Meaningful Solutions for Problem Behavior Associated With Autism

Presented by

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IMAGINE
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Many thanks to my
Functional Assessment and Treatment
Research and Practice group
(2012-present):

Laura Hanratty, Nick Vanselow, Sandy Jin, Joana Santiago,
Mahshid Ghaemmaghami, Joshua Jessel, Jessica Slaton, Ellen Gage,
Robin Landa, Christy Warner, Shannon Ward, Tanya Mouzakes,
Adithyan Rajaraman, Holly Gover, Kelsey Ruppel,
Cory Whelan, David DePetris, Rachel Metras,
Kara LaCroix, & Emily Sullivan

The Problem

- Problem behavior is prevalent among children with autism and is sometimes severe and intractable

- Many "solutions" often exacerbate or prolong the problem
  - Behavior modification
  - Behavior medication
  - Behavior mollification
  - Behavior micro-analysis
  - Behavior remediation without developing a replacement repertoire

Powerful Working Assumption

If problem behavior is occurring with regularity…..

- ▫ it is being reinforced
  - Even when important biological/medical factors are known or suspected

Antecedent	→ Behavior	→ Consequence
Establishing operation	→ Problem Beh.	→ Reinforcement
Mom attends to Sibling	Throwing toys	Mom's attention
Dad instructs to turn off iPad	SIB	Dad gives a little more time on iPad

This is the "**one thing at a time**" model
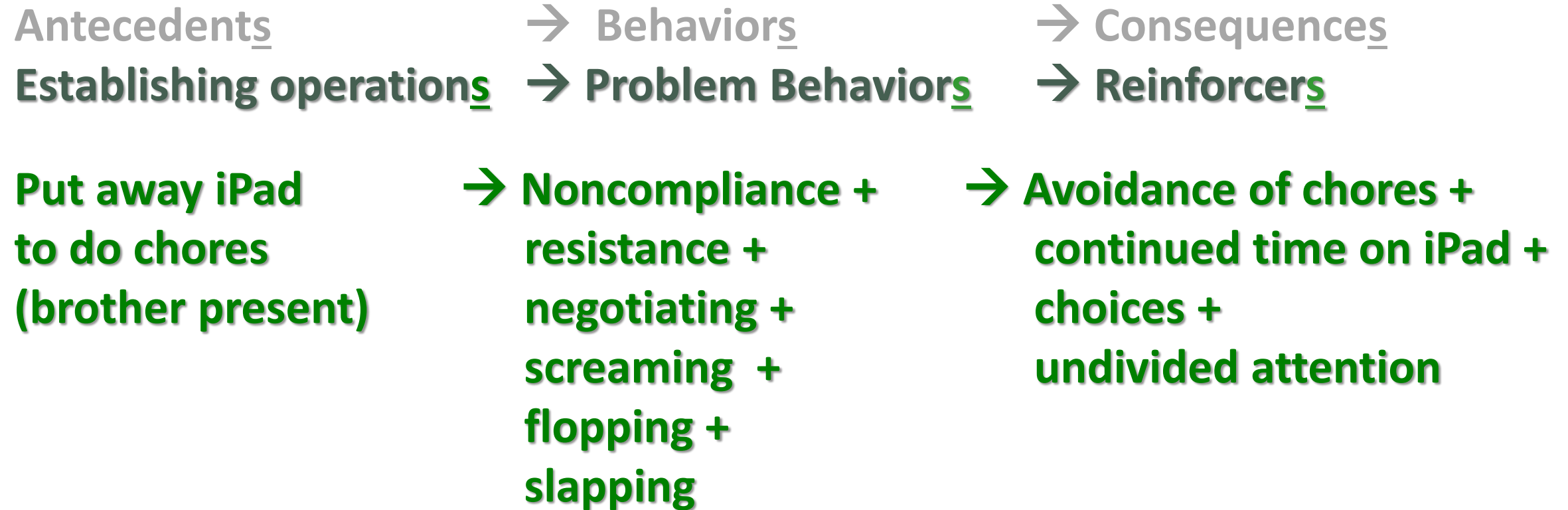Or the traditional model of relying on **isolated reinforcement contingencies**

"New" Assumptions

Multiple events co-occur to evoke problem behavior

Multiple events occur simultaneously to reinforce (strengthen) problem behavior

Different forms of problem behavior of the same child are often maintained by the same **synthesized reinforcement contingency**

The "many things at a time" model of a reinforcement contingency:

Antecedents → Behaviors → Consequences

Establishing operations → **Problem Behaviors** → **Reinforcers**

Put away iPad → **Noncompliance +** → **Avoidance of chores +**
to do chores **resistance +** **continued time on iPad +**
(brother present) **negotiating +** **choices +**
screaming + **undivided attention**
flopping +
slapping

*also known as a **synthesized reinforcement contingency**

Age: 4   Diagnosis: Autism   Language Level: Fluent speech

Synthesized reinforcement contingency
in baseline observation

The **many** things at a time TREATMENT model:

Antecedents	→ Behaviors	→ Consequences
→ **New Skills**	→ **Same reinforcers**

Same establishing operations

Put away iPad to do chores (brother present)

→ **"excuse me"**
Listens to parent
"May I have my way please"
"Okay, no problem"
Complies with multiple instructions and corrections

→ **break from more chores+ time on iPad + choices of activity + some undivided attn**
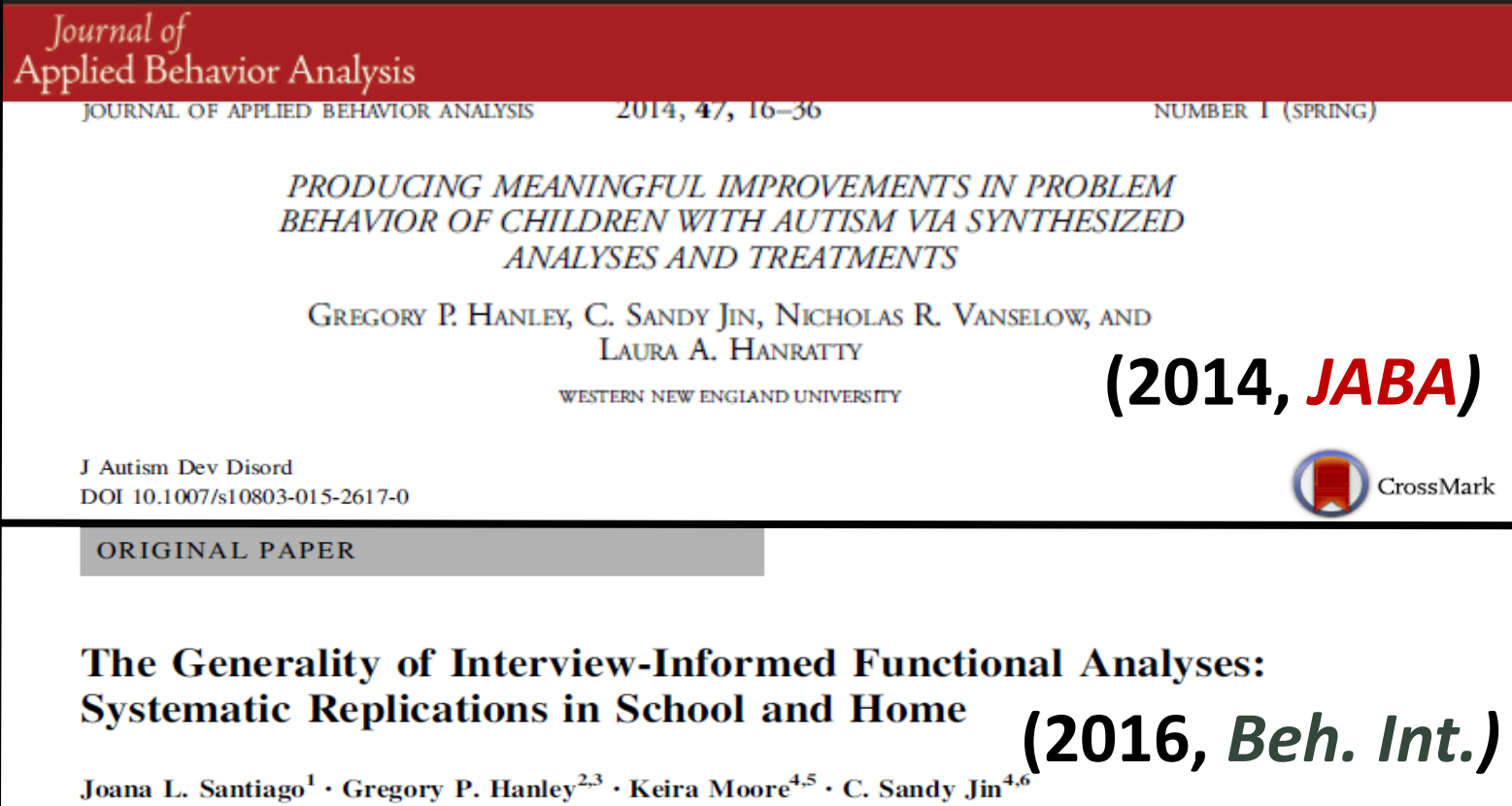
Child / Parent Treatment Observation

Age: 4   Diagnosis: Autism   Language Level: Fluent speech

Synthesized reinforcement contingency
in treatment observation

Effects deemed meaningful by parents and teachers following analysis and treatment involving synthesized reinforcement contingencies

PRODUCING MEANINGFUL IMPROVEMENTS IN PROBLEM BEHAVIOR OF CHILDREN WITH AUTISM VIA SYNTHESIZED ANALYSES AND TREATMENTS

GREGORY P. HANLEY, C. SANDY JIN, NICHOLAS R. VANSELOW, AND LAURA A. HANRATTY

WESTERN NEW ENGLAND UNIVERSITY

(2014, *JABA*)

ORIGINAL PAPER

The Generality of Interview-Informed Functional Analyses: Systematic Replications in School and Home

(2016, *Beh. Int.*)

Joana L. Santiago[1] · Gregory P. Hanley[2,3] · Keira Moore[4,5] · C. Sandy Jin[4,6]

Similar effects reported in these studies from other research groups

Strand & Eldevik (2017, *Beh. Int.*)

Herman, Healy, & Lydon (2018, Dev. Neuro.)

Jessel, Ingvarsson, Metras, Hillary, & Whipple (2018, *JABA*)

Beaulieu, Clausen, Williams, & Herscovitch (2018, *BAP*)

Taylor, Phillips, & Gertzog (2018, *Beh. Int.*)

Chusid & Beaulieu (2019, *JABA*)

Table 2 Social acceptability questionnaire results

Questions	Ratings						Mean
	Karen			Zeke			
	R1	R2	R3	R1	R2	R3	
1. Acceptability of assessment procedures	7	7	7	7	7	7	7
2. Acceptability of treatment packages	7	7	7	7	5	7	6.7
3. Satisfaction with improvement in problem behavior	6	7	7	7	6	7	6.7
4. Helpfulness of consultation	7	7	7	7	7	7	7

	Comfort levels					
	Pre Rx R1	Post Rx	Pre Rx R2	Post Rx	Pre Rx R3	Post Rx
Karen						
1. Taking away preferred items	7	7	3	6	5	7
2. Talking about non-preferred topics	5	6	2	6	4	5
Zeke						
1. Taking away preferred items	3	7	7	7	5	7
2. Taking away preferred items/activities then immediately presenting work	3	7	6	6	3	7
3. Taking away preferred items/activities and attention	3	6	2	5	2	7

Overall mean

Pre	Post
3.9	6.4

7 = highly acceptably, highly satisfied, very helpful, or very comfortable

1 = not acceptable, not satisfied, not helpful, or not comfortable

R2, R2, and R3 denote the three responders including parents and teachers

3. Rate the extent to which you are satisfied with the amount of improvement seen in █████'s meltdowns.

      1   2   3   4   5   6   ⑦

Not Satisfied   Highly Satisfied

Please comment:

Highly Satisfied is an understatement! He has come a long, long way in such a short time.

11. Please provide any additional comments for our team. ████ and I are very happy with how this whole process took place. We both feel our home life and ████'s Quality of life is getting better and better. This was one of the best summers we had with him behavior wise, and best summers over all because of less behaviors. We actually took day trips to CT science museum, Boston Science Museum and Hampton Beach with Ø issues of bad behavior. We feel that without this great program, we wouldn't have even attempted these trips knowing what the usual outcome would have been.

What is involved in a Practical Functional Assessment (PFA) process?

- An open-ended interview (always)

- An informal observation (sometimes)

- A functional analysis (always)
  - An IISCA
    - An Interview-Informed
    - Synthesized Contingency
    - Analysis

Example Case: *Brandon*

The open-ended interview

- *Age:*   3
- *Diagnosis:*   None
- *Language:*   Speaks in short sentences
- *Referred for:* Aggression, meltdowns, noncompliance
- *To:*   Life Skills Clinic (outpatient model) at Western New England University

Mission to identify:

1. the most concerning problem behavior and all other forms of problem behavior that co-occur in the same situations with (or prior to) the most concerning problem behavior

2. the events that seem to co-occur and reliably evoke problem behavior

3. the types of events and interactions that have occurred following problem behavior and are reported to stop the problem behavior

1. **Hitting, kicking, biting, throwing objects, dropping to the floor while crying, refusing to follow parental instructions**

2. **Interrupting his play/game, removing toys (e.g., action figures), seeing others playing with his toys, adult noncompliance with mands, instructions to play differently, to play quietly on iPad, to sit quietly with books, or to clean up toys**

3. **Escape from parental instructions to his toys, parental attention/interaction, and mand compliance**
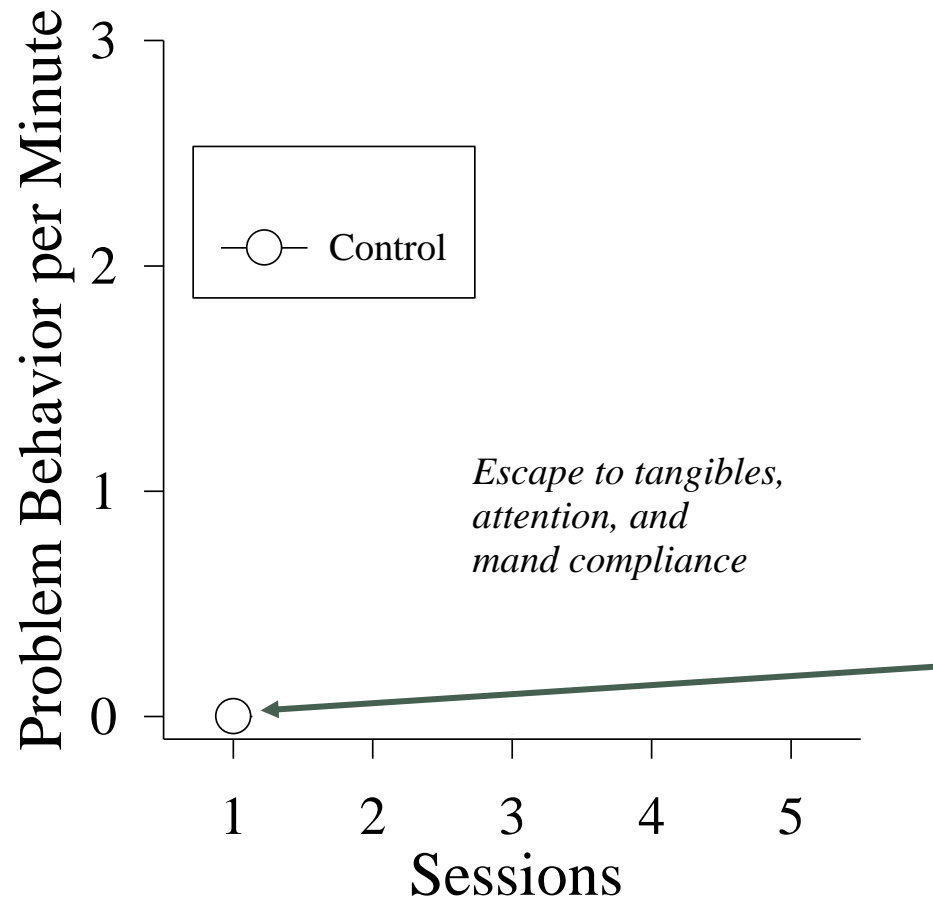
Example IISCA: *Brandon*
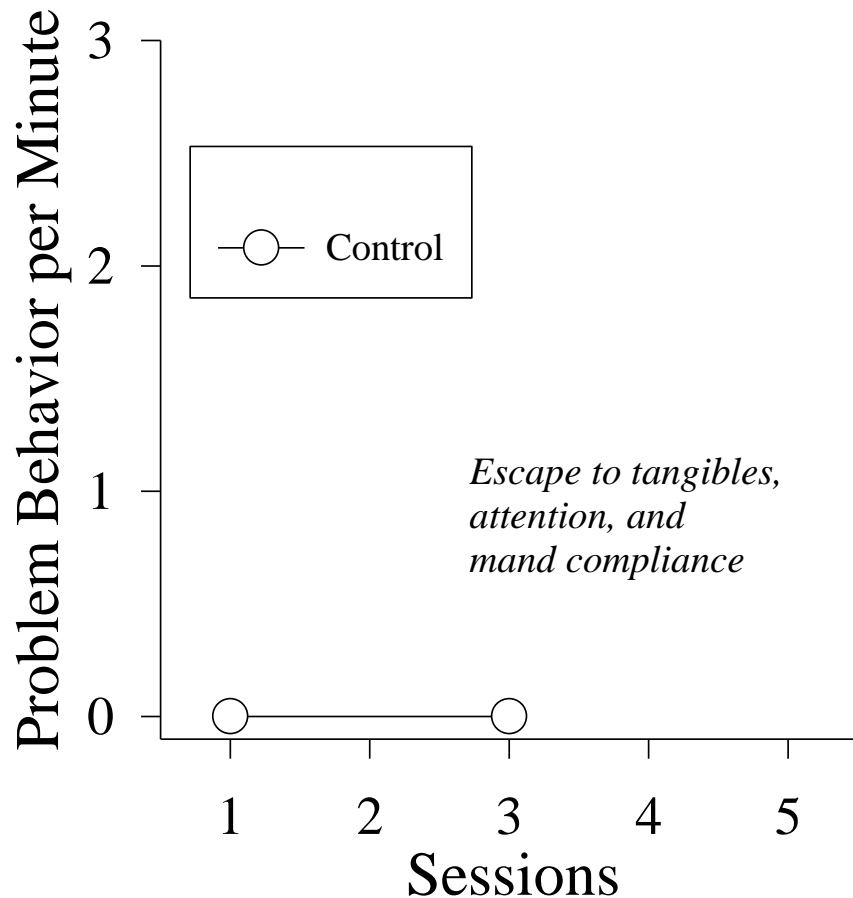
All sessions are repeated at least once

Because replication is the key to believability
(Baer, Wolf, & Risley, 1968)

Note:

There should be no problem behavior in the control sessions, if there is, either repeat or redesign

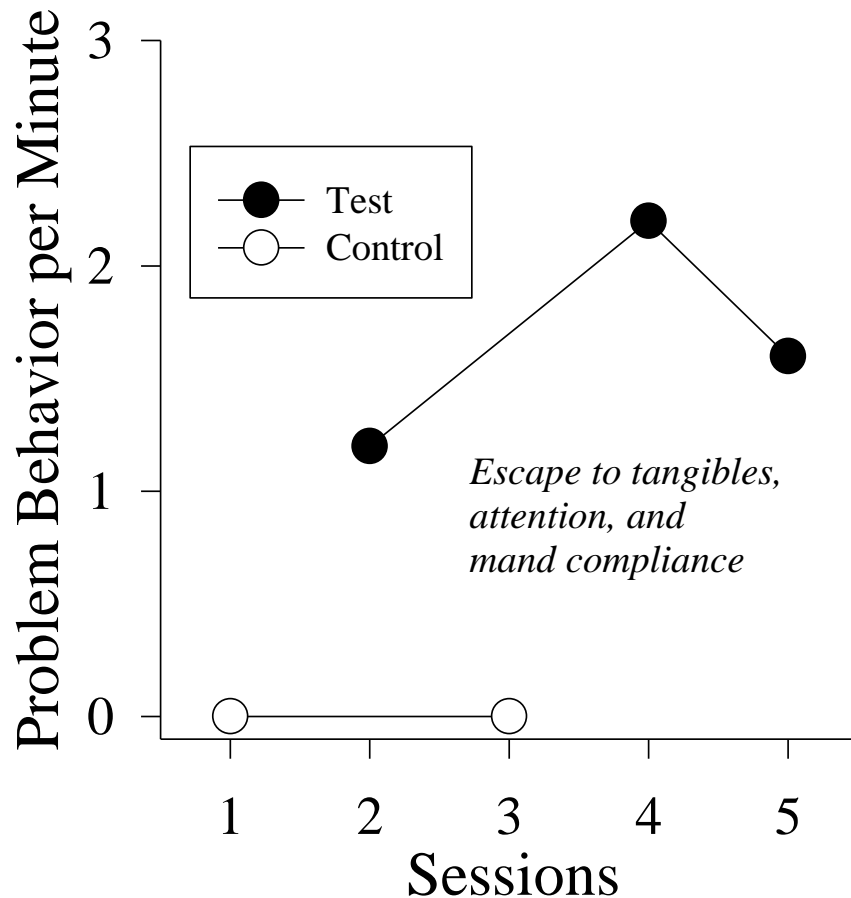*Escape to tangibles, attention, and mand compliance*
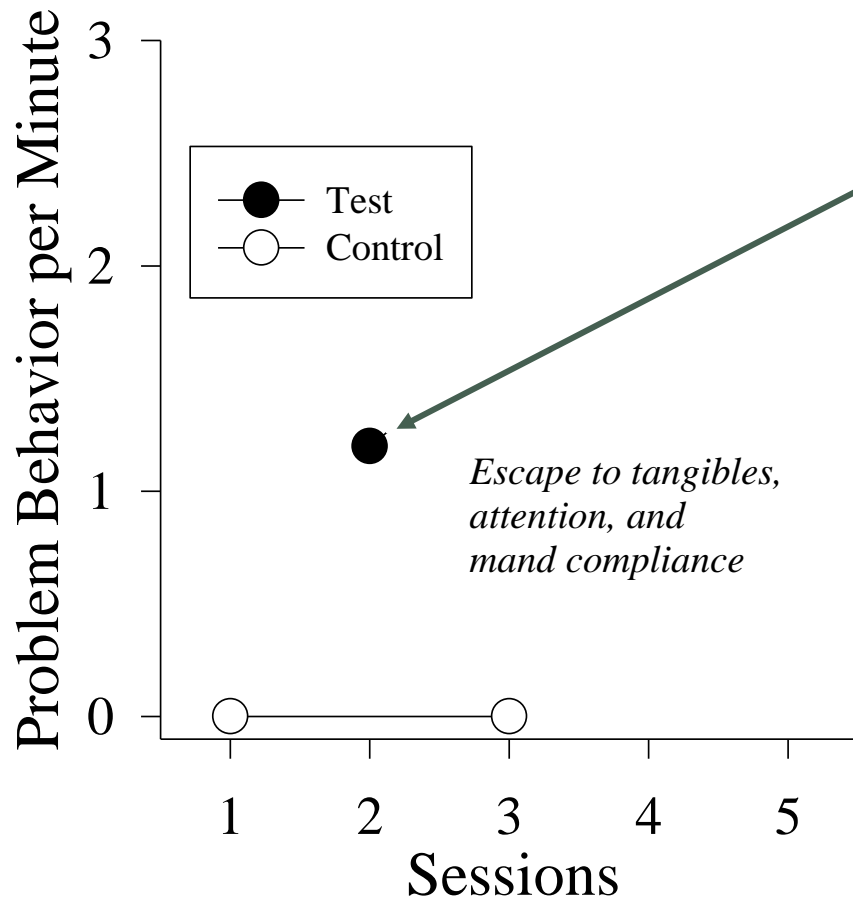
Example IISCA: *Brandon*

Notes:

Test sessions are repeated at least twice

Control and test sessions are alternated to evaluate whether suspected contingency influences problem behavior

Example Treatment: *Brandon*

The skills of **functional communication**, **delay/denial toleration**, and **contextually appropriate behavior** are shaped via intermittent and unpredictable delivery of the same synthesized reinforcers during the same synthesized establishing operations.

Effects are then extended to relevant people implementing in relevant contexts over relevant time periods.

Effect are socially validated.
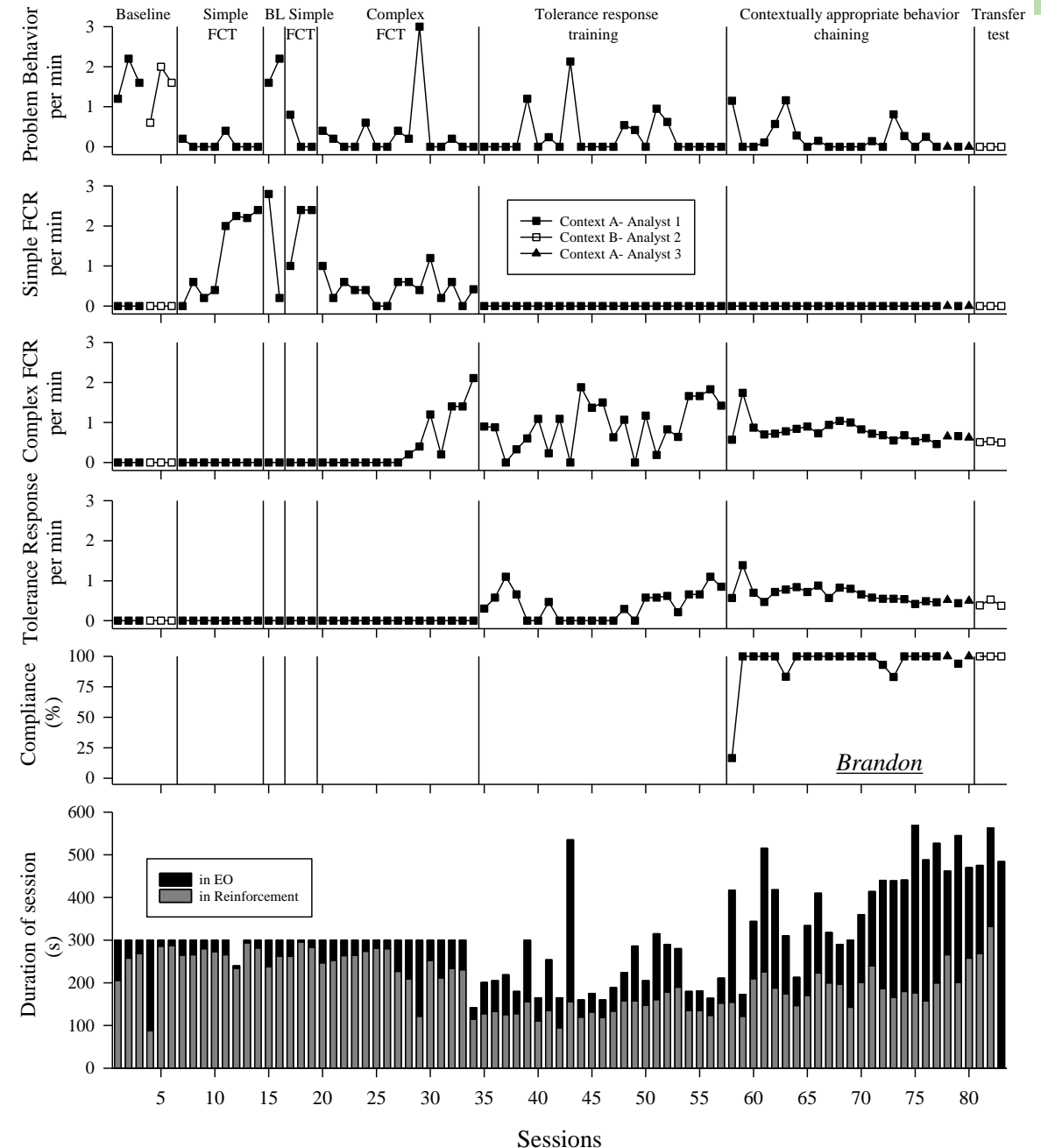
Diego / control session

- Age: 11
- Diagnosis: Autism
- Language Level: Speaks in Short Sentences
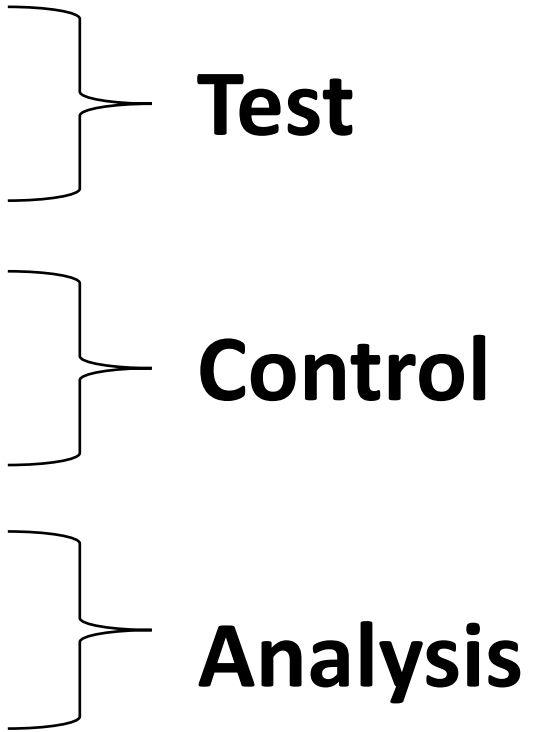- Referred for: Self-injurious behavior, Aggression, Property Destruction
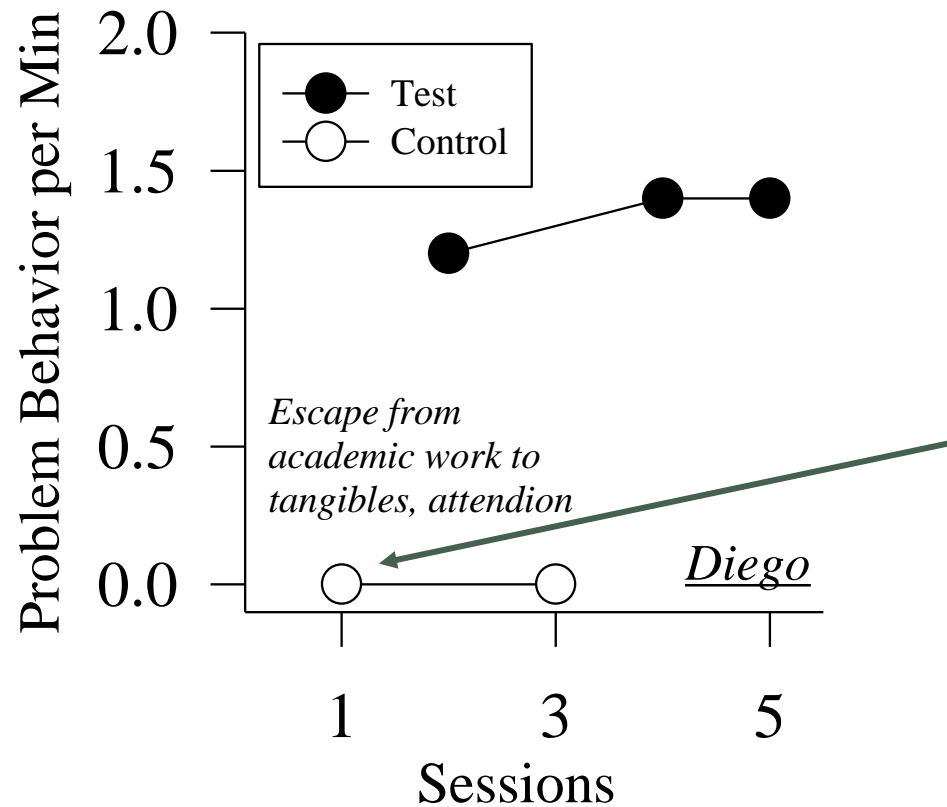
Diego / test session

- Age: 11
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- Language Level: Speaks in Short Sentences
- Referred for: Self-injurious behavior, Aggression, Property Destruction
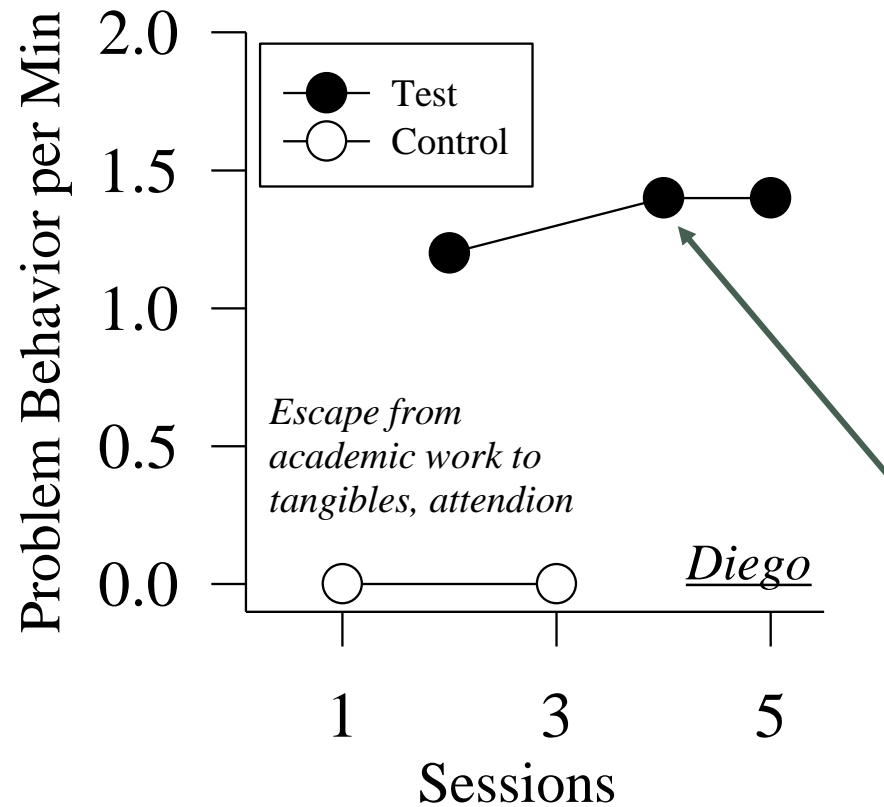
Diego / treatment session

- Age: 11
- Diagnosis: Autism
- Language Level: Speaks in Short Sentences
- Referred for: Self-injurious behavior, Aggression, Property Destruction

*The skills of **functional communication**, **delay/denial toleration**, and **contextually appropriate behavior** are shaped via intermittent and unpredictable delivery of the same synthesized reinforcers during the same synthesized establishing operations.

Effects are extended to relevant people implementing in relevant contexts over relevant time periods.

Effects are socially validated.

REFLECTION: What is an IISCA?

It is an **Interview-Informed Synthesized Contingency Analysis**, which involves

- Provision of personalized and synthesized reinforcers for precursors to *and* dangerous behaviors in a single condition

Test

- Provision of same reinforcers continuously in a second condition, otherwise matched

Control

- Rapid alternation of test and control conditions that differ only by the presence/absence of the contingency

Analysis

SAFETY IS PARAMOUNT

Safety is primarily insured through:
1. Immediate delivery
2. Of all suspected reinforcers
3. For any member of the response class
   (use an "open" contingency class)

Other safety considerations:
1. Body position
2. Materials / Location
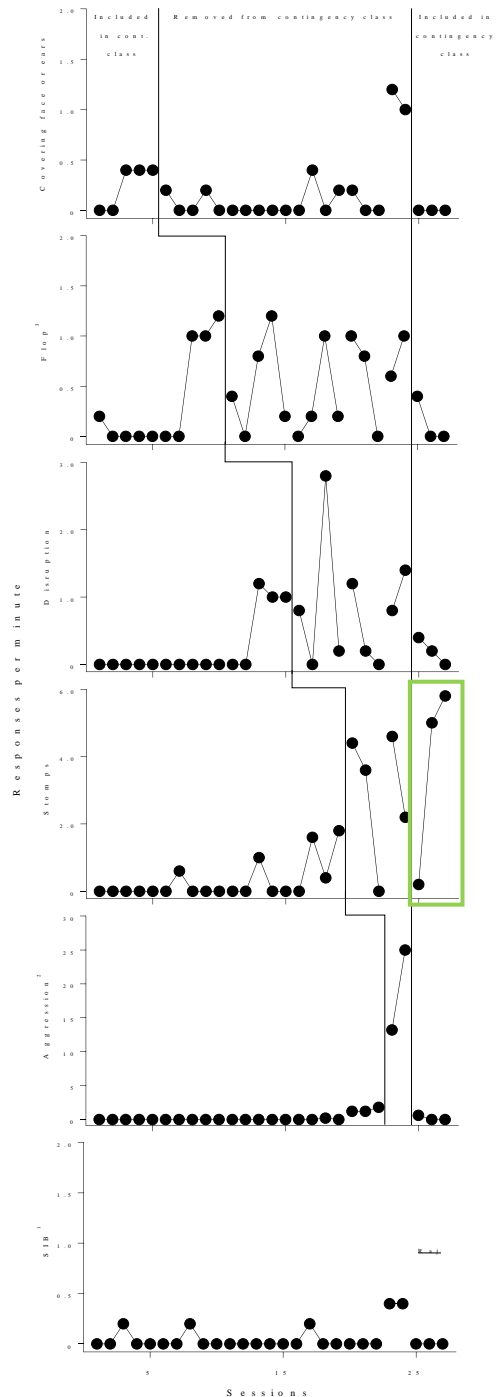3. Everybody has session termination authority

REFLECTION:
How is safety maximized in the analysis?
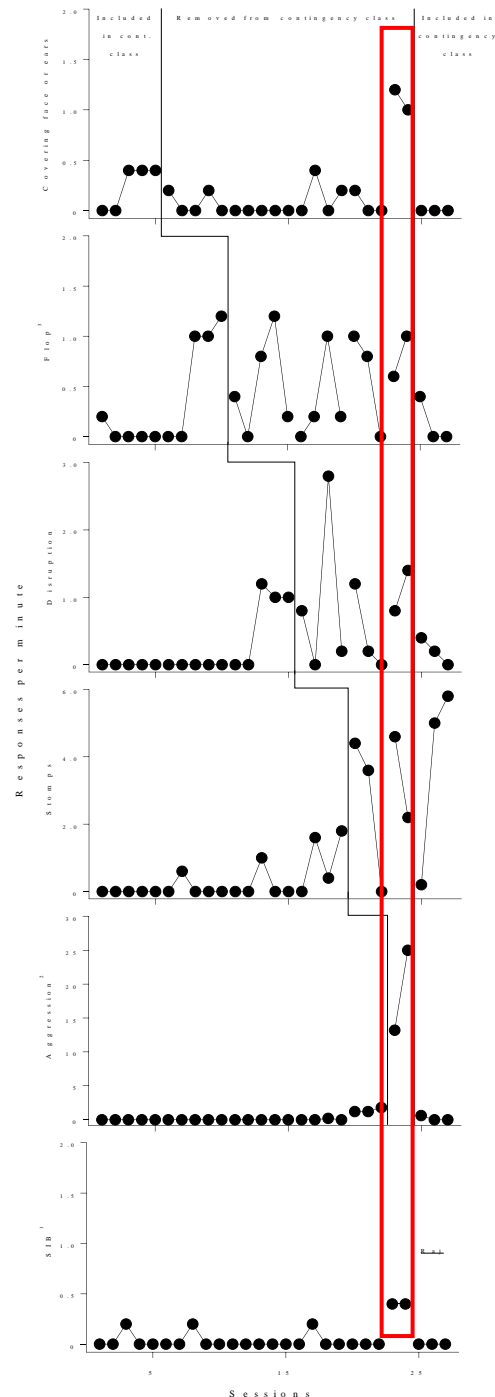
- Age: 5
- Diagnosis: Autism
- Language Level: Single word utterances
- Referred for: Self-Injury, Aggression, Property Destruction

Another example of
relatively closed contingency class

- Age: 5
- Diagnosis: Autism
- Language Level: Single word utterances
- Referred for: Self-Injury, Aggression, Property Destruction

Another example of
relatively open contingency class

On the Generality of the PFA Process....

The PFA process is applicable in clinics, homes, specialized programs, and public schools.

The process is appropriate for severe (dangerous) problem behavior as well as for emerging problem behavior.

The process is suitable for children on the autism spectrum as well as those not on the spectrum.

The process is appropriate for children with or without language.

From Jessel, Hanley, & Ghaemmaghami (*JABA*, 2016)

INTERVIEW-INFORMED SYNTHESIZED CONTINGENCY ANALYSES:
THIRTY REPLICATIONS AND REANALYSIS

JOSHUA JESSEL

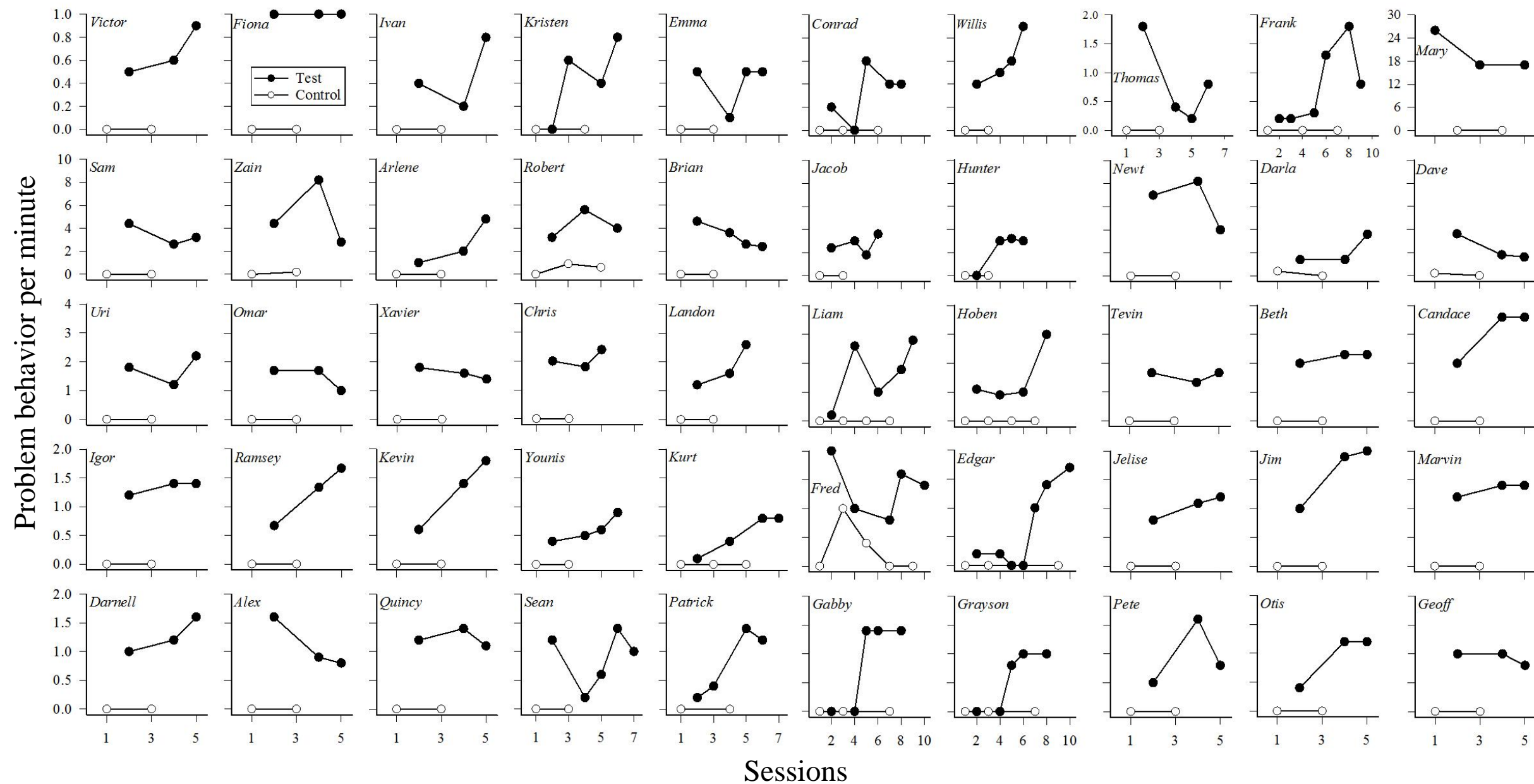WESTERN NEW ENGLAND UNIVERSITY AND CHILD STUDY CENTER

AND

GREGORY P. HANLEY AND MAHSHID GHAEMMAGHAMI

WESTERN NEW ENGLAND UNIVERSITY
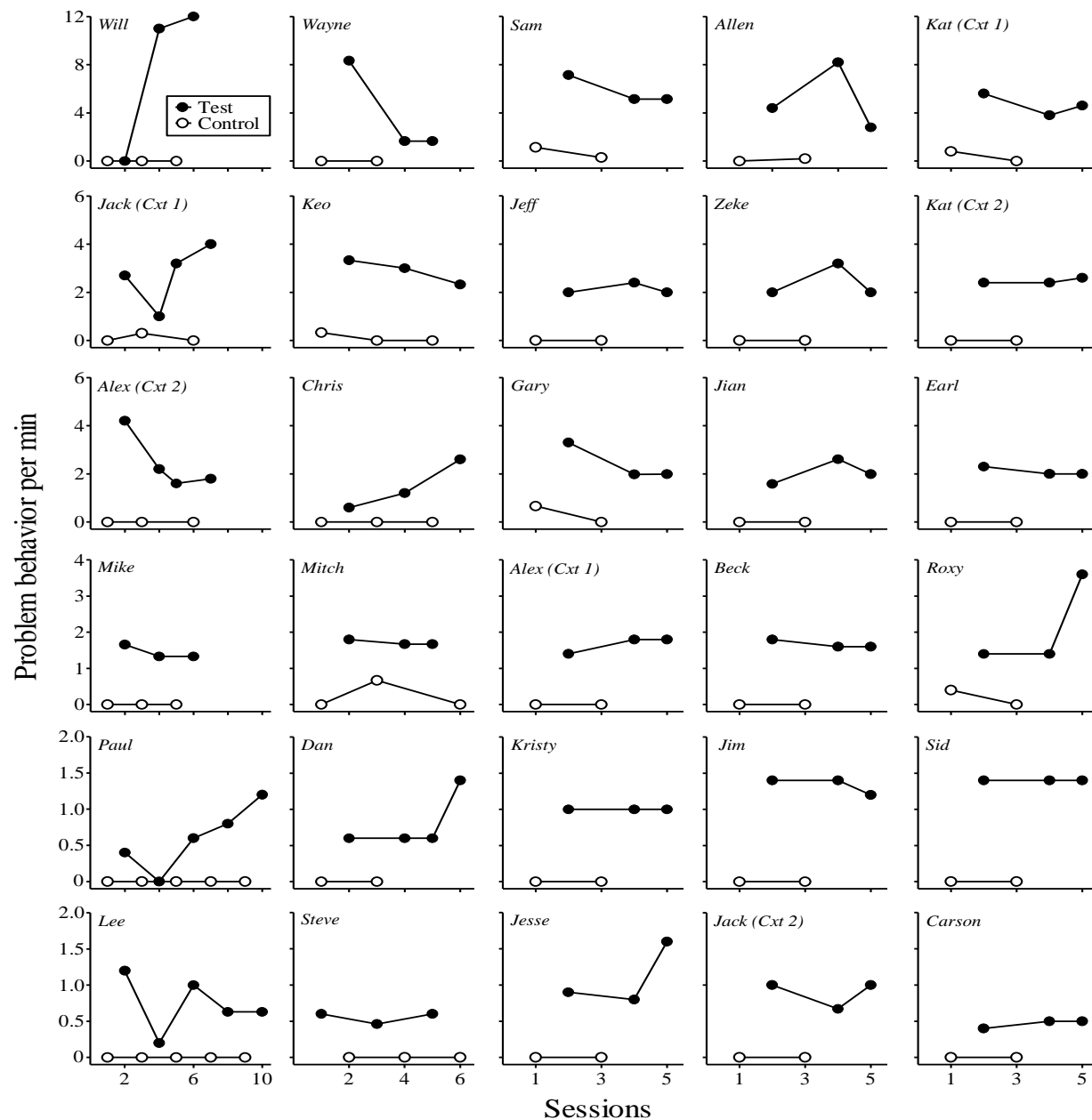
Generality shown across different implementers

Strand & Eldevik (2017, *Beh. Int.*)

Herman, Healy, & Lydon (2018, Dev. Neuro.)

Jessel, Ingvarsson, Metras, Hillary, & Whipple (2018, *JABA*)

Beaulieu, Clausen, Williams, & Herscovitch (2018, *BAP*)

Taylor, Phillips, & Gertzog (2018, *Beh. Int.*)

Chusid & Beaulieu (2019, *JABA*)

Promising effects to be reported next!

Dr. Jacobson et al.

Positive outcomes are **possible** with reliance on synthesized reinforcement contingencies (and assumptions of interactive control), but

are positive outcomes **probable**?

Jessel, Ingvarsson, Metras, Hillary, & Whipple (2018, *JABA*)

Achieving Socially Significant Reductions in Problem Behavior following the Interview-Informed Synthesized Contingency Analysis:
A Summary of 25 Outpatient Applications
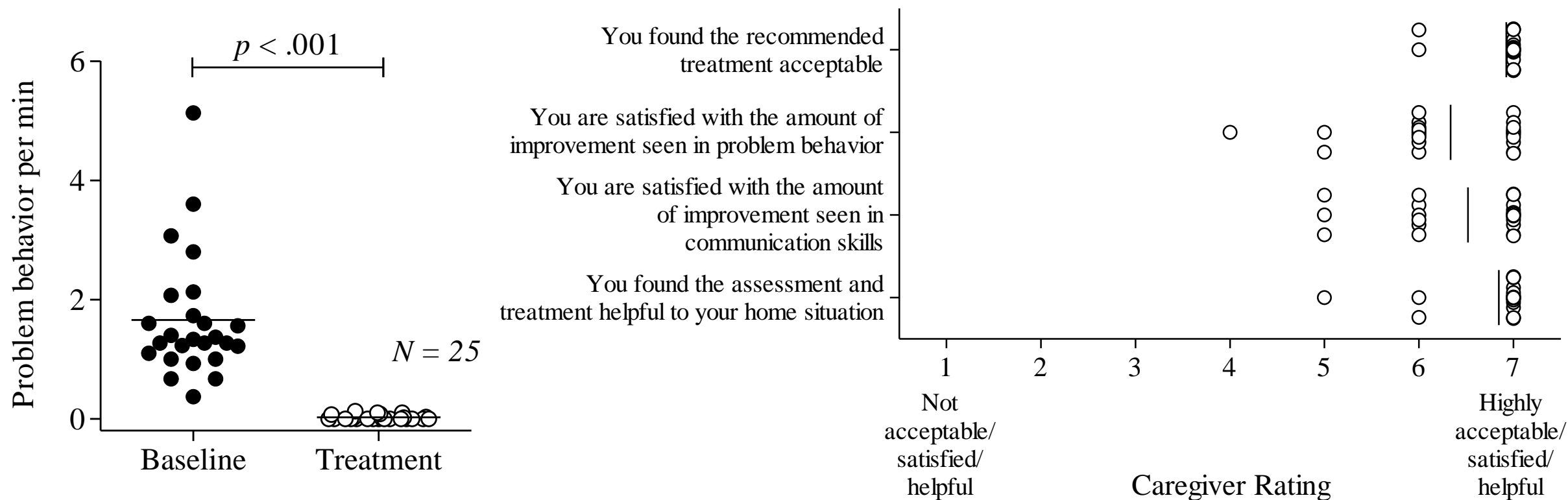
Similar CCCSD evidence for any other functional assessment process does not exist.
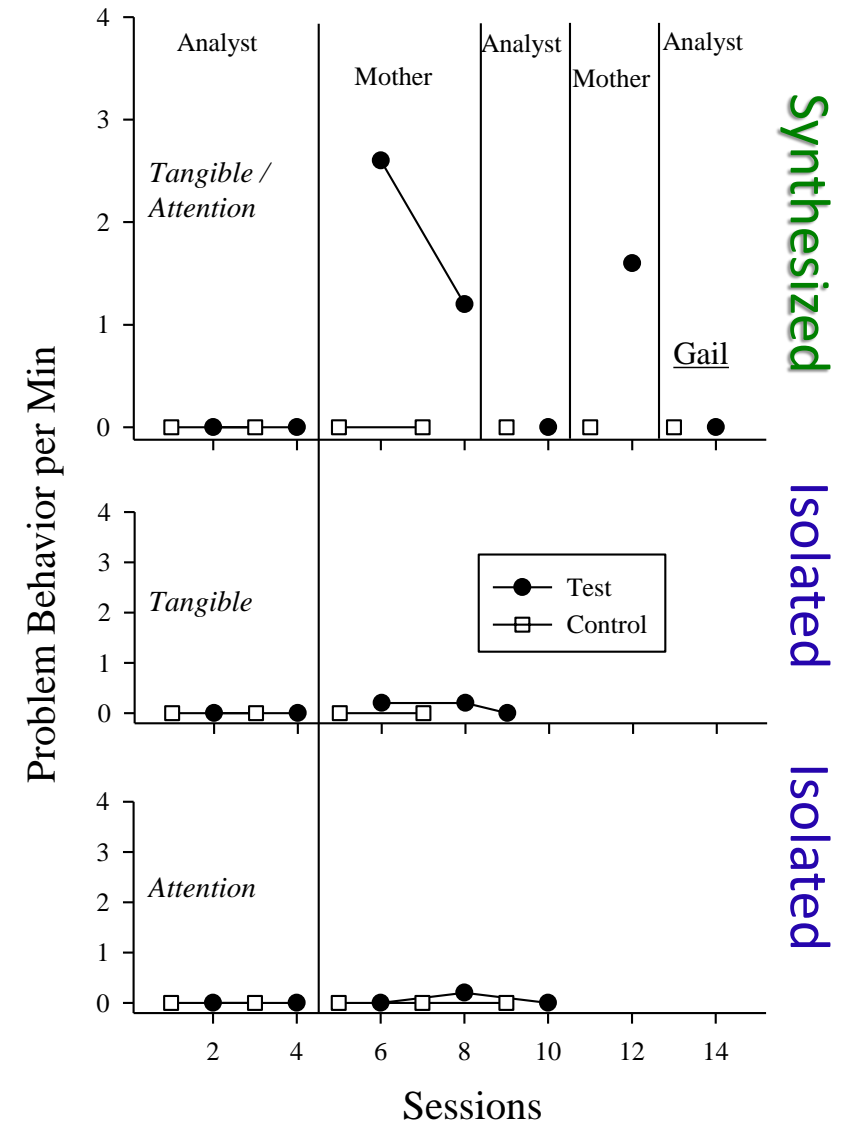
What are the critical factors driving these outcomes?

Personalized and Synthesized Reinforcement Contingencies

Case Example
Gail, 3 yo, dx: PDD-NOS
Setting: Clinic

Isolated contingencies sometimes do not control behavior whereas synthesized contingencies do.
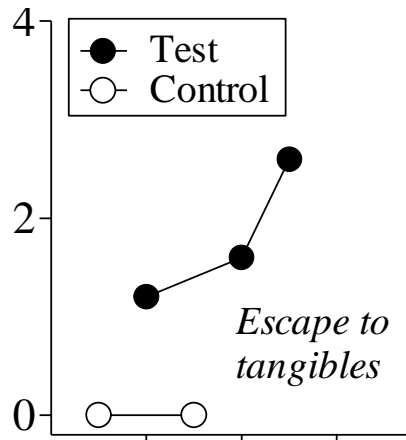
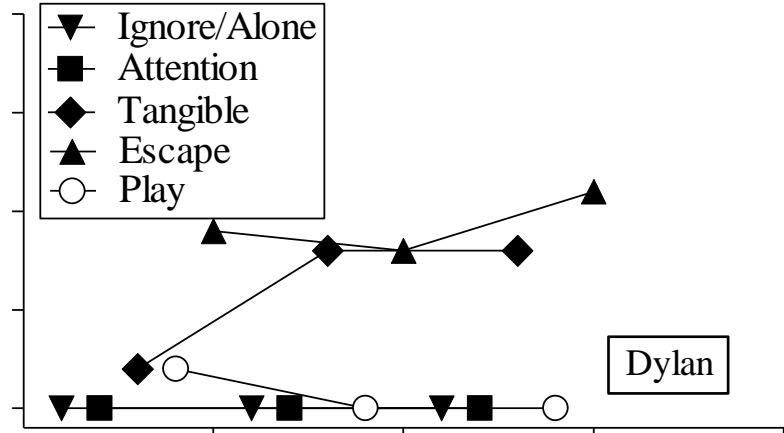*This is not a paradox, just a classic example of an interaction without main effects*

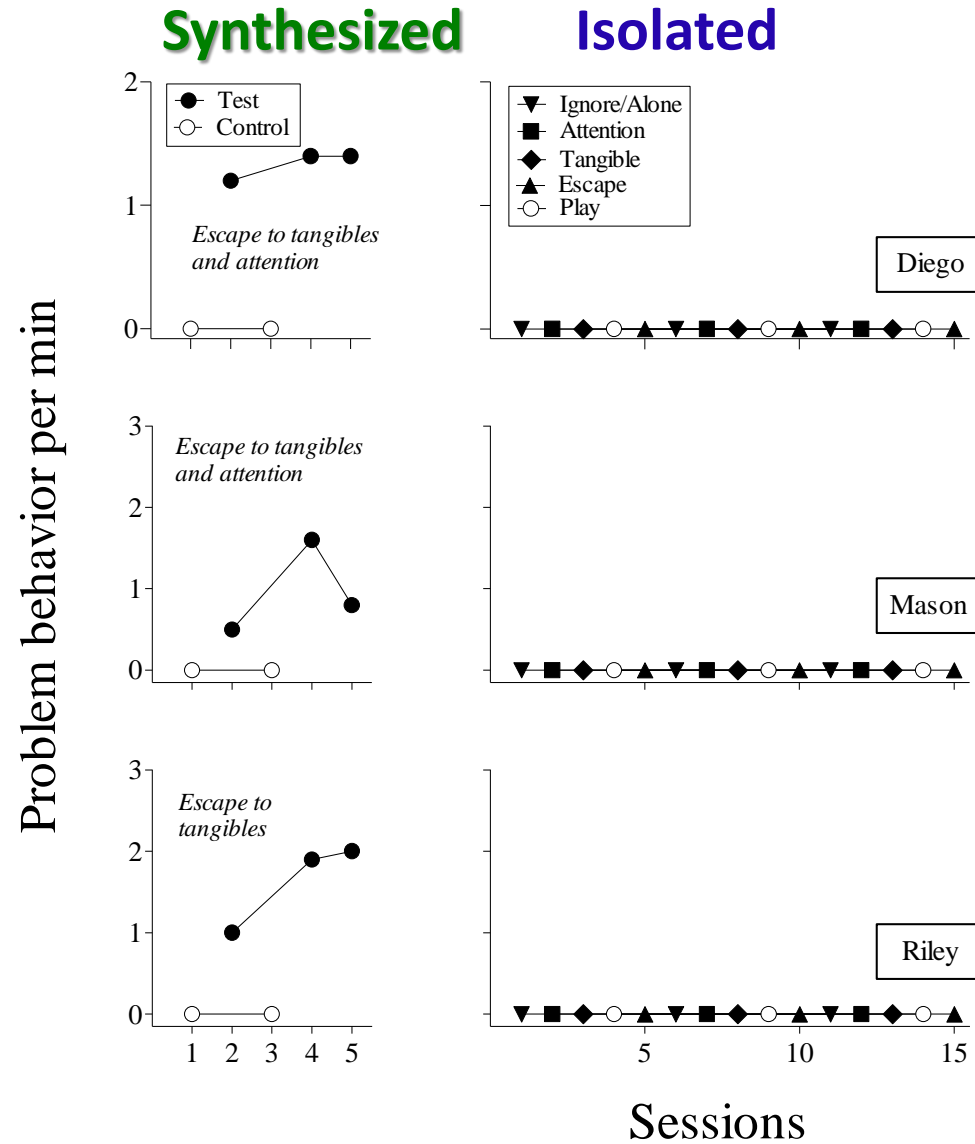# Analysis Comparison from Slaton et al., 2017, *JABA*)

Synthesized

Isolated

Sometimes both synthesized and isolated reinforcement contingencies influence problem behavior (sometimes yield the same conclusion)

Analysis Comparison (Slaton et al., 2017, *JABA*)

Synthesized **Isolated** **Synthesized**

But our analyses show, more often, that synthesized reinforcement contingencies influence problem behavior whereas isolated ones do not

Whole contingencies have properties that sometimes cannot be found in the parts of the contingency

Comparative treatment analyses reliably reveal advantage of synthesized contingencies

From:

Nature and Scope of Synthesis in Functional Analysis and Treatment of Problem Behavior

Slaton & Hanley (*JABA, 2018*)
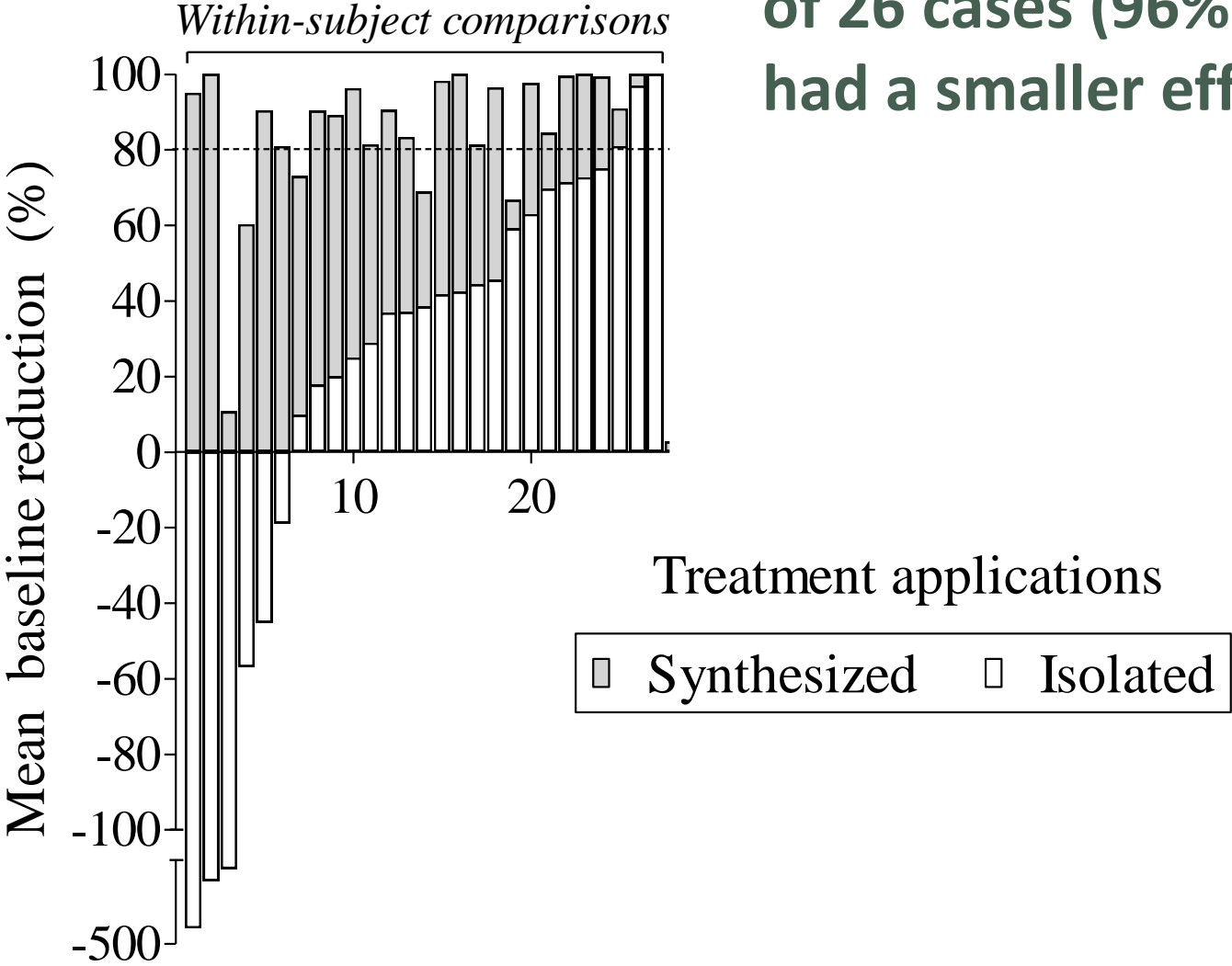
Synthesized contingencies had a better effect size in 25 of 26 cases (96%) and never had a smaller effect

Within-subject comparisons

Mean baseline reduction (%)

Treatment applications

Synthesized   Isolated
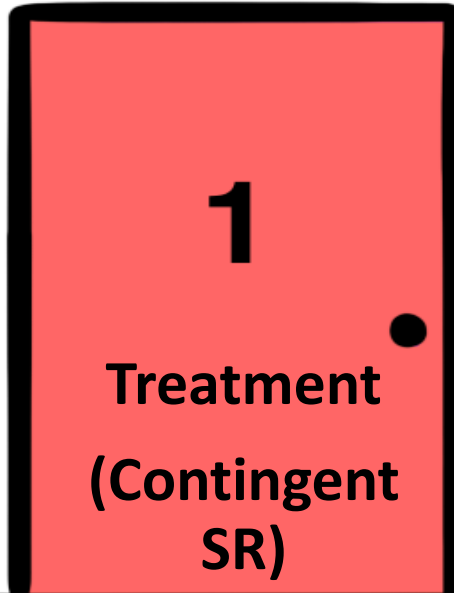
Limits of the PFA process and the IISCA

- General and durable elimination of severe problem behavior is still elusive following a successful IISCA

  - Developing a replacement repertoire requires time, expertise, or at least expert supervision, and the ability to problem solve problems as skills are developed

  - Transferring control from one or a few people and one or a few contexts to all people and all contexts is still a major challenge

- Need more follow up data collected and articulation of successful processes when general and durable elimination of severe problem behavior is not achieved

Latest Development:

Enhanced Choice Model
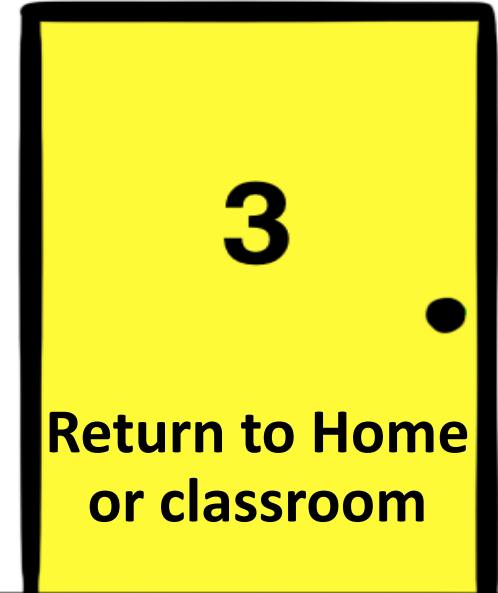for providing assessment and treatment

Enhanced Choice Model

Practice Context

1

Treatment (Contingent SR)

Hangout Context

2

No EOs (Noncontingent SR)

EXIT

3

**Return to Home or classroom**

Treatment additions
1. **Foreshadows**
2. **Within-EO Choice**
3. **Wait-out EXT proc**
4. **Reflections**

- Similar outcomes in similar time frames
- No escalation to severe problem behavior
- Allowed expansion of clients served
  - High risk SPB; Programs w/ hands off policies; Medically complex clients
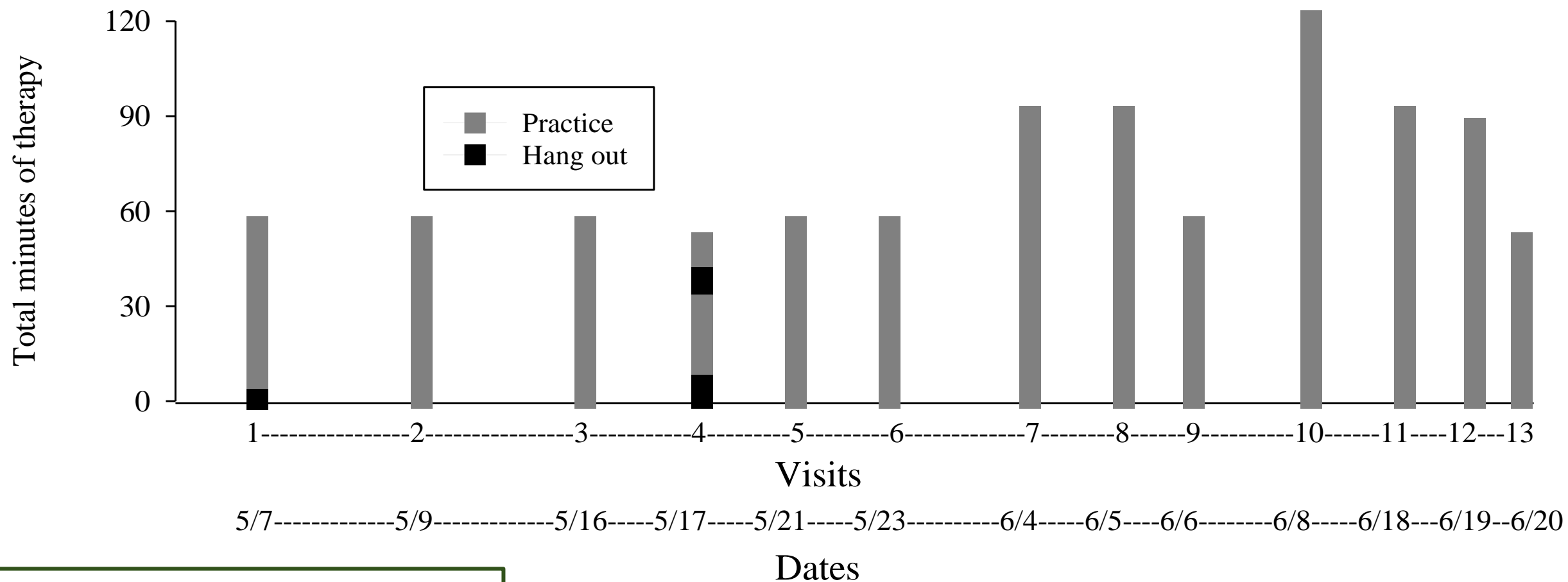
Socially validated outcome in 13 1-hour visits across 6 weeks (>95% of time in treatment)
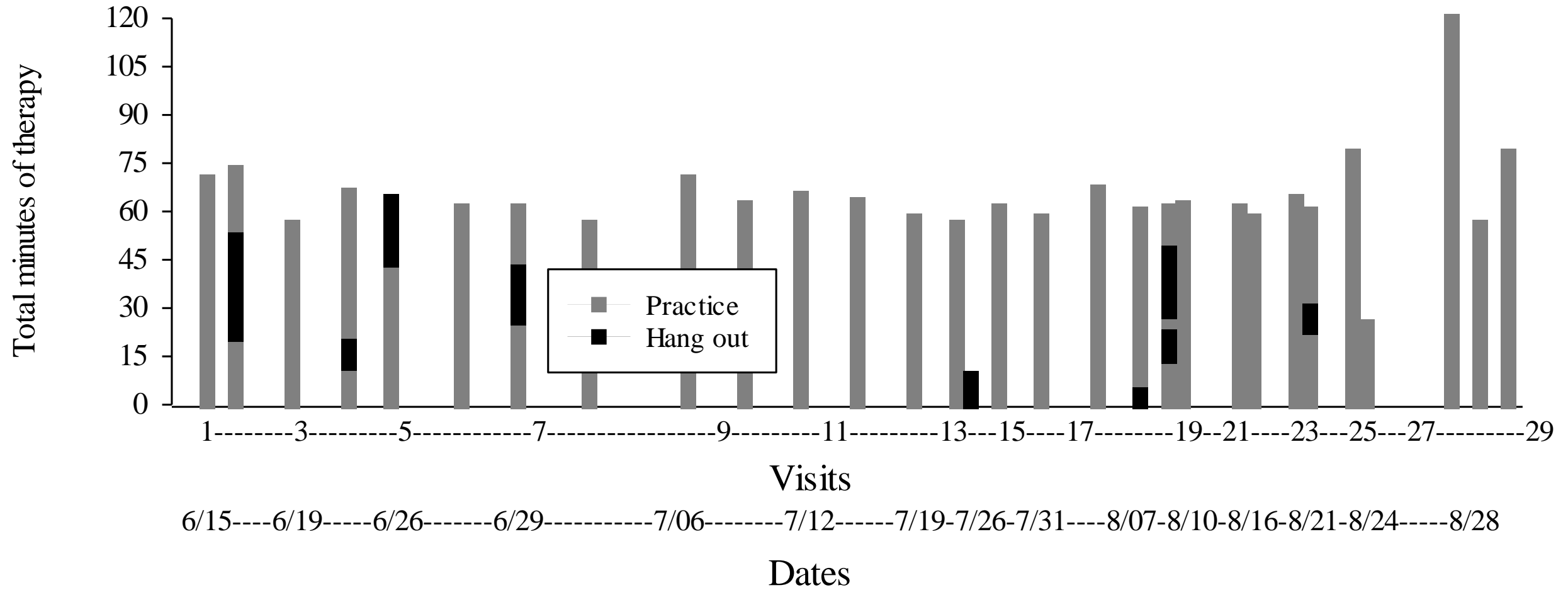
Socially validated outcome in
29 1-hour visits
across 10 weeks
(>90% of time in treatment)

Parent feedback (following transfer to home)

5. How comfortable were you **taking away Jacob's preferred activities (e.g., electronics) and asking him to do something else (e.g., clean up, do his homework)** BEFORE visiting the clinic?

   1 2 3 (4) 5 6 ~~7~~

 Not comfortable   Very comfortable

6. How comfortable are you **taking away Jacob's preferred activities (e.g., electronics) and asking him to do something else (e.g., come to dinner, do his homework)** now (AFTER visiting the clinic)

   1 2 3 4 5 6 (7)

 Not comfortable   Very comfortable

7. How comfortable were you **taking Jacob to public places** BEFORE visiting the clinic?

   (1) 2 3 4 5 6 7

 Not comfortable   Very comfortable

8. How comfortable are you **taking Jacob to public places** now (AFTER visiting the clinc)?

   1 2 3 4 5 6 (7)

 Not comfortable   Very comfortable

Why would children choose to participate in treatment?

Treatment is progressive; involves many relevant reinforcers:

    Starts with easy criteria and large pay out

Partly due to the universal preference for contingent over noncontingent reinforcers

    i.e., due to a preference for *yearning and earning*

Hanley, Piazza, Fisher, & Contrucci, 1997, *JABA*

The **Problem**

- Problem behavior is prevalent among children with autism and is sometimes severe and intractable, leading to highly restrictive lifestyles

A Possible and Probable **Solution**

- Practical Functional Assessment and Skill-Based Treatment
  - Shown to produce socially meaningful outcomes
  - Shown to be socially valid and generally applicable process
  - Shown to be effective within Enhanced Choice Model
    - Important for use with adults or any high-risk clients

Thanks for listening.

Time for Questions.

For more assistance go to:

www.practicalfunctionalassessment.com