An evaluation of a stimulus preference assessment of auditory stimuli for adolescents with developmental disabilities

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Abstract

Previous researchers have used stimulus preference assessment (SPA) methods to identify salient reinforcers for individuals with developmental disabilities including tangible, leisure, edible and olfactory stimuli. In the present study, SPA procedures were used to identify potential auditory reinforcers and determine the reinforcement value of preferred and non-preferred auditory stimuli. The results from this study suggest that the paired stimulus procedure utilized was effective in identifying preferred and non-preferred auditory stimuli, as the contingent application of the identified auditory stimuli produced higher rates of correct responding than did non-preferred auditory stimuli for all participants.

Keywords: Stimulus preference assessment; Auditory stimulation; Paired stimulus

Contingent application of positive reinforcement lies at the heart of operant procedures used to treat behavioral deficits. In applying operant techniques to establish or maintain socially desirable outcomes, significant emphasis is placed on the selection of salient reinforcers. However, the identification of reinforcers for the population of individuals with severe disabilities may be particularly difficult because of developmental or physical disabilities, limited verbal repertoires or other factors. Assessment methodologies have been developed, because there are possible difficulties in identifying reinforcers for individuals with...
developmental disabilities. These methods include personal interviews or nominations, reinforcer surveys and stimulus preference assessment (SPA) techniques. Still, numerous researchers have confirmed that SPA techniques can be used to more accurately predict reinforcer effectiveness in individuals with developmental disabilities than other, less structured, techniques (e.g., Carr, Nicolson, & Higbee, 2000; DeLeon & Iwata, 1996; Fisher et al., 1992; Pace, Ivancic, Edwards, Iwata, & Page, 1985; Roane, Vollmer, Ringdahl, & Marcus, 1998). Stimulus items have been presented individually (Pace et al., 1985), in pairs (Fisher et al., 1992) and in multiple stimulus assortments (Carr et al., 2000; DeLeon & Iwata, 1996; Roane et al., 1998). SPA methods allow the reinforcing effects of new stimuli to be evaluated, the reinforcing effects of various stimuli to be compared, and individuals with and without vocal communication skills to actively choose reinforcers.

The majority of the stimuli used in previous paired stimulus studies consisted of edible and tangible (e.g., toys or manipulatives) items. While some of the studies, including Pace et al. (1985), Fisher et al. (1992) and DeLeon and Iwata (1996) included one or more auditory stimuli, such as music, clappers or beeps in their studies in addition to other various types of reinforcers, no study, to date, has specifically targeted auditory stimuli.

Using auditory stimulation as a behavioral consequence has several potential advantages. Auditory stimuli may be easily delivered and controlled in virtually any setting using portable electronic devices. Auditory stimulation can possibly be “consumed” without disrupting the natural environment (e.g., listening to music through headphones) or interrupting independent work or academic tasks. Finally, the type of auditory stimulation provided might be easily varied to mitigate satiation effects.

Despite these potential advantages, to date, there has been no research on stimulus preference assessments utilizing only auditory stimuli. Thus, the purpose of the present study was to investigate the ability of current SPA techniques to assess the potential reinforcing effectiveness of auditory stimuli and to investigate the effects of high- and low-preference auditory stimuli on the academic/vocational behavior of middle school students with disabilities.

1. Method

1.1. General procedures

1.1.1. Participants and setting

Six adolescents, ranging from 13 to 15 years of age, participated in the study. Participants were sixth to eighth graders receiving special education services in a self-contained classroom in a public middle school. Each participant was classified with a disability as defined by IDEA, and each of the seven participants fell under the categories of autism (Jack), intellectual disability (Cameron, Ivan, James, Kayla) or multiple disabilities (Ty). With the exception of Kayla, all participants were male. Participants did not have any hearing problems that interfered with the ability to listen to auditory stimuli. Ty had a visual impairment that required additional pre-training before beginning the preference assessment (described below). Prerequisite skills for each participant included the ability to differentiate between different auditory stimuli and the ability to actively select a choice from two options when given the opportunity. Preference assessment sessions were conducted in a small, separate room located on the campus of the participants’ middle school, to minimize distractions and noise levels for other classmates. The participant, the experimenter and a second observer were the only individuals present in the room.
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