

# Paired Stimulus (PS) Preference Assessment Session Description

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*Please note, this protocol is designed for use by professionals who have experience conducting preference assessments, and is not a substitute for formal training.*

Fisher, W. W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens, J. C., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis, 25*, 491-498.

**Purpose:** This is a validated empirical preference assessment designed to identify preferences for various stimuli. Research has demonstrated that preference rankings obtained via this assessment procedure predict reinforcer effectiveness. That is, higher preference stimuli are more likely to function as more powerful reinforcers than lower preference stimuli. It should be noted that this assessment will provide a *relative* preference ranking, because stimuli are compared with each other directly. Therefore, it is important to include stimuli that are believed to be somewhat preferred. If staff are not familiar with a student, or know of only a few stimuli that seem preferred, then a structured interview (the RAISD\*) should be conducted with care providers to identify additional stimuli.

## **Preparation:**

- Obtain proper consent from guardians.
- Define criteria for use of protective equipment, response blocking, and session termination based on risk for injury.

**Materials:** Between 6 to 12 stimuli (each will be assigned a number), index cards with paired numbers including all possible pairs of stimuli, and paired stimulus preference assessment data sheet.

**Procedure:** Ideally, sessions will be conducted in a room with no other children present and no materials nearby, other than those required for the assessment. Stimuli are presented in pairs until each stimulus has been presented with every other stimulus. All problem behavior is ignored.

## **Pre-session Setup**

- Setup datasheet and prepare materials.
- Setup a chair and table for the student.
- When assessing preference of edibles disinfect the table and wash hands (student, session therapist, anyone handling food).

### Pre-session Sampling

- Prior to beginning the assessment, seat the student at the table and allow them to sample each stimulus. For a toy, show the student how it works (e.g., press buttons, flip pages, turn on) and then place the stimulus on the table. If the student approaches the stimulus allow them 5-10s access (for edibles provide a small bite) and then repeat this procedure with the next stimulus.
- If the student does not approach the stimulus after 5s, the therapist will prompt the student to sample the stimulus for 5s. After sampling the item (or consuming the edible), present the stimulus again for 5s. If the student approaches, allow 5-10s access; if they do not approach move on to the next stimulus.

### Presentation

1. Shuffle the index cards to randomize the sequence of pair presentations. Randomly select one of the index cards. The two stimuli identified on the card selected should be used in steps 2 - 4.
2. Hold the stimuli in front of the student so that each stimulus is approximately 2 feet from the student and 2 feet from the other stimulus.
3. If the student approaches one of the stimuli within 5 seconds, immediately give that stimulus to the student and remove the other stimulus from sight. Allow the student access to the chosen stimulus for approximately 30 s (or consumption of the edible), then start again with step 1.
4. If the student does not approach either stimulus within 5 seconds, remove both stimuli and then have the student sample each (separately) for 5 seconds. Represent the stimuli following steps 2 & 3. If the student does not make a selection after the second presentation move to the next pairing (step 1).
5. If the student avoids either stimulus, remove the item from in front of the student for 5 seconds and represent following steps 2 & 3. If the student does not make a selection after the second presentation move to the next pairing (step 1).
6. Repeat these procedures until all combinations have been presented.

**Data Collection:** Use the Paired Stimulus data sheet. For each stimulus presented, data collectors will indicate whether the student's response to the item was Approach (AP), Consume (C), Avoidance (AV), or No Response (N). If a presentation of a pair must be repeated (e.g., student did not make a choice, avoided stimuli) data collectors will indicate the appropriate response in the first columns for the first presentation, and then indicate results in the second column for the second presentation.

**Approach Responses** - defined generally as the student moving toward the stimulus, with any part of the body, within 5 s of stimulus presentation, and may include at least one of the following responses directed at one of the stimuli presented:

Reach - Moving hand toward object such that the hand moves at least 6 inches from its previous position and moves toward the object

Positive Vocalizations - Asking for the object, stating name of object in conjunction with leaning toward or reaching for object, laughing

Smile - Smiling within 5 seconds upon presentation while looking at object for 3s

Lean - Leaning toward object at least 4-5 inches from original position

Eye Contact - Eyes looking at the object for at least 3 continuous seconds

**Consummatory Responses** – defined generally as interaction with the stimulus, moving towards the stimulus, consuming the stimulus (for edibles and tangible stimuli), or engaging in the activity (when the stimulus was an activity, such as playing catch with the therapist). This includes any attempt to manipulate, “experience” or consume the stimulus in a manner in which it is intended.

Consumption may be defined differently for different types of stimuli:

Visual stimuli - 3 continuous seconds of eye contact

Edible stimuli - eating object without spitting or taking any portion out of mouth (does not include edibles which leave the mouth due to drooling)

Auditory stimuli- Leaning toward music for 3 continuous seconds, rocking, or clapping to the music; vocalizing, humming or singing for 3 continuous seconds

Vestibular stimuli - Sitting on the object and either attempting to rock or swing for 3 continuous seconds

Olfactory stimuli - Being within 6 inches of object for 3 continuous second

Tactile stimuli - Tolerating object for 3 seconds (leaning toward, holding or grasping, putting hand in on object). Holding or grasping object for 3s.

Social stimuli- Tolerating or allowing the therapist to provide the social stimulus without pushing, pulling away, or attempting to aggress for 3s

**Avoidance Responses** – Includes actively pushing/throwing away objects or moves body away within 3s of presentation, or negative vocalizations such as crying, screaming, or saying “get it away” or “no”.

**No Response** - Exhibiting no reaction to the stimuli within 5s of presentation.

**Scoring** - on the Paired Stimulus data sheet, use the following scoring code for each stimulus:

Record “AP” if student engages in an approach response

Record “C” if student engages in a consummatory response

Record “AV” if student engages in an avoidance response

Record “N” for no response

### **Data Summary and Analysis**

- Determine the total number of times each stimulus was presented (trials). This will be the equal to the total number of stimuli examined minus one. That is, if 12 stimuli were examined, then each one was presented with all the others for a total of 11 presentations.
- For each stimulus, determine the number of times it was scored as approached and consumed (AP and C). Take that number and divide by the total number of presentations (then multiply by 100 to obtain a “percentage of trials approached and consumed”). If the student approaches, then throws the item, it should be scored AP and AV- and thus not included as “approached and consumed”.
- Sort the data in Excel so the stimuli are sorted from higher to lower preference. Graphically depict the preference hierarchy, with the stimuli listed on the x-axis, and the percentage of trials approached and consumed on the y-axis.

**Graphically depict** the preference hierarchy, with the stimuli listed on the x-axis, the percentage trials each stimulus was selected on the primary y-axis, and (optional) the rate of problem behavior on the secondary y-axis (use a double-bar bar graph or bar/line graph to depict preference and rate of problem behavior).

**Interpretation of Results:** This assessment procedure has been validated, and there is a high probability that the top ranked stimuli will function as more powerful reinforcers than the lower ranked stimuli. Generally speaking, stimuli approached and consumed over 80% of trials are considered high-preference stimuli. Of course, reinforcer effectiveness is not absolute, and a function of other factors including the response and the availability of other reinforcement. However, with all these factors being equal, the preference hierarchy obtained should generally predict reinforcer effectiveness.

\*RAISD – Reinforcer Assessment for Individuals with Severe Disabilities – is structured parent interview designed to identify stimuli to evaluate in a preference assessment.

Fisher, W.W. Piazza, C.C., Bowman, L.G., & Amari, A. (1996). Integrating caregiver report with a systematic choice assessment. *American Journal on Mental Retardation*, *101*, 15-25.

### Paired Stimulus Preference Assessment

Student's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Data Collector: \_\_\_\_\_

Primary/Reliability (circle one)

**Item 1:**

1	2	1	3	1	4	1	5	1	6	1	7	1	8	1	9	1	10	1	11	1	12	1	13

**Item 2:**

2	3	2	4	2	5	2	6	2	7	2	8	2	9	2	10	2	11	2	12	2	13		

**Item 3:**

3	4	3	5	3	6	3	7	3	8	3	9	3	10	3	11	3	12	3	13				

**Item 4:**

4	5	4	6	4	7	4	8	4	9	4	10	4	11	4	12	4	13

**Item 5:**

5	6	5	7	5	8	5	9	5	10	5	11	5	12	5	13

**Item 6:**

6	7	6	8	6	9	6	10	6	11	6	12	6	13

AP- approach

C – consume

N – no response

AV - avoid

**Item 7:**

7	8	7	9	7	10	7	11	7	12	7	13

**Item 8:**

8	9	8	10	8	11	8	12	8	13

**Item 9:**

9	10	9	11	9	12	9	13

**Item 10:**

10	11	10	12	10	13

**Item 11:**

11	12	11	13

**Item 12:**

12	13

**Item 13:**

AP- approach

C – consume

N – no response

AV - avoid