Teaching functional gesture use to children with autism
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Introduction

• Gesture impairment is a core deficit in Autism Spectrum Disorders.
• Few studies have evaluated functional gesture instruction for children with autism.
• Research Question: Can functional gesture use be taught to multiple discriminative stimuli (SD’s) through discrete trial training procedures?

Method

• Participants:
  – Ezra, 7 y.o., language=verbal and some gestural requests
  – Lenny, 4 y.o., language=verbal and some gestural requests
  – Miles, 8 y.o., no verbal communication, limited gesture use, aberrant behavior with hypothesized communicative function
• Design: Multiple baseline across gestures replicated between subjects.
  – First four sequentially introduced gestures included in study
• Dependent variable: unprompted gestures meeting response definition
  – Data collected in situ by instructional staff
  – Inter-observer agreement (IOA) assessed from video
    • Mean=87%, range [83-91] on 25% of sessions
  – Independent variable: discrete trial gesture training
    • Treatment integrity (from video) mean=82%, range [66-95%] on 21% of sessions.
    • IOA on treatment integrity mean=95%, range [93-96%] on 21% of sessions.
• When ≥80% correct across 3 consecutive sessions with 2 therapists, SD’s were varied.

Results

Percentage Non-Overlapping Data (PND); Scruggs et al., 1987
Reverse Percentage Zero Data (rPZD); Scotti et al., 1991
Ezra (Figure 1): Mean PND=78.2%, Mean rPZD=57.8%
Miles (Figure 2):Mean PND=88.3%
Mean rPZD=51%
Lenny (Figure 3):Mean PND=51%
Mean rPZD=26%

Discussion

• All participants learned and generalized gestures to multiple staff, SD’s, and settings
• Functional gesture use could provide a functional communication system with low response effort that might reduce problem behavior
• Limitations:
  – Study sample included verbal and non-verbal participants, some gestures may not be functional for children with verbal abilities
  – Variability in staff implementation of generalization phases
  – No treatment integrity data generalization
• Future work
  – Replicate with all non-verbal participants
  – Structured implementation of generalization phases

Figure Caption: Open data points denote probes (only one trial per session), grey data points denote probes performed by parent. Gestures introduced simultaneously are displayed on the same panel and denoted by different-shaped markers. Arrows show revisions to teaching procedures or changes due to programming for generalization.

References