

A parametric evaluation of the differential reinforcement of alternative behavior procedure (without Extinction)

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Problem behavior

- Problem behavior
- Assess problem behavior
- Treat problem behavior
- Differential reinforcement of alternative behavior (DRA) + Extinction (EXT):
 - Fisher et al., 1993
 - Hagopian et al., 1998

Extinction: Not always viable

- Problem behavior (such as SIB or aggression) has the potential to cause severe harm to the individual engaging in the behavior and/or others who are working with that individual
- The size or strength of individual precludes its consistent implementation
- Social constraints
- Risk outweighs benefit

Introduction cont.

○ DRA without EXT

- Lalli & Casey, 1996
- Piazza et al., 1997
- Vollmer, Roane, Ringdahl & Marcus, 1999
- Worsdell, Iwata, Hanley, Thompson & Kahng, 2000

Purpose

- To evaluate a variation of DRA:
 - Experiment 1: higher **quality** reinforcer following appropriate behavior relative to lower quality reinforcer following problem behavior
 - Experiment 2: longer **duration** reinforcement following appropriate behavior relative to shorter duration following problem behavior
 - Experiment 3: more **immediate** reinforcement following appropriate behavior relative to a delay to reinforcement following problem behavior
 - Experiment 4: put them all together

Method: Setting & Sessions

- Sessions were conducted on an outpatient clinical unit
- Sessions were conducted in a 3 m x 3 m room that contained a one-way mirror and sound monitoring
- Session rooms contained materials necessary for a session, which could include furniture, toys, a picture communication card, or task related materials.

Method: Setting & Sessions cont.

- Sessions were 10 min in duration
- Approximately 8-16 sessions were conducted daily, with a 5-10 min (maximum 1.5 hr) break between each session

Method cont.

- Paired stimulus preference assessments (Fisher et al., 1992)
- Functional analyses: Attention, Tangible, Escape, Ignore, Toy play (Iwata, Dorsey, Slifer, Bauman, and Richman, 1982/1994; Day et al., 1988)
- Parametric treatment analyses

Method Cont.

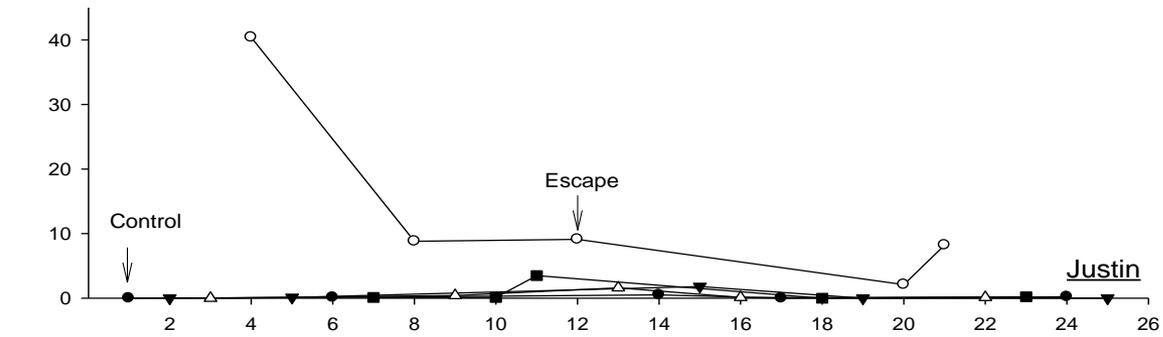
- Treatment Analysis:
 - Baseline: problem and appropriate behavior reinforced according to equal concurrent variable-interval (VI) 20 s schedules (range, 1 - 40 s)
 - Treatment: Equal concurrent VI 20 s schedules continued, with appropriate behavior resulting in more immediate, longer duration, or higher quality reinforcement relative to problem behavior

Interobserver Agreement

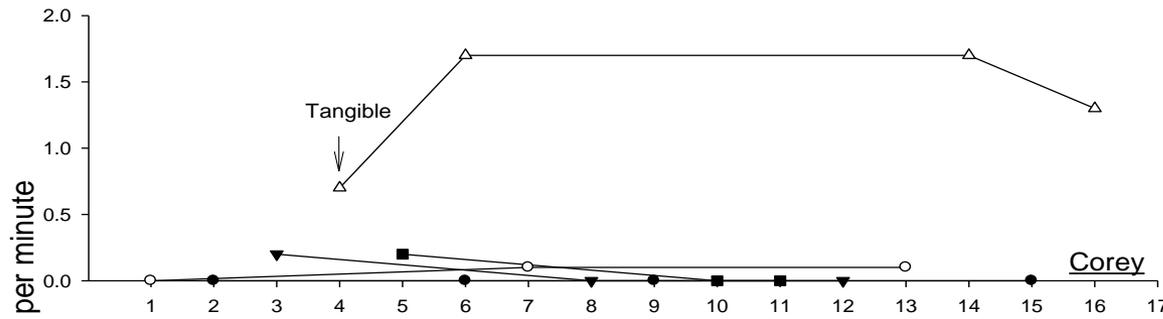
- Percent sessions with IOA collected: 35-44% per participant
- Average IOA Score: Above 92% for each participant



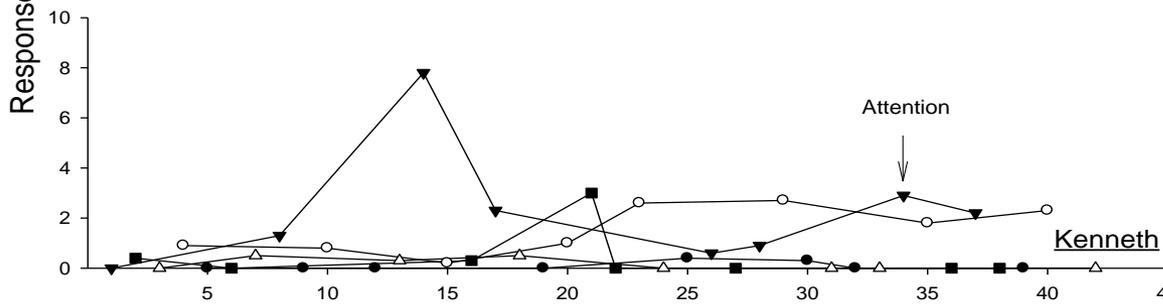
Experimental Analyses of Problem Behavior



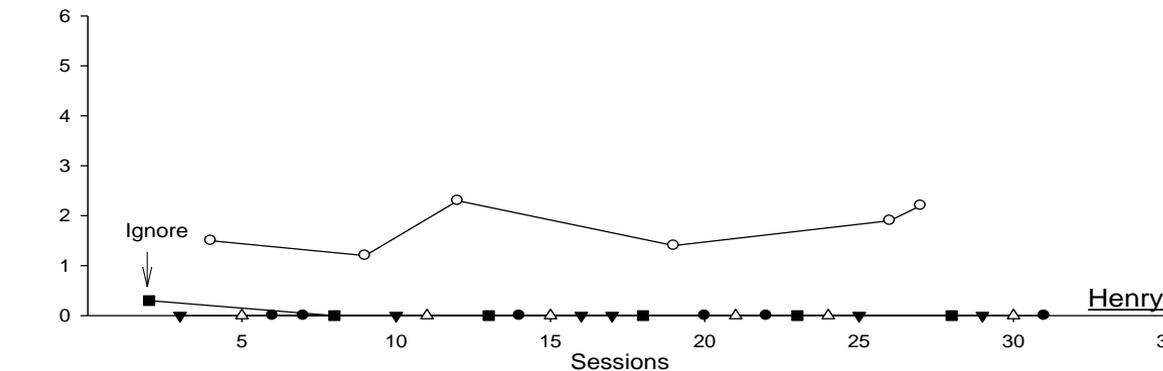
Escape



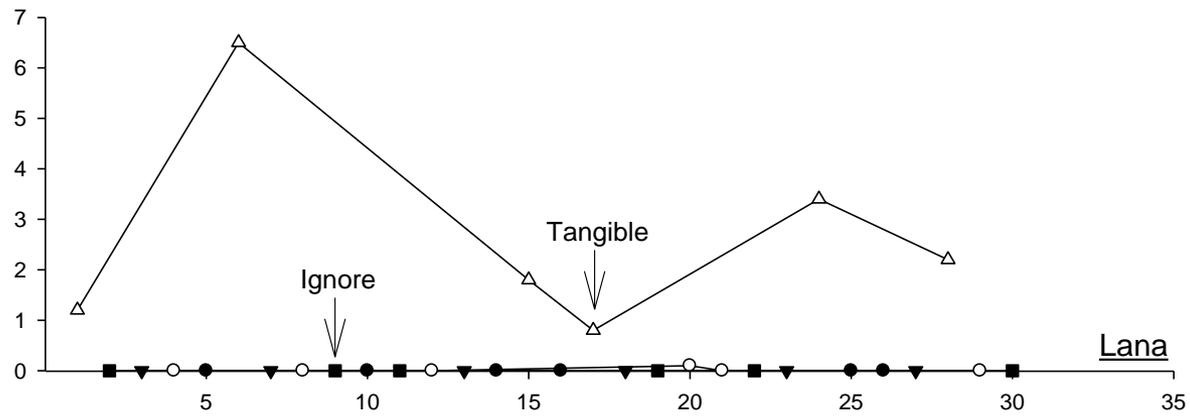
Tangible



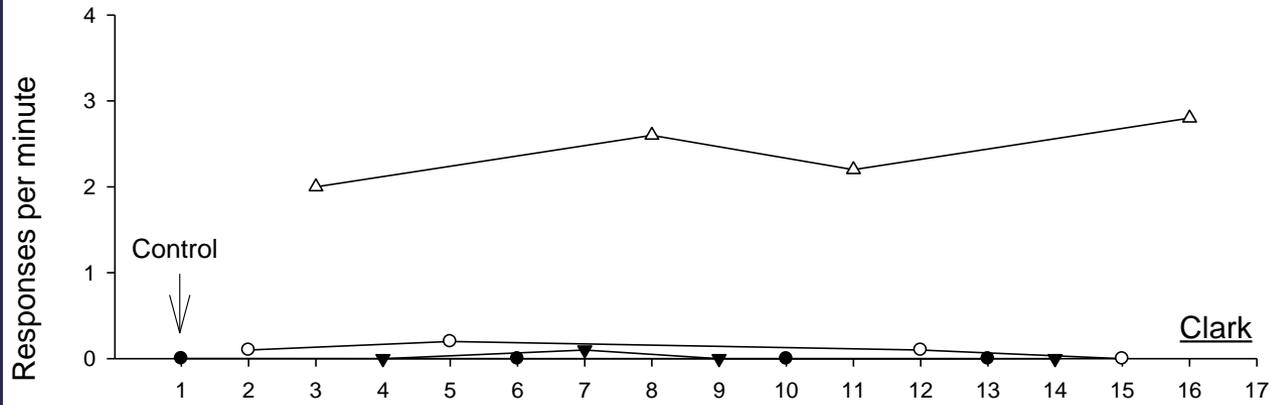
Escape +
Attention



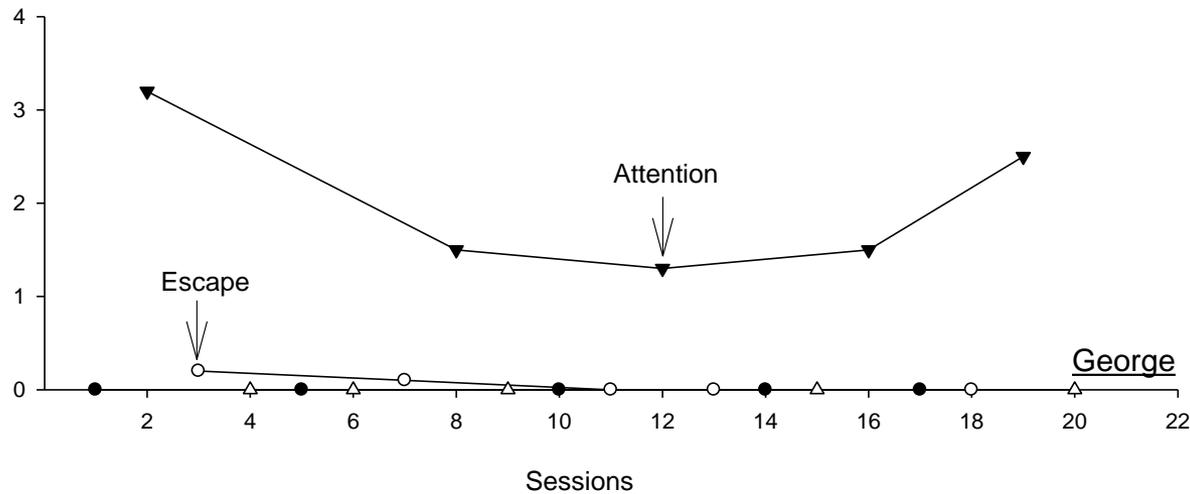
Escape



Tangible



Tangible



Attention

Experiment 1: Quality Analysis

- Higher quality reinforcement following appropriate behavior
- Lower quality reinforcement following problem behavior

Participant 1

○ Justin:

- Age: 7 years
- Diagnosis: ADHD
- Problem behavior: aggression, disruption, & inappropriate sexual behavior
- Appropriate behavior: compliance

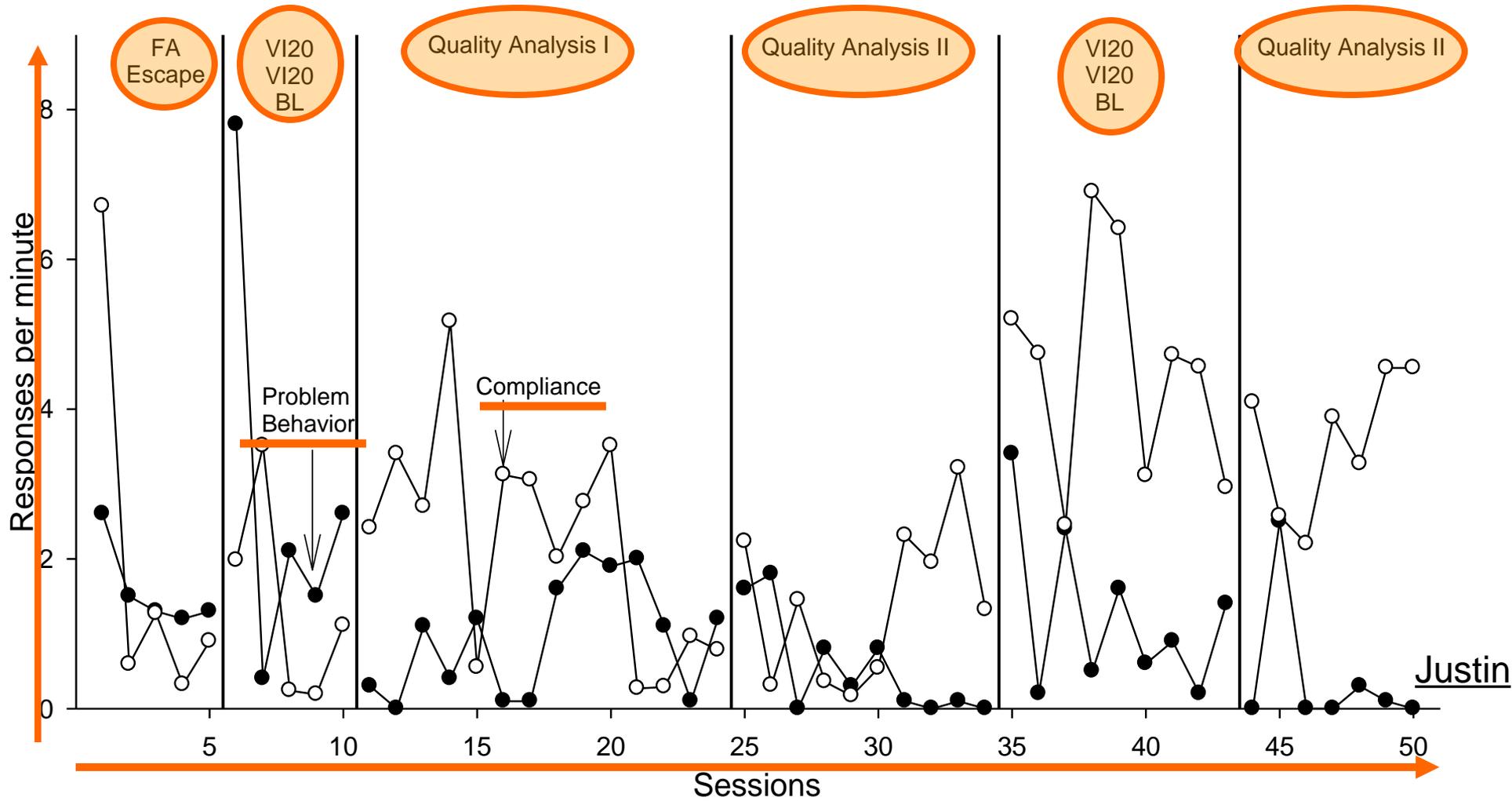
Quality Treatment Analysis: Justin

○ AB: Compliance

- BL: 30 s break
- TX:
 - 1 high preferred toy + 30 s break
 - 3 high preferred toys + 30 s break

○ PB: Agg& Dis & ISB

- BL: 30 s break
- TX:
 - 1 low preferred toy + 30 s break
 - 1 low preferred toy + 30 s break



Experiment 2: Duration Analysis

- Longer duration reinforcer following appropriate behavior
- Shorter duration reinforcement following problem behavior

Participant 1

○ Lana:

- Age: 5 years
- Diagnosis: Autism
- Problem behavior: aggression
- Appropriate behavior: mand for a toy

Duration Treatment Analysis: Lana

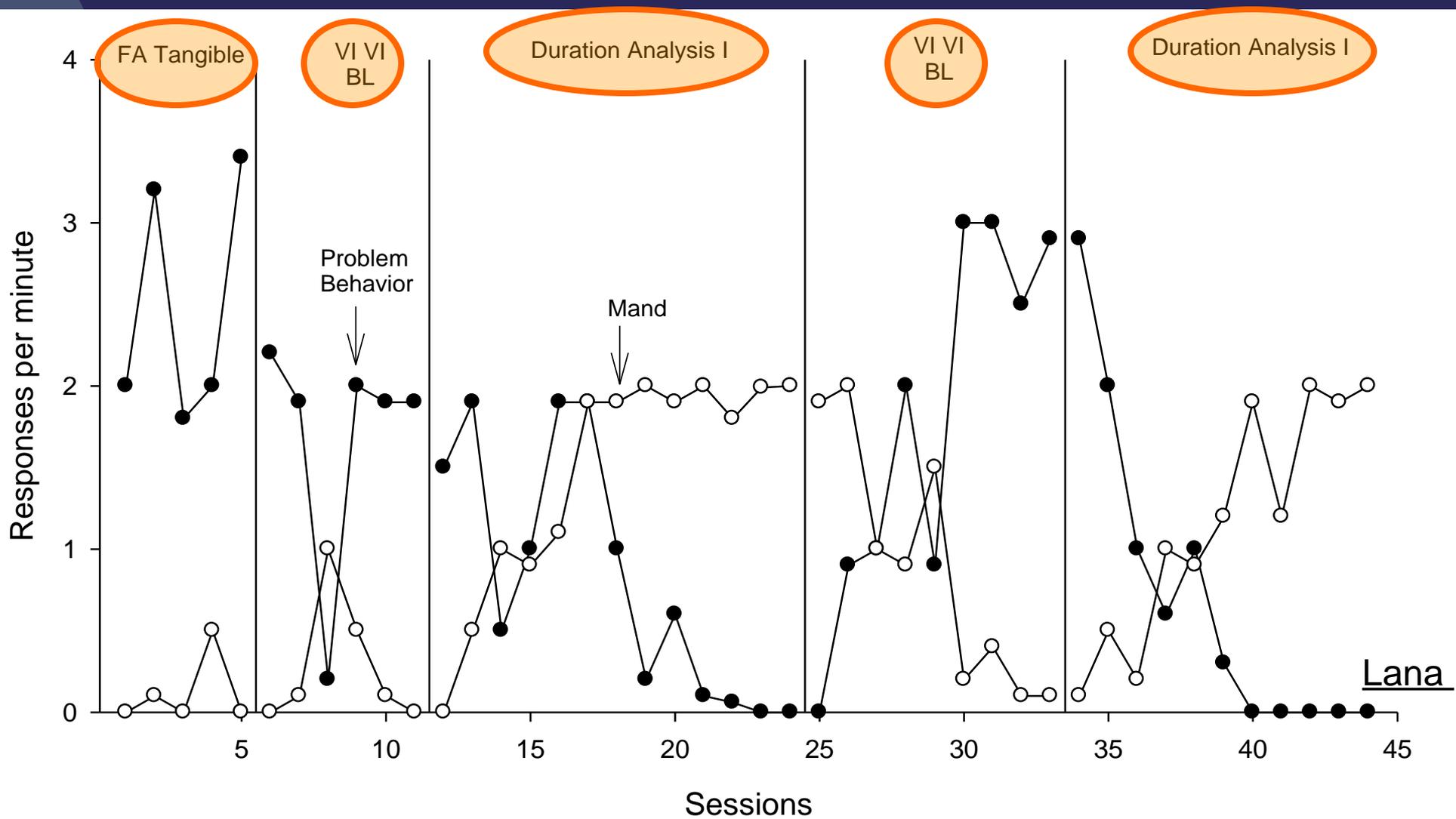
○ AB: Mands

- BL: 30 s access
- TX:
 - 30 s access

○ PB: Aggression

- BL: 30 s access
- TX:
 - 10 s access





Experiment 3: Delay Analysis

- Immediate reinforcement following appropriate behavior
- Delay to reinforcement following problem behavior

Participant 1

○ Henry

- Age: 8 years
- Diagnosis: Autism
- Problem behavior: aggression & disruption
- Appropriate behavior: Communicative request for a break from working

Delay Treatment Analysis: Henry

○ AB: Communication

- BL: immediate 30 s break

- TX:

- Immediate (0 s)
+ 30 s break

- Immediate (0 s)
+ 30 s break

○ PB: Agg & Dis

- BL: immediate 30 s break

- TX:

- 30 s delay
+ 30 s break

- 60 s delay
+ 30 s break



Summary and Discussion

- Results of each experiment showed extinction was not a necessary treatment component
- Results replicate and extend previous investigations into the use of DRA procedures without an extinction component

Discussion

- Limitations:

- Difficult to quantify “quality”
- Programmed delays versus obtained delays could vary

- Benefits

- Natural schedules of reinforcement
- Practical

Experiment 4:

- The purpose : Assess each parameter (quality, duration, delay) in combination.
- Assess in more natural environment

Participants

○ George

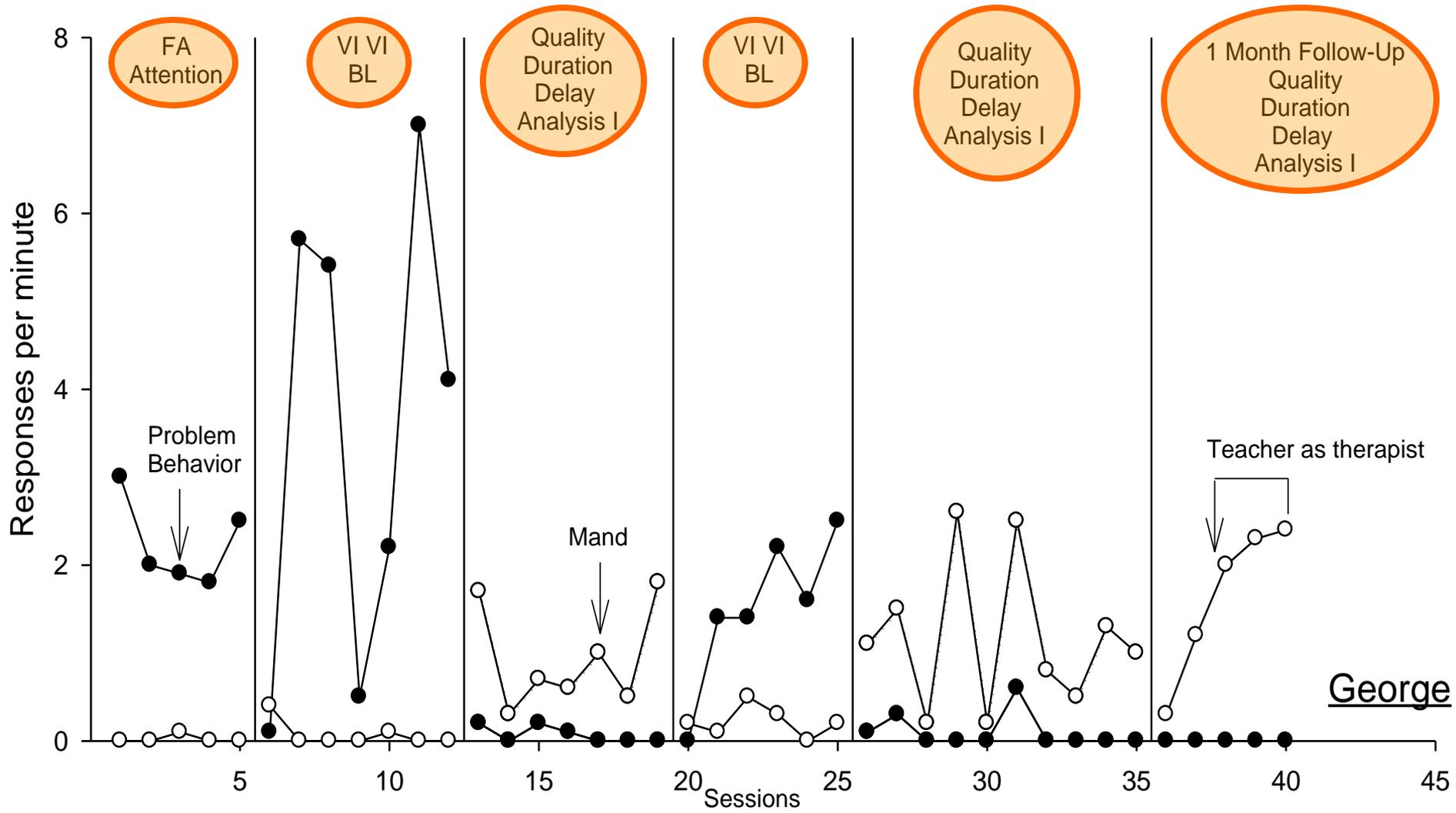
- Age: 10 years
- Diagnosis: Autism
- Problem behavior: aggression & disruption
- Appropriate behavior: Communicative request for attention

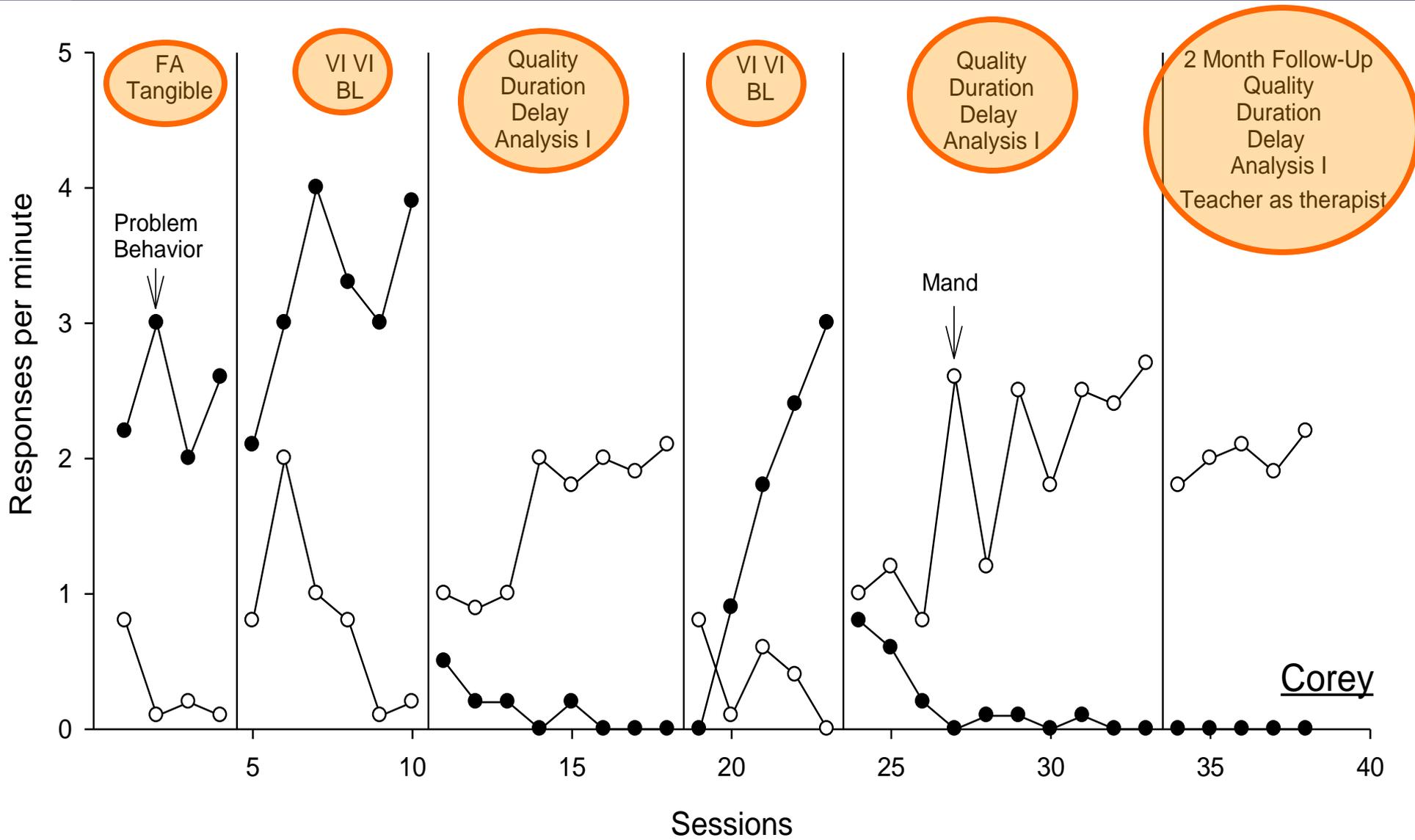
○ Clark

- Age: 12 years
- Diagnosis: Autism.
- Problem behavior: aggression
- Appropriate Behavior: Communicative request for toys

Setting

- Sessions were conducted in the classrooms of each child at their school.
- Materials found in elementary classrooms were present during sessions.
- Trained clinicians and teachers served as therapist.





Discussion

○ Benefits

- Natural environment
- Maintenance and generality
- Effective and ethical

○ Future Research

- Additional research in natural environments
- Further manipulations of parameters



The End

Questions? 😊