly, and banana slices versus corn chips. In addition, a fifth pair of items, chocolate milk versus water, was used with 1 participant.

Assessment procedures. A complete assessment procedure for a given pair of items involved 10 sessions, with one sample trial and five assessment trials per session. To initiate a session, a participant was seated at a table and was told that a choice of food or drink items was going to be presented. Next, a complete serving of each of two items (e.g., black coffee and coffee with cream and sugar) was divided into six equal portions. The assessor then placed one portion (a cup filled one-sixth full) of each item in front of the participant. Also, if the preference to be assessed involved modifying an item with a condiment, such as adding cream and sugar to a cup of coffee, then the condiment was added within view of the participant prior to placing the items in front of the participant. The assessor then instructed the participant to sample both items, while placing a small amount of one item and then the other item in the participant's mouth. After the participant had sampled both items, another portion (one sixth) of both items was placed on the table in front of the participant in the same arrangement as the previously sampled items. Next, the assessor instructed the participant to "pick one" and allowed 10 s for the participant to make a choice. If the participant selected one of the items and consumed it, the assessor recorded which of the items the participant chose and removed the other item to prepare for the second trial. If the participant did not consume either of the two items within 10 s, both items were removed and no choice was recorded. Following this trial, four additional trials were conducted in the same manner to complete one session.

Throughout a given assessment session, the side on which a respective food or drink item was placed (right or left) remained the same for all trials. Maintaining the same location of each item was intended to help the participant discriminate between the two items. However, to control for the potential confounding effects of a tendency to choose an item that was on either the right or the left side, the side on which each item of a food or drink pair was presented was counterbalanced across assessment sessions. One assessment session occurred each weekday per participant and generally required less than 10 min to conduct.

Assessments continued until at least one preferred item was identified. That is, if inconsistent results occurred during the assessment of the first pair of items, then two other food or drink items were assessed with the same participant. If neither item was selected consistently during the second assessment, then another pair of items was assessed. This process was continued until a preference was eventually indicated (hence, the inclusion of a fifth item pair with 1 of the 5 participants). Continuing the assessment process in this manner permitted two nonmutually exclusive outcomes. First, the participant received training in choice-making skills as a function of repeated opportunities to make selections, with training consisting of (a) the sample at the beginning of each session that served as a model via the assessor demonstrating how to select first one item and then the next for consumption, (b) the five trials within each session that provided practice for the participant in selecting an item as well as in discriminating between two items, and (c) the potential reinforcement for selecting an item that was then consumed. When considered in this manner, each assessment for a given pair of items involved a total of 10 modeled demonstrations and 50 practice trials for making a choice. It was assumed that across sessions, including those sessions with different food and drink item pairs, participants would become more proficient in making a food or drink choice when presented with a paired-item opportunity.

The second outcome that could occur with the repeated assessment process pertained to the situ-

ation in which the lack of consistent selection of one item over another was due simply to a lack of a preference for one of the items. In this situation, the assessment sessions continued across different item pairs until at least one pair of food or drink items was assessed for which the participant demonstrated a preference for one of the items, based on the 80% selection criterion.

Reliability. Reliability checks regarding observations of participant choice making were conducted by two observers (experimenters) simultaneously and independently observing participant responses to the item presentation trials. Reliability checks occurred during 21 sessions and involved all participants and all pairs of food and drink items. Nineteen percent of the checks (four sessions involving 4 participants) involved a staff assistant as observer who was uninformed regarding the purpose of the study. Throughout all reliability checks (105 trials), there was only one disagreement between observers regarding a participant's response to a trial presentation.

Survey of staff opinion of participant food preferences. To compare staff opinion of the participants' food preferences with the outcome of the behavioral assessment procedures, seven direct care staff from the participants' living area were asked to complete a survey. Each survey consisted of a 5-point rating scale for target food/drink pairs. Staff were asked to place a check mark on the scale that best indicated what they thought a particular participant's response would be when provided with a choice between the two respective food or drink items (e.g., with the items plain toast versus toast with jelly, mark with a check "almost always chooses plain toast," "chooses plain toast most of the time," "no preference," "chooses toast with jelly most of the time," or "almost always chooses toast with jelly"). Staff completed forms only for those participants with whom the staff routinely worked during mealtimes.

Social validity survey. In an attempt to validate socially the importance of the focus of this research (Kazdin, 1977), a survey was conducted of professionals who were responsible for providing habilitative services for persons with developmental disabilities. Forty-one professionals from four states who were attending a managerial workshop completed the survey. The individuals held managerial positions in a variety of community and institutional settings. Each individual completed the survey anonymously by responding on a 5-point Likert scale to questions regarding the importance of choosing the foods they eat, the importance of persons with severe handicaps choosing the foods they eat, and the relative degree of choice their clients have in choosing the foods they eat.

Results and Discussion

Based on the 80% selection criterion, results indicated that all participants demonstrated a preference for at least one item when presented with respective item pairs (Figures 1 and 2). With the exception of the first session for Mike, each participant chose his preferred item on the majority of trials for every session.

Although each participant expressed at least one preference, only 2 participants expressed the same preference, reflecting the fact that food and drink preferences among persons with profound mental retardation are highly individualized. Also, 2 participants expressed preferences when presented with the second item pair (Derek and Mike), whereas 1 participant (John) did not express a preference until the third pair was presented and 1 (Ted) did not express a preference until the fourth pair was presented. Todd did not express a preference during any of the four target item pairs. Subsequently, staff members familiar with Todd's mealtime behavior were asked to generate additional items. A fifth item pair was then assessed involving chocolate milk versus water, and a preference for chocolate milk was demonstrated. In the latter case, as well as with John and Ted, it is not clear whether the individual did not have a preference for an item presented in the first sets of item pairs or whether the items were not presented in a manner that initially resulted in a choice-making response by the participant. Nevertheless, by the end of all assessment sessions, specific preferences were identified for each participant.

As noted earlier, each assessment included 10

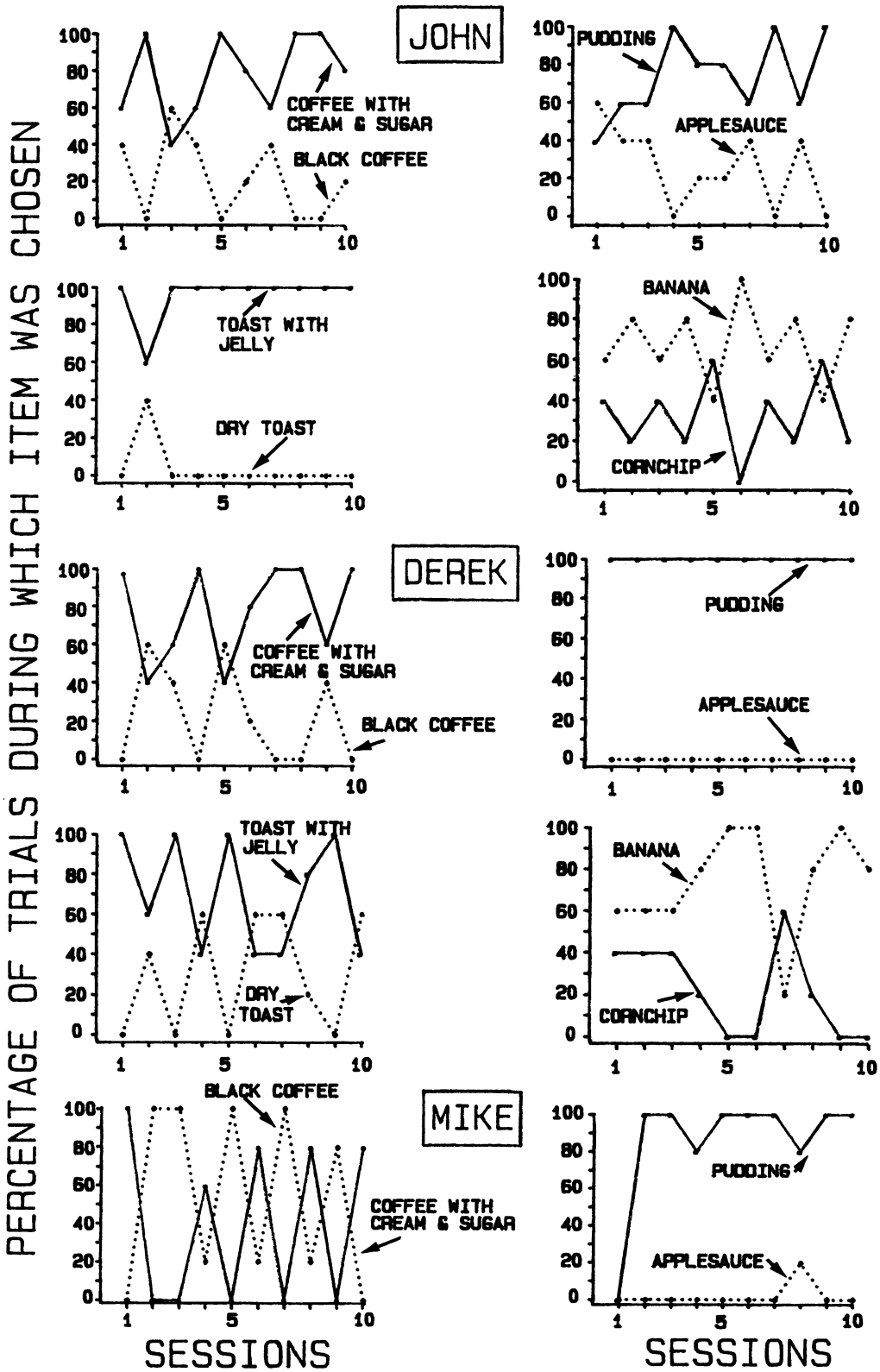

Figure 1. Percentage of assessment trials during which each food or drink item was selected during each session by each of 3 participants for target item food and drink pairs.

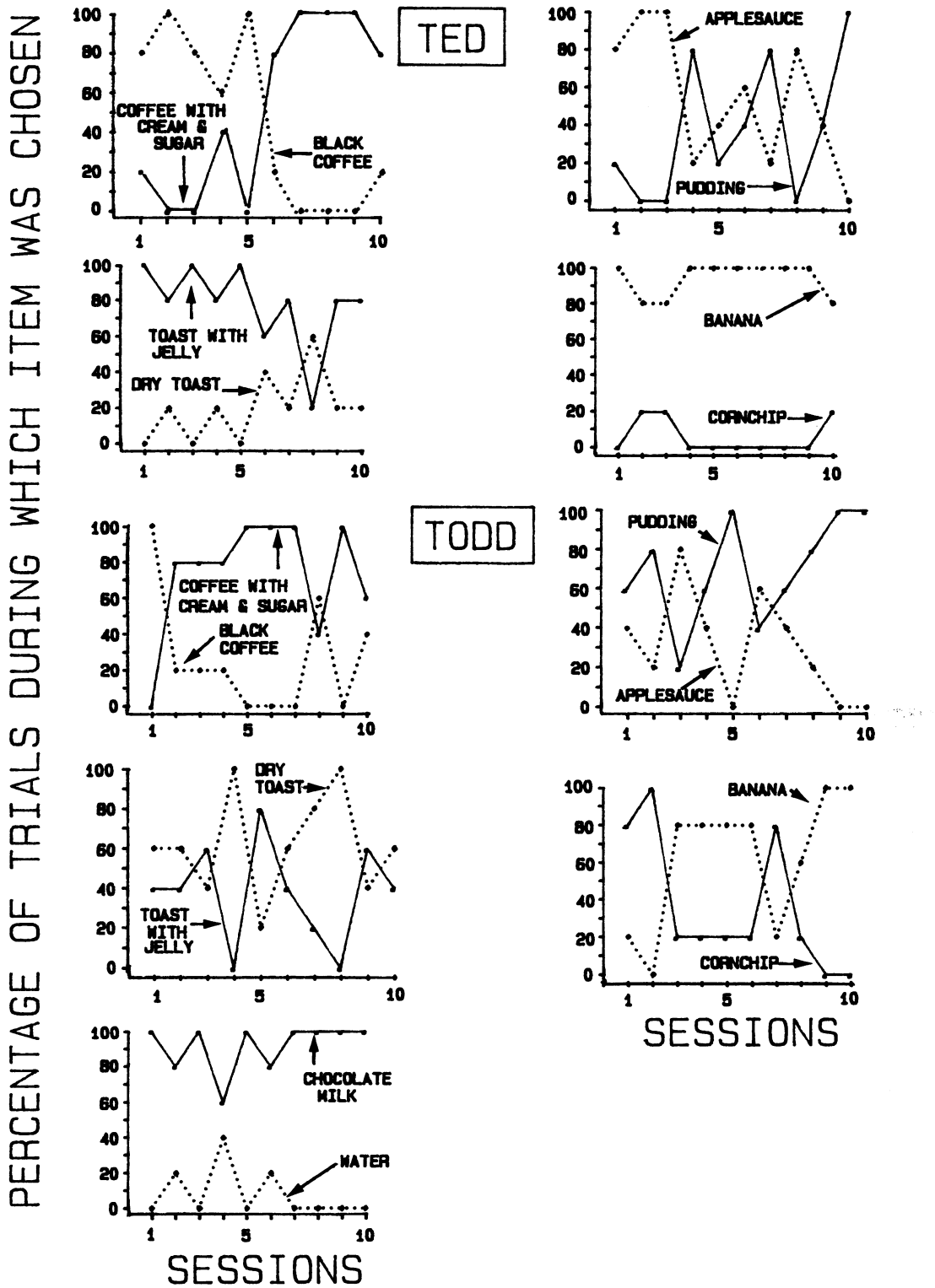

Figure 2. Percentage of assessment trials during which each food or drink item was selected during each session by each of 2 participants for target item food and drink pairs.

sessions. This number of sessions was selected in an attempt to provide a sufficient yet relatively time-efficient sample of behavior to determine patterns of responding. However, the number was selected somewhat arbitrarily and could be reduced or increased in future assessments based on the behavior observed. In particular, if responding begins to change, additional sessions might be warranted. For example, it appeared that John and Ted may have developed a preference for coffee with cream and sugar over time, as did Derek with banana slices and Todd with pudding, and continued assessment sessions could better evaluate this potential outcome. However, with these possible exceptions, the sample of 10 sessions appeared sufficient for detecting consistent preferences.

Results of the staff survey indicated that staff opinion of participant preferences did not consistently coincide with the results of the systematic assessment. Overall, there were four (preferred) items that were selected on at least 80% of the assessment trials (Todd's preference for chocolate milk over water was not included in the opinion analysis because that comparison was based on staff members' previous response to an open-ended question regarding Todd's favorite item). For those four item preferences, only 39% of the responses indicated that the staff believed the participants would choose those specific items more frequently than the items with which they were paired. Almost as many responses (33%) indicated that there would be no preference between the two items. Further, staff indicated that participants would choose the other item (i.e., the item that had been chosen on 20% or fewer of the assessment trials) either most of the time (8%) or almost all of the time (19%). For those items for which participants did not express a preference during the systematic assessment, staff opinion coincided a little more closely with the assessment results, in that 51% of the responses indicated that the respective participant would not have a preference. However, the remainder of the responses (49%) indicated that staff members believed the participant would choose one item most of the time.

These results concerning staff knowledge of participant preferences seem contradictory. On the one hand, staff reports regarding participant preferences for target items presented in specific pairs did not coincide closely with the results of the systematic assessment. On the other hand, when staff members who worked with Todd were questioned regarding his favorite item, the results of the behavioral assessment supported staff opinion (i.e., results showed Todd's preference for chocolate milk over water). However, on closer scrutiny such results are not contradictory because staff members were responding to two different tasks. Specifically, staff members may be knowledgeable about a participant's strongest or most general preference in terms of favorite foods or drinks but may not be knowledgeable about preferences involving a comparison between any two other items. Thus, staff may be able to identify the most preferred items in a large sample of foods and drinks but may not be able to identify what an individual prefers when presented with two specific items during any given meal.

Results of the social validity survey indicated that service providers believe being able to choose one's foods is important both for them and for the people they serve (93% and 88% reported it was at least very important). Results also indicated that, despite the importance of food choices, over 80% reported that their clients with severe handicaps generally have less choice than the nonhandicapped populace regarding the foods they eat (43% reported that their clients have considerably less choice). These results support the social importance of assisting persons with severe handicaps to increase their active involvement in decisions regarding the foods they consume.

Although the importance and efficacy of the behavioral assessment procedures were supported both experimentally and in terms of social validation, several questions remained. First, because the process was conducted by the experimenters, it cannot be concluded that the assessment procedure would be useful if conducted by the routine caregivers of the participants as part of ongoing treatment services. In this regard, if a therapeutic procedure is to benefit significantly persons with handicaps, the procedure must be amenable to implementation by routine caregivers in a proficient manner (Reid,

1987, chap. 1). Second, because of the highly structured manner in which the assessment process was carried out in the classroom (e.g., 1 assessor with 1 participant in a corner of the classroom, repeated trials per session), it could not be concluded that the preference results necessarily would be predictive of participant preferences if the participants were provided with more normal choice opportunities during routine mealtimes. Experiment 2 was conducted to address these two questions.

EXPERIMENT 2

Method

Participants and setting. Fourteen adolescents and adults from one unit of the same residential living area and educational program as the participants in Experiment 1 participated in Experiment 2. Each participant was profoundly mentally retarded, with adaptive skills and maladaptive behaviors being very similar to those of the participants in Experiment 1. The participants' mental ages were below 2 years, and the participants displayed very few verbal communication skills. Each participant could perform some basic self-care skills, although staff supervision was required. Also, whereas none of the participants in Experiment 1 had sensory impairments, 2 participants in Experiment 2 had visual disabilities.

Five staff members participated as assessors, including two certified special education teachers and three teacher assistants. These staff members represented the entire group of personnel who provided the participants' day treatment services in four classrooms in the educational/vocational program described in Experiment 1.

Food and drink items targeted for preference assessments. The same criteria used in Experiment 1 to select food and drink items were employed in Experiment 2. In addition, the participants' assessors, as well as direct care staff, were questioned regarding what they thought constituted a participant's favorite food or drink item. Assuming that staff were knowledgeable regarding most preferred food and drink items of respective participants, asking their opinion was used to expedite the paired comparison preference assessment. (A demonstration of choice making and preferences could not occur unless a participant was provided with a preferred item.) Nine food and drink pairs were assessed across the 14 participants.

Assessment procedures. The assessment procedures were the same as the procedures in Experiment 1. In addition, a staff training component was included to teach the staff how to apply the procedures. The training involved five steps based on a generic behavioral staff training model (Reid, Parsons, & Green, 1989, chap. 3). First, the experimenters met with the staff to discuss the rationale for assessing participant preferences. Second, a brief written handout was provided that outlined the assessment procedures. Third, an experimenter met individually with each staff member and modeled the assessment procedures. Fourth, an experimenter observed the staff member practice conducting a session. Finally, an experimenter provided verbal feedback to the staff member contingent on his or her proficiency in conducting the procedures. The fourth and fifth components were repeated until all staff members successfully conducted an assessment session. Training required from two to four individual meetings per staff member.

Once staff were trained to conduct assessment sessions, an experimenter continued to interact with each staff person to periodically supervise him or her in conducting sessions. In this regard, in accordance with recommended supervisory practices (Reid et al., 1989, chap. 4) the intent was not to withdraw totally the involvement of the experimenters, who had some designated supervisory responsibility for the staff persons through the agency's existing management structure. Rather, the intent was to ensure, through appropriate monitoring and feedback, that the assessment sessions were conducted appropriately. Also, in accordance with customary agency practice, an experimenter filled in periodically for staff members by conducting sessions when they were unable to complete sessions. However, staff conducted the majority (69%) of the sessions independently.

Generalization assessments. To evaluate the predictability of the classroom assessment regarding

participant choice-making skills and preferences during regular mealtimes, generalization assessments were conducted with the first 5 participants who demonstrated a preference for a food or drink item in the classroom (i.e., selected the item on 80% or more of the trials). A generalization session was initiated after a participant was seated at his or her table during lunch in the regular dining room of the participant's living unit. (In general, each participant sat at a table with two or three individuals, with approximately nine other persons at other tables in the dining room.) The generalization assessment involved individually presenting the participant with two food or drink items, instructing the participant to sample both items, and then requesting the participant to choose an item in a manner identical to the first assessment trial conducted during classroom sessions. The items presented to each participant constituted the same item pair that had been assessed previously in the classroom and for which a preference for one item had been demonstrated.

In contrast to the assessment sessions in the classroom that included five trials, the session in the dining room during an ongoing meal involved only one trial. The rationale for limiting the number of trials in the dining room was twofold. First, one opportunity to make a choice between two food or drink items more closely resembles the way in which choice opportunities are routinely presented to people (without handicaps) during normal mealtimes. Second, conducting five trials following the initial sampling of both food or drink items would have been relatively time consuming and could reduce the likelihood that staff members would provide frequent choice opportunities during mealtimes because of the time and effort involved.

Generalization sessions were conducted by two of the previously trained staff members from the day treatment program (these staff members regularly worked in the dining room during mealtimes) with supervision by an experimenter. One assessment session (i.e., one trial) was conducted per day. If a participant selected an item on at least 80% of the trials during the first six generalization sessions, the assessment was terminated. If a preference was not demonstrated after six sessions, a maximum of four additional sessions was conducted.

Reliability. Observations of food and drink choices in the classroom were conducted by the staff members who implemented the assessment sessions. Reliability checks were conducted as in Experiment 1 by an experimenter during 24 classroom sessions, including at least one session for every staff person and every participant. Across all reliability checks (120 trials), there were only three disagreements regarding a participant's choice. During generalization assessments in the dining room, reliability checks were conducted at least once for every participant, and no disagreements were recorded. The reliability checks also afforded the opportunity to observe staff adherence to the previously trained assessment procedures. Throughout the 24 sessions that were monitored, no deviations from the recommended procedure were observed that affected procedural integrity.

Results and Discussion

Results indicated that the five staff members who were the routine day treatment providers for the participants were able to conduct the behavioral assessment procedures with appropriate supervision. Each participant was provided with an opportunity to make a choice, and 13 of 14 participants expressed a distinct food or drink preference in direct response to the paired-item assessment procedure (Table 1). As indicated in Table 1, 11 participants demonstrated a preference during the assessment of the first food or drink item pair, whereas 2 required a second pair of items before a preference was demonstrated. The complete assessment was not conducted for 1 participant because she consistently reached for a specific item immediately upon sitting at the table. Hence, there appeared to be no need to attempt formal assessment trials because she was already clearly expressing a preference. Overall, these results are encouraging because (a) all 14 participants made clear choices, and (b) the assessment was conducted relatively quickly in that a maximum of two item pairs was required per participant.

Table 1
Food and Drink Items Targeted for Preference Assessment

Participant	First item pair	Preferred item (% chosen)	Second item pair	Preferred item (% chosen)
Don	marshmallow/corn chip	marshmallow (94)		
Stuart	marshmallow/corn chip	corn chip (96)		
Tommy	raisins/cheetos®	cheetos® (91)		
Harry	cola/milk	cola (96)		
Mary Beth	cola/milk	cola (80)		
Sondra	crackers/raisins	crackers (96)		
Sandra	water/cola	no preference	peanut butter crackers/carrots	peanut butter crackers (98)
Kim	cola/milk	cola (94)		
Kathy	cola/milk	cola (98)		
Dorothy	celery/raisins	celery (94)		
David	cola/milk	cola (88)		
Donna	cola/milk	cola (90)		
Susan	cola/milk	no preference	cheese slice/ corn chip	cheese slice (100)

Results of the generalization assessment indicated that the assessment conducted in the classroom was predictive of participants' behavior during routine mealtimes (Figure 3). All 5 participants typically chose the item during mealtimes that was previously demonstrated as preferred during the classroom assessment. Four of these participants chose their previously identified, preferred item on at least 80% of the trials during mealtimes in the dining room. One participant, Kim, chose the previously identified, preferred item on 70% of the trials (seven of 10 trials). Thus, the assessment procedure was predictive of subsequent behavior across settings as well as applicable to normal mealtime situations.

GENERAL DISCUSSION

Results of the two experiments suggest a means through which persons who have severe handicaps may participate more actively in events that are likely to affect their quality of life (i.e., mealtimes). The results also demonstrate that the type of systematic preference and reinforcer assessment technology developed through previous research in leisure and vocational areas can be applied to a third important area. Across the two experiments, the assessment procedure demonstrated that all 19 nonverbal participants expressed clear preferences. Such an empirical identification of food and drink preferences can allow persons who are nonverbal and profoundly mentally retarded to be provided with more meal or snack items that they prefer. The importance of these results seems heightened when considering that the more traditional approach of questioning direct care staff did not reliably predict what their clients would actually choose. Further, demonstration that the participants' routine day treatment providers could successfully conduct assessment sessions with appropriate supervision supports the practicality of the procedure.

In Experiment 1, it was suggested that, although staff members may not be very accurate in judging specific food or drink preferences when their clients have the opportunity to choose between two items, they may be able to identify one item that is highly preferred by individuals relative to all other items. The relative immediacy with which participants demonstrated a preference in Experiment 2 supports this conclusion. That is, whereas none of the 5 participants in Experiment 1 demonstrated a preference among the first item pair presented, 11 of

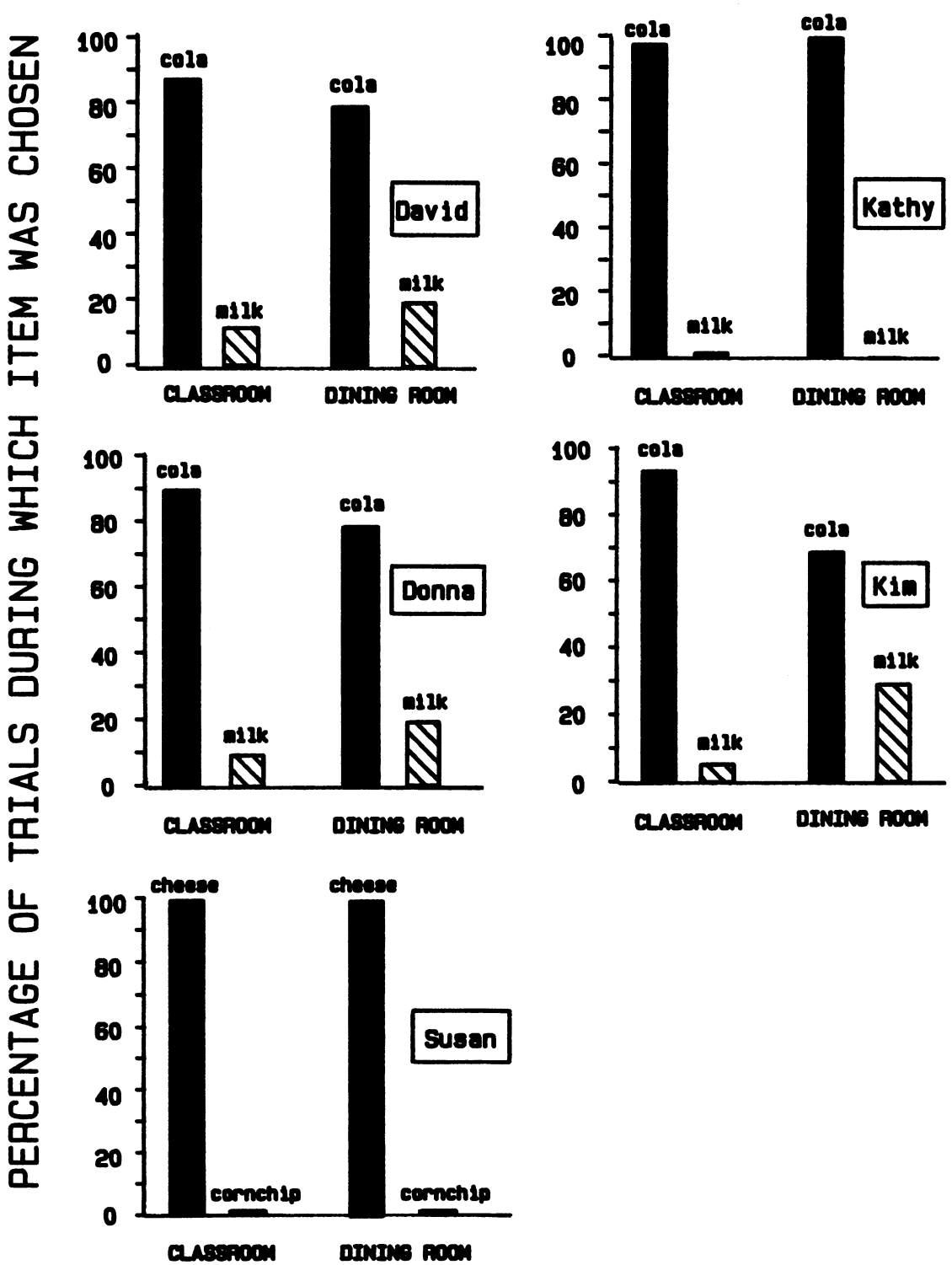

Figure 3. Percentage of assessment trials during which each food or drink item was selected when conducted in the classroom and dining room (generalization) situations for each of 5 participants.

13 participants in Experiment 2 demonstrated a preference among the first item pair; only the items assessed in Experiment 2 included a favorite item based on staff opinion. These results have several practical implications in terms of enhancing active participation of persons with profound mental retardation in choosing their foods and drinks during mealtimes. First, staff might identify a highly preferred or favorite item to provide frequently during meals when possible. Second, routinely available food or drink items that staff do not identify as a favorite item might be formally assessed during educational or habilitative treatment programs using the procedures described in this investigation. Subsequently, given the generalization results of Experiment 2, preferred items could be provided more frequently during snacks and mealtimes. Third, because it is pragmatically impossible to assess all potential combinations of food or drink items, new or nonassessed items might be quickly assessed during mealtimes using the modified procedures described in Experiment 2. However, before conducting an assessment similar to the generalization assessment, the more comprehensive assessment procedure should be implemented to ensure that an individual can appropriately respond to the choice situation (i.e., the individual should be assessed across item pairs until a preference has been demonstrated). In this manner, the difference between lack of preference and lack of skills in expressing a preference can be determined over time.

Our assessment procedures targeted only a small sample of the types of choice-making opportunities and preferences that could be investigated during snacks and mealtimes. Given the importance of providing choices (Bannerman et al., 1990; Guess et al., 1985; Houghton et al., 1987; Shevin & Klein, 1984), future research should evaluate how to assist nonverbal persons with profound mental retardation in making other types of choices, such as specific preparation of foods (e.g., scrambled eggs versus fried eggs) and use or nonuse of condiments. Also, evaluating the context in which respective choices are provided warrants investigation in regard to whether preferences change over time or as a function of specific conditions (e.g., use of condiments or frequency of choice presentations within and across meals).

Additional research should focus on extending the use of behavioral assessment procedures to evaluate preferences in other important areas, so that individuals with severe handicaps can participate more actively in decisions that affect their lives. For example, systematic assessment of individual preferences for roommates or living accommodations may be a means of allowing individuals to be involved in decisions that can critically affect the quality of their lives. For persons with very debilitating handicaps who do not communicate preferences independently, choice-making opportunities may represent an alternative means of allowing these individuals to participate actively in routine decisions that may affect their quality of life.

Given the outcome of this investigation, as well as similar results in the leisure and vocational areas referred to previously, a basic technology currently exists for reliably identifying preferences and reinforcers for persons with severe handicaps. Although research on the application of the technology to other important areas is needed, it is equally important to determine how to encourage the adoption of the existing assessment technology into routine service delivery operations. The social validity results of this investigation, as well as our own clinical observations in many human service agencies serving persons who have severe handicaps, suggest that client preferences and reinforcers are not systematically assessed, and actual choices are not routinely provided. Perhaps the preference and reinforcer assessment procedures could be incorporated into existing evaluation protocols along with, or in lieu of, intelligence tests, adaptive behavior scales, and others. The determination of how to promote the adoption of the assessment technology is likely to be enhanced if applied behavioral researchers begin to address this issue.

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Received June 8, 1989
Initial editorial decision August 4, 1989
Revisions received November 2, 1989; December 15, 1989
Final acceptance January 10, 1990
Action Editor, David P. Wacker