

Teaching functional gesture use to children with autism

Jamie M. Waldvogel, John D. Hoch, Nancy Schussler,

Jacqueline Harth, & James O'Neill

Behavioral Dimensions Minneapolis, MN

Introduction

- Gesture impairment is a core deficit in Autism Spectrum Disorders.
- Few studies have evaluated functional gesture instruction for children with autism.
 - Buffington et. al (1998) evaluated conversational gesture instruction using discrete trial training procedures.
- Research Question: Can functional gesture use can 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 $\geq 80\%$ correct across 3 consecutive sessions with 2 therapists, SD's were varied.

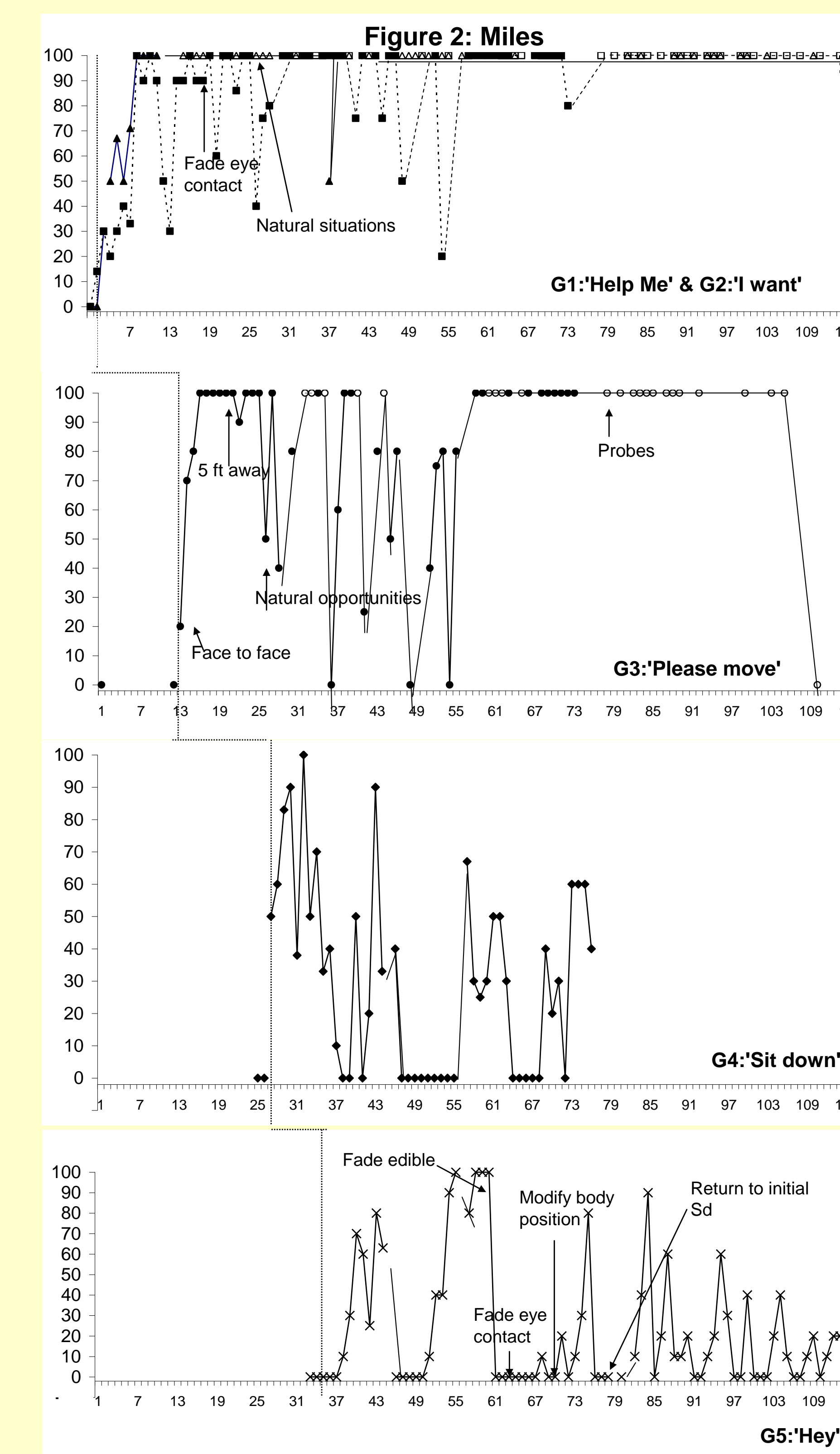
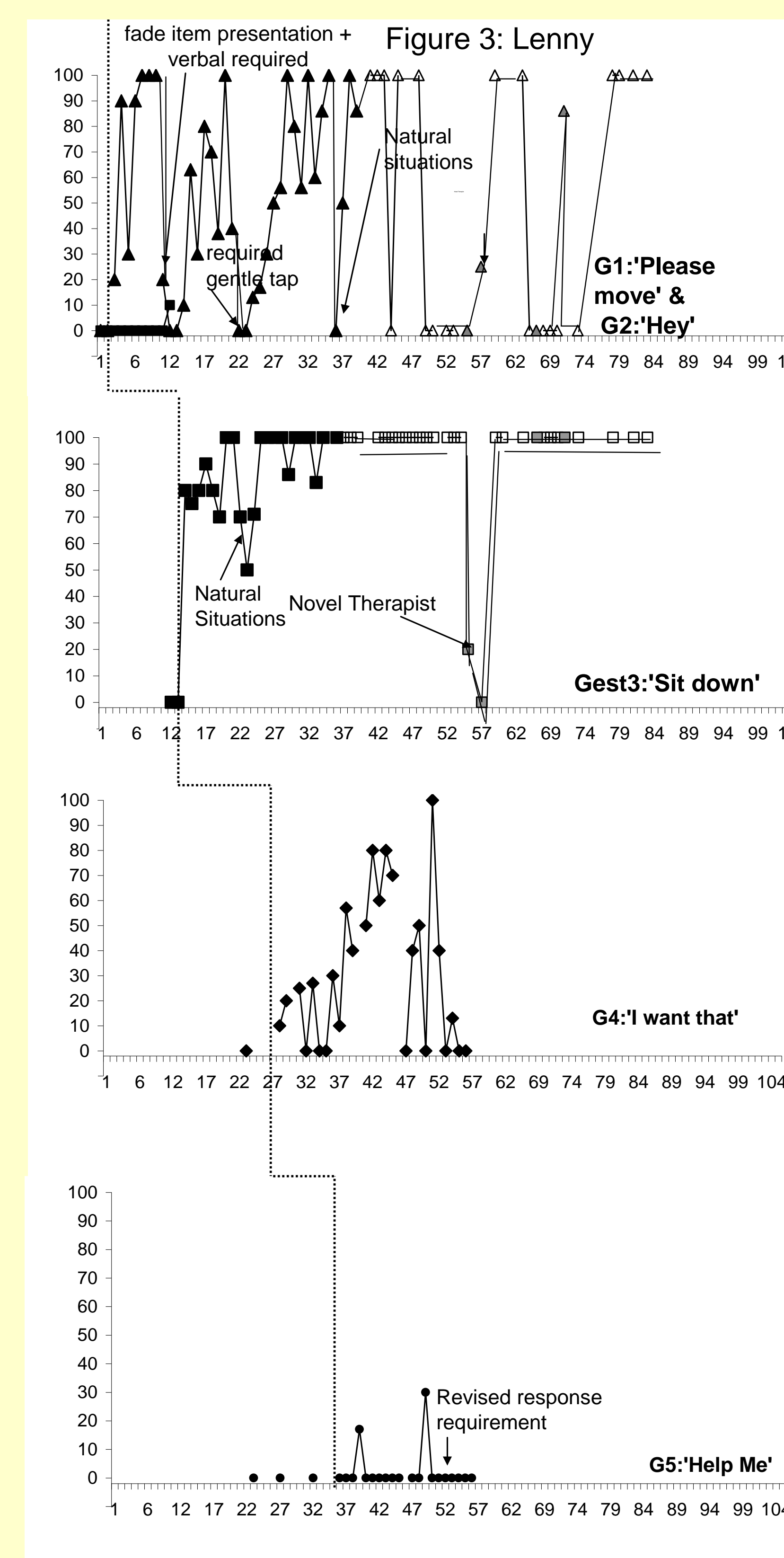
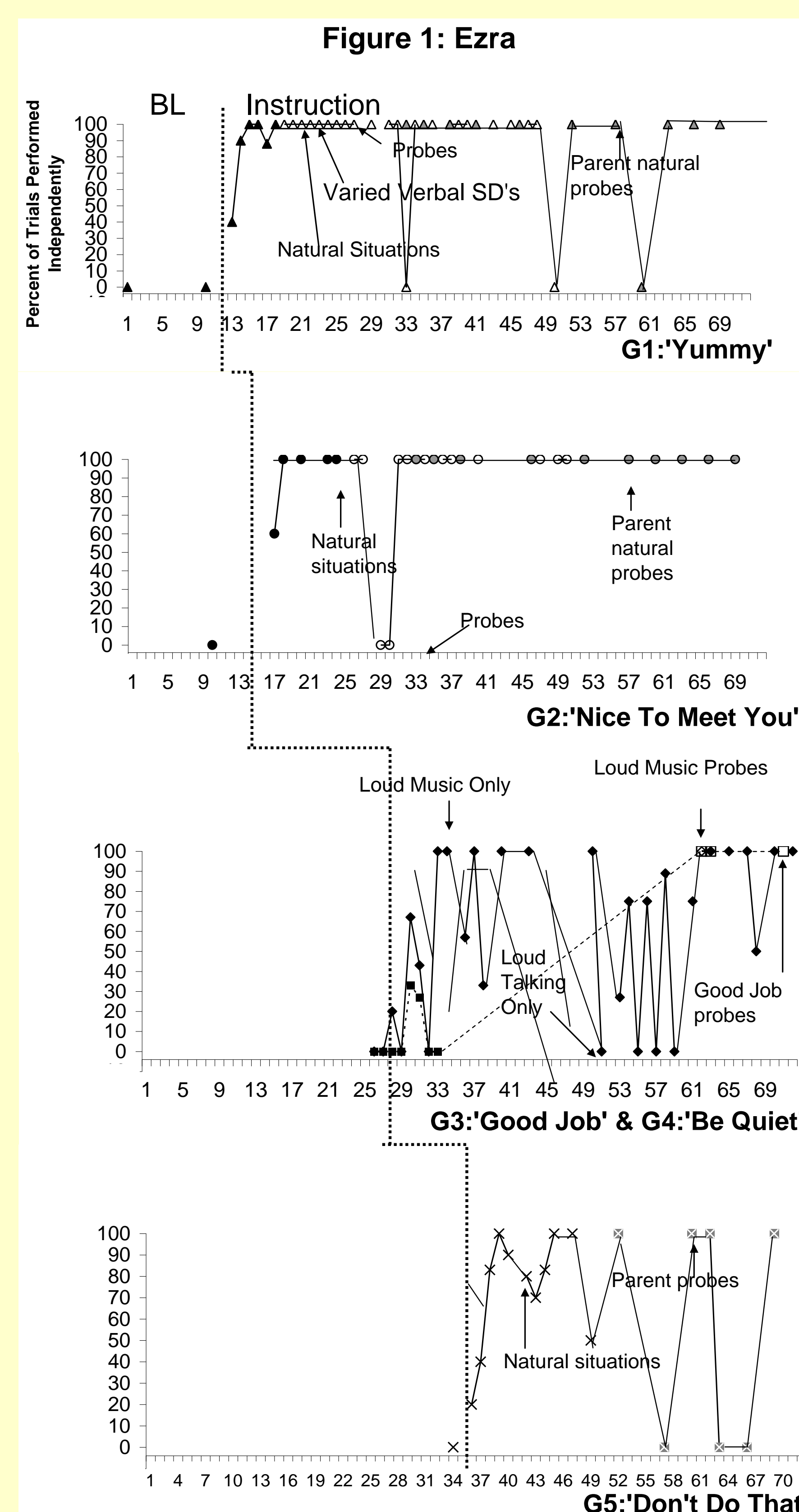


Figure Caption: Open data points denote probes (only one trial per session), grey data points denote probes performed by parent. Gestures introduced simultaneously are displayed on the same panel and denoted by different-shaped markers. Arrows show revisions to teaching procedures or changes due to programming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

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

References

- Buffington, D.M., Krantz, P.J., McClannahan, L.E., & Poulson, C.L. (1998). Procedures for teaching appropriate gestural communication skills to children with autism. *Journal of Autism and Developmental Disorders, 28*(6), 535-545.
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