A Functional Analysis for “Pseudo-Seizures” Using Duration as the Dependent Measure

Rachel J. Valleley, Gretchen Scheidel, and Keith Allen
Munroe-Meyer Institute for Genetics and Rehabilitation, University of Nebraska Medical Center

Abstract

Functional analysis methodology has typically focused on identifying the function of frequent problem behaviors that occur in discrete episodes of brief duration (e.g., aggression, self-injurious behavior, noncompliance). However, little research has been conducted examining whether functional analyses are useful and appropriate for low frequency or long duration behaviors. A thirteen-year old male with Cerebral Palsy presented in an outpatient behavioral health clinic with a long-standing history of pseudo-seizures that occurred at least 20 times per day lasting approximately 5-60 minutes. No medical explanation for these pseudo-seizures had been found. A functional analysis was conducted utilizing duration as the dependent variable in an effort to determine the function of the pseudo-seizures. Experimental conditions lasted 25 minutes and modifications to the test conditions were made. Four different experimental conditions (escape, attention, alone, and control) were completed three times to determine the possible function of the pseudo-seizures. Data from the functional analysis demonstrated that the pseudo-seizures served multiple functions; however, the escape condition produced the longest duration “pseudo-seizure.” Challenges of using a functional analysis with duration as the dependent variable will be discussed as well as what types of modifications were made to test conditions.

Introduction

Functional analysis methodology has been useful for discovering variables that impact problem behavior.

- Behavior topographies have included self-injury, aggression, disruption, vocalizations, property destruction, stereotypy, noncompliance, tantrums, elopement, Pica.
- Dependent measure is commonly response frequency which has allowed for brief 5-minute conditions.
- Very little research related to treating seizures with behavioral interventions.
- Focus has mostly been upon identifying explanations for or providing descriptions of “pseudo-seizures”.
- Need a definition of “pseudo-seizures”.
- A child presented with pseudo-seizures in an outpatient clinic and the functional assessment interview did not clearly identify controlling variables.
- The purpose of the case study was to explore whether the functional analysis methodology could be utilized with a novel behavior that required modifications to the methodology.

Method

Participant & Setting

- 12 year-old Caucasian male: Bryan
- Cerebral palsy
- Referred to Behavioral Health Clinic (BHC) which operated within a primary care pediatric clinic
- Conditions were conducted in a clinic room with toys, couch, table, and chairs. A single condition was conducted in a room with only tables and chairs and with observation capabilities.
- No medical explanation found for pseudo-seizures that began at approximately 13 months of age

Topography of “pseudo-seizures”:

- laying down on furniture or floor
- unresponsive at times
- eyes open
- sometimes talking but reportedly unable to move
- swearing

Frequency: Every 20-60 minutes
Duration: 10’-60’
Possible Antecedents: “being excited”, getting in trouble, demands (particularly physically challenging commands), when there is a threat of a storm
Typical consequences: ignoring and reprimanding for swearing
Additional behavior concerns: impulsivity and noncompliance

Dependent Measure

- Duration of pseudo-seizures: time began when Bryan’s back contacted furniture or floor. This was only reliable indicator of “pseudo-seizure”.

Design

- Multi-element
- Conditions: Escape, Attention, Alone, Control

Procedure

Conditions: Each of 4 conditions were run for 25 minutes.
A. Escape
- Demands for physical activity (e.g. skipping, jumping jacks, marching) were given for 20-30 seconds using verbal commands and physical prompts. If he followed the instruction, he was praised.
  1. During 1st condition, if he had an “episode”, demands were repeated for 20-30 seconds every two minutes. Throughout entire condition, a demand was placed every two minutes. Examples of verbal demands included, “I need you to do 10 jumping jacks. Come on, it’s really important for you to do these.” No other attention was provided beyond demands being placed and praise for compliance.

B. Attention
- Participant had free access to leisure materials. Participant was told “You can play, but I have work to complete, so I can’t talk to you. I’ll let you know when I am done.” He was ignored throughout the condition, if he was NOT having an episode. If he tried to gain attention, he was reminded briefly that the graduate student had work to complete.
  1. During 1st condition, if he had an “episode”, he was given verbal and physical attention for 20-30 seconds every two minutes during the “episode”. Examples of verbal attention included, “Are you having an episode? Is there anything I can do for you? It must be hard for you to have to lay there and not be able to move. I bet at school it’s hard to see other children have fun when you can’t move.”
  2. During the 2nd and 3rd condition, if he had an episode, he was given attention every minute.

C. Alone
- Room was devoid of stimulating materials (e.g., adult magazines/books). He was instructed to stay in the room for awhile and we would come get him when it was time to leave the room.

D. Control
- In a room with leisure materials available. During this condition, access to all potential reinforcers available.
  1. During the 1st condition, attention was provided every two minutes in the form of comments or praise statements unrelated to pseudo-seizures. No questions or commands given during this time. If he recruited attention, he was given attention. All attention was given from table.
  2. Modification made to control for condition 2 and 3. Graduate student played on floor entire session.

Condition order: C, A, B, D; D, A, C, B; A, B, C, D

Results

Discussion

- Strong evidence that some seizures under operant control
- Multiple functions with demands being the most probable condition to evoke “pseudo-seizure”
- Challenges to FA with duration as DV: running long conditions, making changes to protocol, ensuring integrity of procedure for 25 minute conditions, having enough time to run enough conditions to produce stability, conducting in PCP clinic setting (limited time, space, tolerance)

References