

## THE EFFECTS OF ESTABLISHING OPERATIONS ON FUNCTIONAL ANALYSES CONDITIONS

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A functional analysis was performed on a five-year-old nonverbal Autistic female with severe self-injurious behaviors. The self-injurious behaviors (hand-to-head, hand-to-jaw, hand-to-face) and loud vocalizations were targeted. Two types of sessions, enriched environment and instructor controlled preferred stimuli, were alternated throughout the functional analysis.

Keywords: Functional analysis, establishing operations, autism, self-injury

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### Introduction

Much of the research on establishing operations and functional analyses that has been conducted has focused on setting events such as deprivation and satiation (Iwata, Smith, & Michael, 2000). The correlation between intensity and frequency of self-injury and deprivation and satiation of attention, escape, and tangibles as reinforcement is that the intensity and frequency does increase in the respective cases (e.g., Worsdell, Iwata, Conners, Kahng, & Thompson, 2000; Fischer, Iwata, Worsdell, 1997). The purpose of this study was to determine the maintaining variable of the loud vocalizations and self-injury and whether or not attention as an establishing operation had an effect on frequency of the behavior. A similar study was conducted (Ringdahl, Winborn, Andelman, and Kitsukawa, 2002) to determine the effects of noncontingent attention as reinforcement during a functional analysis targeting self-injurious behavior (SIB). The results of that study yielded that the subject's self-injurious behaviors were elevated during the condition in which no other stimuli was available except for the therapist's attention. This was opposed to the control condition in which the therapist's attention and alternative stimuli were available continuously. In this study attention was targeted as an establishing to gain access to tangibles and to escape tasks.

### Method

#### *Subjects and Setting*

One non-verbal female, age 5, served as the subject. Kaitlyn was enrolled in a public school district and was homebound for most of the school year. Before the functional analysis was conducted Kaitlyn was receiving approximately 1-2 hours of services at home, which involved mostly reinforcer pairing by the special education instructor. Kaitlyn functioned on an eighteen month level and engaged in high rates of severe self-injury (hand-to-head, hand-to-jaw, hand-to-face, hand-biting). Kaitlyn also had no self-help skills and could not perform the function of turning on a television.

#### *Procedure*

The conditions controlled for during the functional analysis are described below:

1. Control Condition- Noncontingent therapist attention and preferred stimuli.
2. Attention Only Condition- 15 seconds of therapist attention for target behaviors.
3. Attention-Enriched Condition- Noncontingent access to preferred stimuli and 15 seconds of therapist attention for target behaviors.
4. Divided Attention Only Condition- 15 seconds of therapists' attention for target behaviors.
5. Divided Attention-Enriched Condition- Noncontingent access to preferred stimuli and 15 seconds of therapists' attention for target behaviors.
6. Alone Only Condition- Client remained alone with no preferred stimuli during this condition.
7. Alone-Enriched Condition- Client remained alone with Noncontingent access to preferred stimuli.
8. Tangibles Condition- Access to preferred items for 15 seconds for target behaviors.
9. Escape Condition- Escape room task for 15 seconds for target behaviors.

Each session controlled for a different condition. There were 15 sessions and each lasted 10 minutes. A control condition was run initially, followed by the attention only and attention-enriched conditions, respectively. A second control condition was run, then divided attention, divided attention-enriched, control, alone only, alone-enriched, control, 2 tangibles sessions, escape, tangibles, and divided attention.

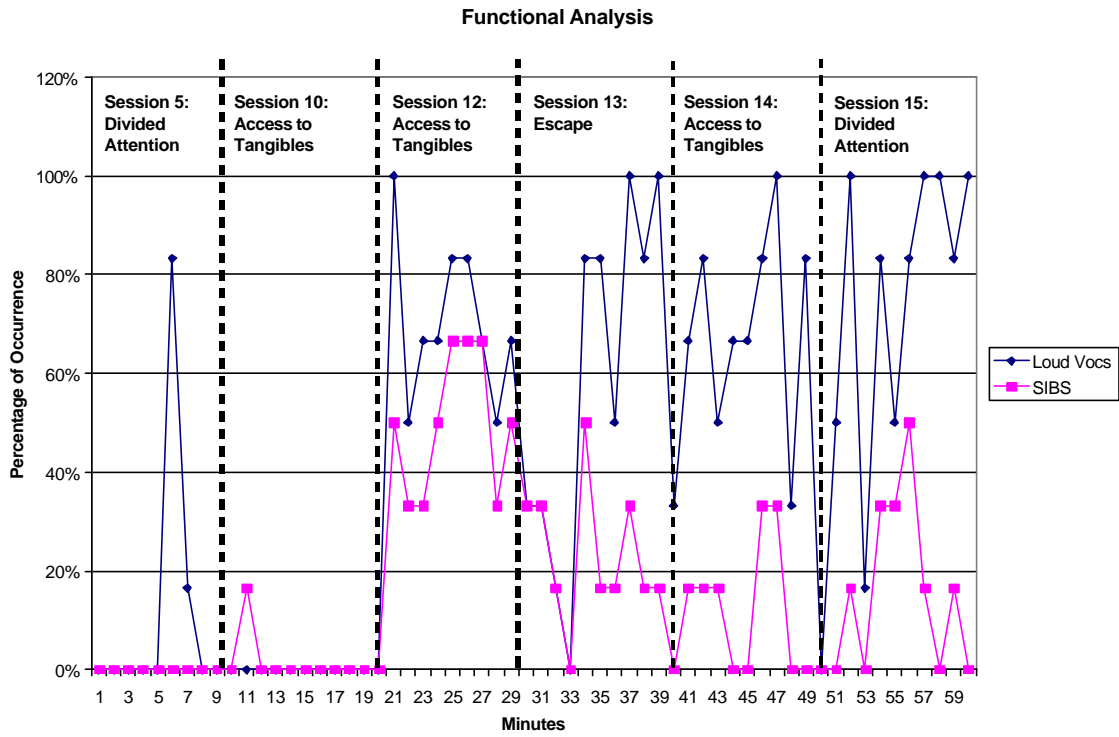
#### *Interobserver Agreement*

All 15 sessions were videotaped by the writer so the alone conditions could be viewed since there was no two-way mirror available. The videotape was then viewed by the writer and another observer. For sessions 1-4 no interobserver agreement data was taken, as there were no occurrences of the two target behaviors. Mean interobserver agreement was 98% for loud vocalizations (range, 88% to 100%) and 97% for SIB (range, 85% to 100%) for sessions 5-15. The effect on the establishing operation on the functional analysis conditions was evaluated by a multiple treatment reversal design.

#### **Results and Discussion**

During the first four sessions no occurrences of loud vocalizations or SIB were observed. The first occurrence of loud vocalizations happened during the fifth session (divided attention, non-enriched; see figure 1). There were only six occurrences of this

behavior and zero occurrences of SIB during this session. Again, there were no occurrences of loud vocalizations or SIB during sessions six through nine and session eleven. During the second ten-second interval of session ten (see figure 1), Kaitlyn engaged in SIB one time. This was a control session for tangibles, so the television was turned on prior to beginning of the session. The television, however, was tuned to the wrong television show (Kaitlyn only watches certain cartoons) and Kaitlyn engaged in the SIB to gain access to her preferred show.



(Fig. 1)

Beginning with session twelve and continuing through to session fifteen, we saw a dramatic increase in both SIB and loud vocalizations (see figure 1). These sessions were no longer enriched and the writer controlled for access to tangibles, escape from tasks, and divided attention.

The only types of potential communication observed of Kaitlyn during the functional analysis were the loud vocalizations and SIB. These never occurred during the alone conditions, the hypothesis being that there was no one in the room from whom she could gain attention, to gain access to the television. There were also no occurrences of either target behavior during the control sessions, except session ten which was explained above. Again, no target behaviors were observed during the enriched sessions and we hypothesize that this was due to the fact that Kaitlyn had noncontingent access to the preferred stimuli (television).

The frequent occurrences of loud vocalizations and SIB were observed in sessions twelve through fifteen. There was at least one person present in the room from whom Kaitlyn could gain attention in all four sessions (three persons in session 15). In sessions twelve and fourteen Kaitlyn had to engage in SIB and/or loud vocalizations in order to gain access to the preferred stimuli. In session thirteen Kaitlyn was given a task demand (putting a block in a bucket) and was only allowed to escape the task if she engaged in either or both of the target behaviors. In session fifteen Kaitlyn only received therapists' attention when she engaged in the target behaviors. During this particular session Kaitlyn was not given her preferred stimuli and she engaged in one or both of the target behaviors for all but fourteen of the sixty 10-second intervals, the most of any of the sessions.

Based on the data collected it can be concluded that attention from other persons is an establishing operation for loud vocalizations and SIB. Kaitlyn did not engage in the target behaviors when there was no access to attention. Therefore, she could not access the preferred stimuli if there was no one to provide it. She also had no need to engage in the target behaviors during the enriched sessions because she already had access to the preferred stimuli.

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