

Relative Preference for Edible and Leisure Stimuli in Children with Autism: A Review of Conine & Vollmer (2019)

Reviewed by Aleksandra Terekhova, B.S.

Why study this topic?

Various stimuli are used in behavioral interventions for individuals with developmental disabilities. Often edible or leisure stimuli are delivered contingently on some target behavior to function as reinforcers in order to teach new behaviors, alternatives to problem behaviors, functional communication skills, and/or daily living skills. It is important to identify preferred stimuli individually for each client to ensure the most effective reinforcers are used during the intervention process. Preference assessments can provide a hierarchy of preference among various stimuli for an individual, as well as identify new stimuli that are not already in the individual's repertoire.

Previous research on the relative preference between edible and leisure stimuli, particularly DeLeon, Iwata, & Roscoe (1997), has demonstrated that edible items reliably rank higher than leisure items on combined (i.e., containing both leisure and edible stimuli) preference assessments for individuals with developmental disabilities. DeLeon et al. (1997) suggested that leisure stimuli are displaced by edible stimuli, meaning that leisure stimuli that are highly preferred in the absence of edible stimuli will receive a lower preference ranking in a combined assessment with edibles. Therefore, the best practice for behavior analysts conducting preference assessments has been to evaluate preference for edible and leisure stimuli independently of one another.

What did the researchers do?

Conine & Vollmer (2019) replicated previous research on relative preference of leisure stimuli and edible stimuli in stimulus preference assessments with a population of children with Autism Spectrum Disorder (ASD) attending treatment centers providing applied behavior analysis (ABA) services.

Twenty-six children, all of whom were diagnosed with ASD participated in the study. Age ranged between 2 years, 8 months and 12 years (mean 6.4). A total of 16 stimuli (8 edible and 8 leisure stimuli) were identified for inclusion in the preference assessment for each child through a three-step preassessment procedure. First, the researchers conducted a modified version of the Reinforcer Assessment for Individuals with Severe Disabilities (RAISD; Fisher, Piazza, Bowman, & Amari, 1996) with each individual's primary caregiver, the BCBA supervising the child's case at the ABA clinic, or the child's primary behavioral technician. As a result of RAISD, the interviewees were asked to create a list of at least 8 foods and at least 8 leisure items that they suspected might function as a reinforcer for the child. Second, an additional brief interview with behavior technicians on the child's case was conducted. The technicians were asked to name foods or toys that were not already on the experimenters' list that might function as reinforcers for the child. Lastly, the researchers conducted a brief (10-30 min)

observation of each child during free play period at the center and noted any additional edible or leisure stimuli that the participant interacted with frequently during the observation. The experimenters also exposed the individual to additional edible or leisure stimuli during this period if fewer than 8 items per stimulus class were identified in the first two steps of the preassessment process. If a screen-based media device (e.g., iPad, computer, tablet) was not included on the participant's list based on the preassessment results, one was added and included in the preference assessments.

A total of three multiple-stimulus without replacement (MSWO) preference assessments were conducted for each participant. Additional sessions were conducted as needed until a tie in ranking was resolved. As outlined by DeLeon et al. (1997), the first assessment contained the 8 edible items identified in the preassessment, the second assessment contained the 8 leisure items, and the third assessment combined 4 top-ranked edible and 4 top-ranked leisure items (for 8 total, to keep the number consistent across assessments) identified in the previous two assessments. The order of the edible and leisure preference assessments was varied unsystematically but the combined assessment was always conducted last. Both the edibles and the combined assessments were conducted either early in the morning before lunch or in the afternoon, a minimum of 2 hours after the participant had lunch to avoid possible satiation effects in relation to the edible stimuli. Beyond that, access to the specific stimuli was not restricted outside the assessment sessions.

What did the researchers find?

The top-ranked item on the combined assessment was an edible item for 65% of the participants, and was a leisure item for 35%. All edible items outranked all leisure items (i.e., leisure items got displaced) on the combined assessment for 23% of the participants. In contrast, all leisure items outranked all edible items on the combined assessment for 8% of participants. The researchers concluded that it was more likely for a top-ranked item on the combined assessment to be an edible item rather than a leisure item. Additionally, complete displacement of leisure items by edible items was more likely to occur than the opposite. However, in contrast to previously reported findings, the most likely outcome of the combined assessment was not a complete displacement of either stimulus class by the other, but some other mixed-ordering of leisure and edible items. This occurred for 69% of the participants in the study.

What were the strengths and limitations of the study? What do the results mean?

The results of the study indicated partial agreement with previous research in that the highest-preferred item on the combined preference assessment was an edible item for the majority of the participants (69%). The researchers evaluated possible reasoning behind the departure of their results from prior studies on the topic and provided four major factors.

First, their participant characteristics differed from previous studies. The present study involved only children (i.e., under 13 years of age), all of whom were diagnosed with ASD and received ABA services at a daily center or clinic. The authors noted that such pool of participants

was representative of the primary clientele of the majority of behavior analysts in the field. Second, there may have been different establishing operation (EO) effects due to the settings that the current participants were in. Third, the pre-assessment process may have identified idiosyncratic items that were included, and screen-based media devices were included for all participants. The researchers found that the top-ranking item on the leisure-only assessment was a screen-based media device for 58% of the participants, indicating that such items were highly preferred by the majority of the participants in the study relative to other leisure stimuli. For 89% of the participants for whom the top-ranked item on the combined assessment was a leisure item, that top-ranked item was a screen-based media device. Finally, procedures differed slightly in that only 3 sessions of the MSWO were conducted rather than 5, and duration of access to the stimuli differed from some of the previous studies.

The researchers recommend practitioners conduct individualized preference assessments that contain both edible and leisure items rather than assuming displacement by edible stimuli and running separate assessments. Practitioners should consider both practical and individual reasons when making a decision whether or not to conduct a combined preference assessment. In some cases, conducting a combined assessment may be beneficial if the goal is to identify the most preferred stimuli overall. On the other hand, some parents may be against using food as reinforcers due to caloric intake or other reasons, hence edible stimuli do not need to be evaluated in those instances. In other cases, media-based devices, such as iPad, may already be known to be a highly preferred item if the individual has it at home, and adding reinforcer variety may be one of the goals of treatment, then these devices may be excluded as well. Inclusion of the media-based devices in the leisure array of stimuli is an important addition to the current literature, since such devices are widely used in ABA clinics. However, the researchers did not conclude that such stimuli are always the highest-preferred even among leisure items alone.

Overall, Conine and Vollmer (2015) recommended that practitioners select the stimuli to include in the preference assessments on an individual basis for each client rather than assuming that the highest-preferred item is always going to be an edible if a combined preference assessment is conducted.

Article citation

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