Toward Meaningful Outcomes from Dignified Processes

A Tutorial on the Practical Functional Assessment Process for Problem Behavior

Gregory P. Hanley Ph.D., BCBA-D

WESTERN NEW ENGLAND UNIVERSITY WNE

University of Massachusetts Medical School UMASS

For more information go to:
www.practicalfunctionalassessment.com

Seminar for: **National Autism Conference**
August, 2018 **Penn State University**

With Autism,
there is a higher likelihood
of problem behavior like
meltdowns, aggression, and self-injury

Why do restricted "lifestyles"
dictated by problem behavior
persist for many families
with children on the spectrum?

Restrictive lifestyles persist partly because problem behavior of children is merely

modified

medicated

mollified

micro-analyzed

remedied apart from skill development

Powerful working assumption

If problem behavior is occurring with regularity…..

– **it is being reinforced**

(Even when important biological/medical factors are known or suspected.)

The one thing at a time model

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

The one thing at a time model:

An Antecedent	→ A Behavior	→ A Consequence
An Establishing operation	→ A Problem Behavior	→ A Reinforcer

The shift to the many things at a time model:

Antecedents	→ Behaviors	→ Consequences
Establishing operations	→ Problem Behaviors	→ Reinforcers

The one thing at a time model:
An Antecedent
An Establishing operation

→ A Behavior
→ A Problem Behavior

→ A Consequence
→ A Reinforcer

The many things at a time model:

Antecedents	→ Behaviors	→ Consequences
Establishing operations	→ Problem Behaviors	→ Reinforcers
Put away iPad to do chores (brother present)	→ Noncompliance + resistance + negotiating + screaming + flopping + slapping	→ Avoidance of chores + continued time on iPad + choices + undivided attention

The many things at a time TREATMENT model:

Antecedents	→ Behaviors	→ Consequences
Same establishing operations	→ New Skills	→ Same reinforcers
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

Dignified processes and meaningful outcomes may be achieved when it is assumed that

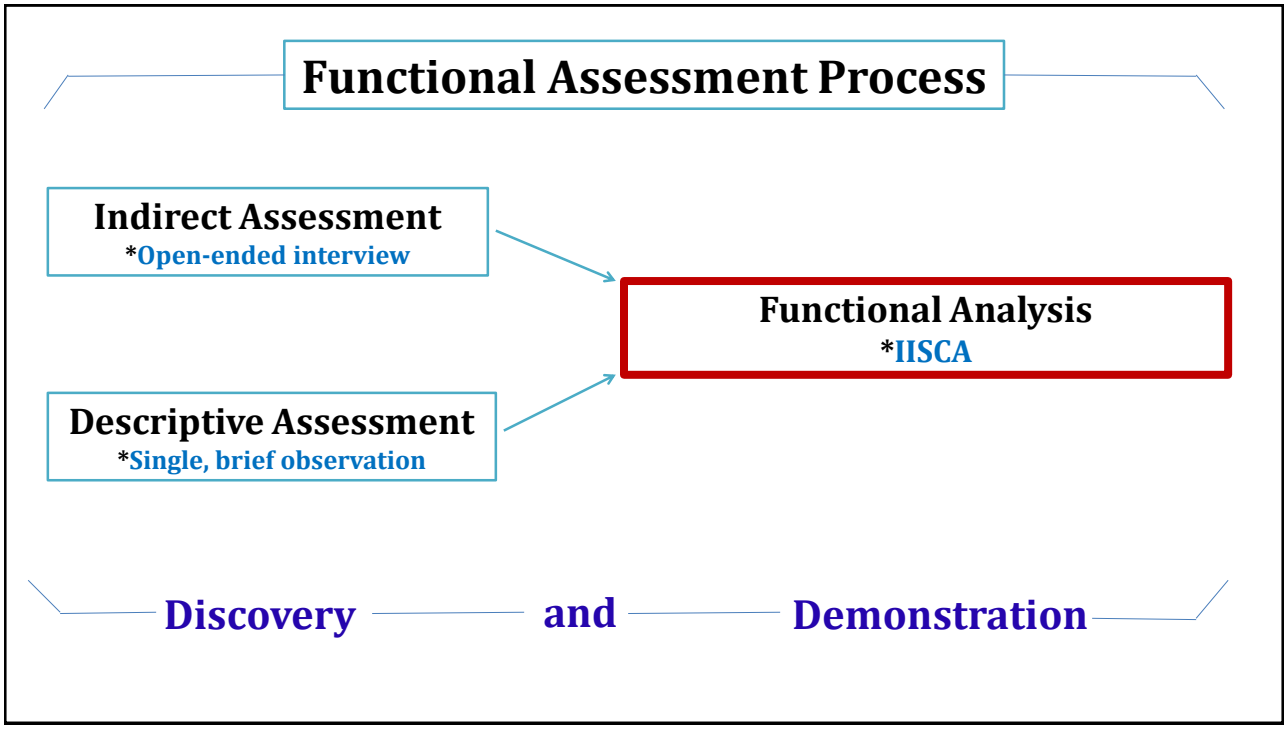
1. **Multiple establishing operations are usually influencing problem behavior and doing so simultaneously**
2. **Multiple reinforcers simultaneously maintain most problem behavior**
   i.e., problem behavior is multiply controlled and usually controlled by at least escape to tangibles, attention, & either sensory reinforcers, mand compliance, or both
   - **The trick is to determine the details within these generic categories that are relevant to each person**
3. **Most problem behavior emitted by the same person is sensitive to the same *synthesized reinforcement contingency***

Functional assessment is a process to determine the variables influencing problem behavior

Functional analysis is an attempt to model the natural conditions in which problem behavior is evoked and reinforced.

"All models are wrong; some are useful."

Box & Draper, 1987, p. 424



Traditional Functional Analysis		Interview-Informed Synthesized Contingency Analysis
Multiple test conditions	→	Single-test condition
Uniform test conditions	→	Individualized test conditions
Isolated test contingencies	→	Synthesized contingencies
Reinforce dangerous behavior	→	Reinforce precursors to and dangerous behavior
Toy-play control condition	→	Test-matched control

Case Example: Gail, 3 years old, PDD-NOS

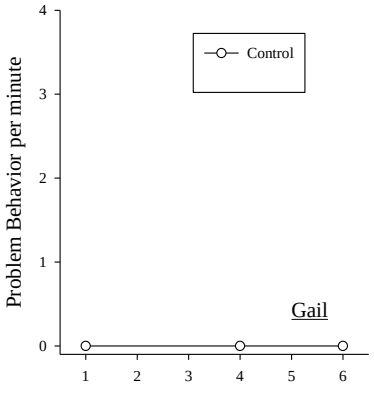
Interview suggested that Gail engaged in meltdowns and aggression….

when Mom was attending to other tasks or people….

in order to gain Mom's undivided attention and to have Mom play with her and her most preferred toys.

Functional Analysis: Control Condition

Control: ***Mom directs her undivided attention to Gail while interacting with her and her most preferred toys the entire time.***

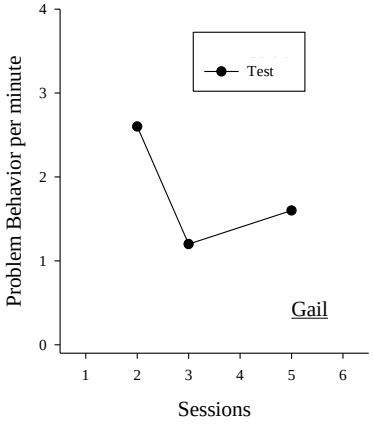


In the control, we are emulating the conditions Mom described as being associated with no problem behavior.

Functional Analysis: Test Condition

Test: ***Mom attends to other tasks and people….***

As soon as Gail engaged in any problem behavior, Mom directs her undivided attention to Gail while interacting with her and her most preferred toys.



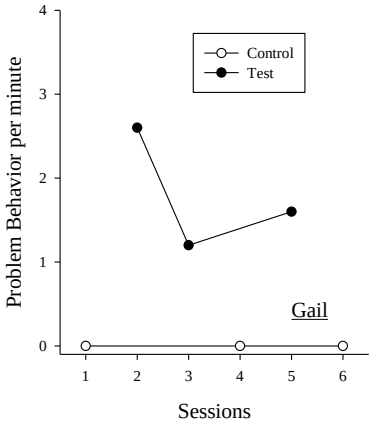
In the test, we are emulating the conditions Mom described as being associated with Gail's problem behavior.

Case Example: Gail, 3 years old, PDD-NOS

By alternating between 5 minute periods of test and control conditions, we were able to turn on and off Gail's problem behavior....

Giving us and her Mom confidence as to why she was engaging in the extraordinary problem behavior

....to simply gain and maintain her Mom's undivided attention and play time



Safety is Paramount

Safety is primarily insured through:

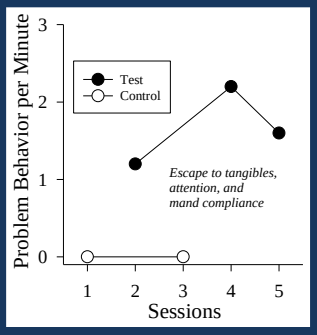
- **Immediate delivery**
- **Of all suspected reinforcers**
- **For any member of the response class**
  - **(use relatively open response classes; Warner et al., 2018)**

Other safety tactics

- **Body position**
- **Everybody with session termination authority**

IISCA - Brandon

- Age: 3
- Diagnosis: None
- Language Level: Speaks in Short Sentences
- Referred for: Aggression, Meltdowns, Noncompliance



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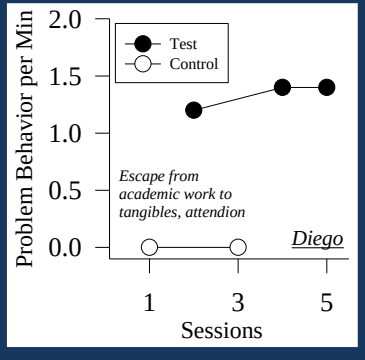
IISCA - Diego

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



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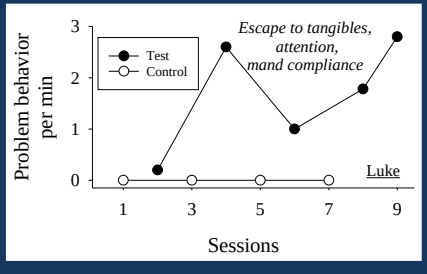
What does an informed analysis provide the practitioner?

1. **a demonstration of problem behavior sensitivity to a suspected reinforcement contingency**
2. **a stable and sensitive baseline from which to evaluate treatment**
3. **a properly motivating set of conditions to teach important life skills**

Analysis - Luke

- Age: 4
- Diagnosis: Autism, Attention Deficit Hyperactivity Disorder
- Language Level: Fully fluent speech
- Referred for: Aggression, Property Destruction, Meltdowns



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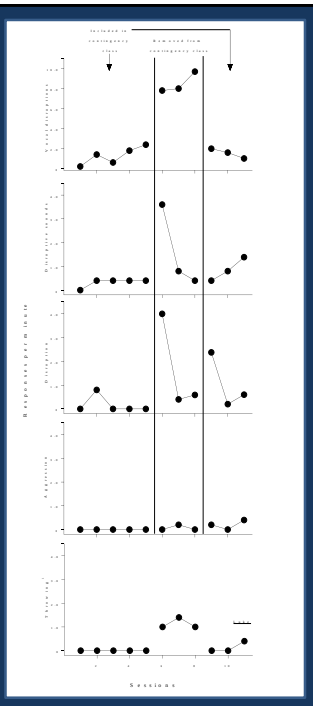
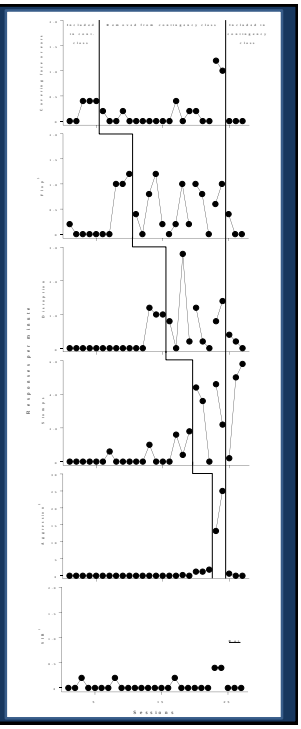
EXT Analysis – Luke

- Age: 4
- Diagnosis: Autism, Attention Deficit Hyperactivity Disorder
- Language Level: Fully fluent speech
- Referred for: Aggression, Property Destruction, Meltdowns



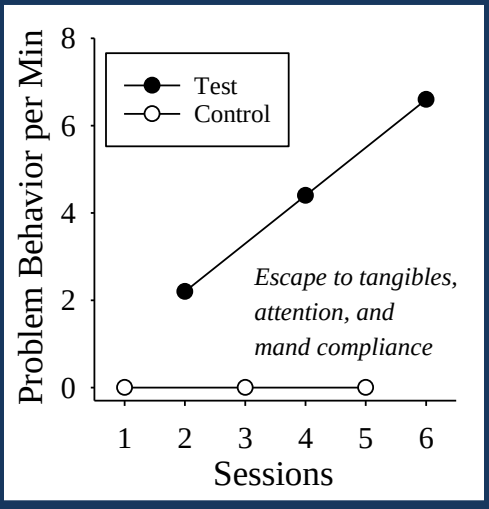
EXT Analysis – Raj

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



Analysis - Jeffrey

- Age: 9
- Diagnosis: Attention Deficit Hyperactivity Disorder, Generalized Anxiety Disorder
- Language Level: Speaks with Sophistication
- Referred for: Aggression, Elopement, Meltdowns
  - required several police escorts from school just prior to our involvement
  - Had school 1:1 (we served family)



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IISCA: Interview-Informed Synthesized Contingency Analysis

1. **Single**
2. **Individualized**
3. **Synthesized contingency**
4. **Reinforce precursors to *and* dangerous behavior**

Test

5. **Test-matched**

Control

6. **Rapid alternation of test and control conditions**

Analysis

Most Important Aspects of our Approach

Interview-informed

&

Synthesized

reinforcement contingencies

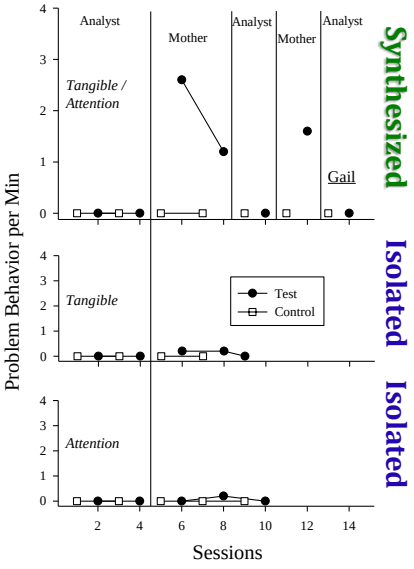
Neither are novel
Neither are sufficiently recognized in current ABA research or practice

From Hanley et al. 2014, *JABA*

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

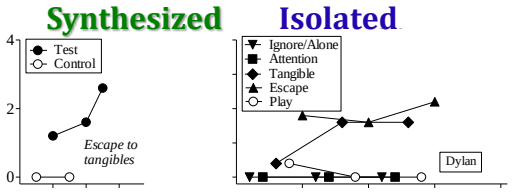
Why synthesize?

Isolated contingencies sometimes do not control behavior whereas synthesized contingencies do.



Analysis Comparison

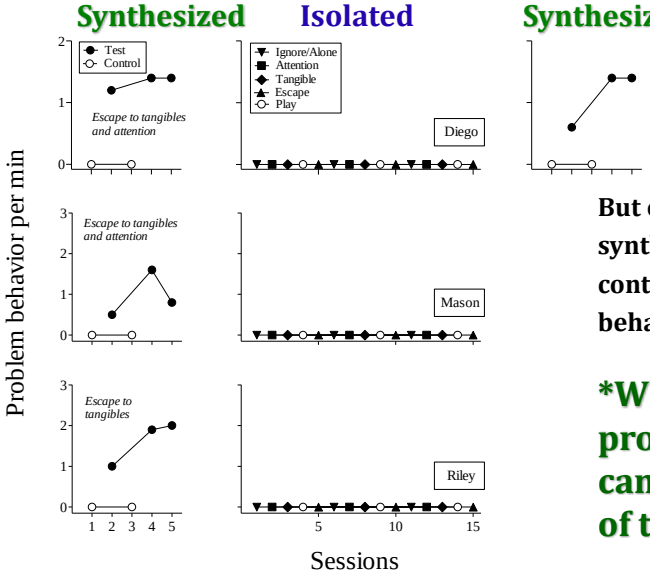
(Slaton et al., 2017, *JABA*)



Sometimes both synthesized and isolated reinforcement contingencies influence problem behavior

Analysis Comparison

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



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**

Isolated contingencies sometimes do not control behavior whereas synthesized contingencies do.

From:

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

Slaton & Hanley (in press, *JABA*)

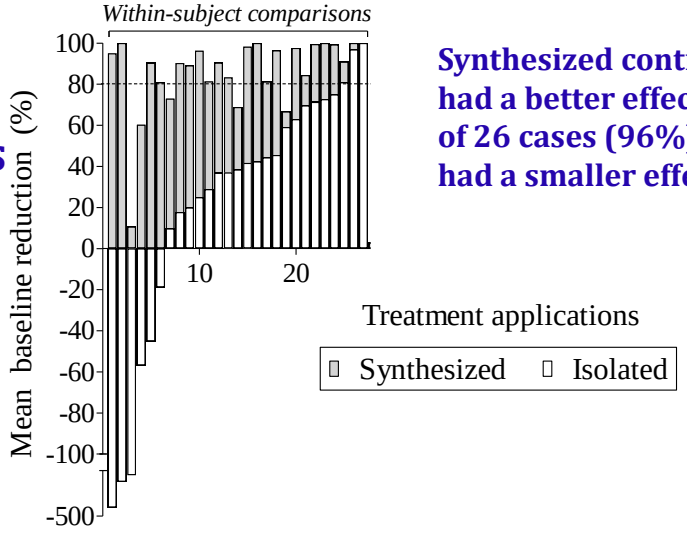
Synthesized Contingency	First Author (Year)	Participants
Escape to mand compliance	Bowman (1997) Eluri (2016) Jessel (2016) Roscoe (2015)	Ben, Jerry Pablo Allen, Mike, Jesse, Jian Chris
Escape to previous activity	Adelinis (1999) Fisher (1998) Hanley (2014) Hagopian (2007)	Raffie Ike, Tina Bob Perry, Maxwell, Kelly
Escape to rituals / stereotypy	Leon (2013) Rispoli (2014) Jessel (2016) Slaton (2017)	Laura Timmy, John, Diego Sam Chloe
Attention + tangibles	Brown (2000) Ghaemmaghami (2016) Hanley (2014) Mann (2009) Payne (2014) Santiago (2016)	Jim Jack, Nico Gail Madison Samantha Karen
Escape + tangibles	Fisher (2016) Jessel (2016) Lambert (2017) Lloyd (2015) Roscoe (2015) Slaton (2017) Strohmeier (2016)	Cameron Kristy, Jim, Carson, Chris, Mitch S-2 Abhi, Sid Jim Riley, Dylan, Jeff, S-1 (no pseudonym given)
Escape + attention	Mueller (2005) Payne (2014) Sarno (2011)	Bob Andrew Brandon, Franklin, J'Marcus
Escape + attention + tangibles	Fisher (2016) Ghaemmaghami (2015) Jessel (2016) Santiago (2016) Slaton (2017)	Alan, Allie, Sylvia, Tina Dan Jeff, Gary, Wayne, Earl, Keo, Lee, Paul Zeke Diego, Emily, Kyle, Jonah
Escape + attention + tangibles + mand compliance	Ghaemmaghami (2016) Hanley (2014) Jessel (2016)	Alex Dale Jian
Escape + preferred conversation topics	Jessel (2016) Santiago (2016) Slaton (2017)	Sid, Beck, Steve Karen Mason

Treatment efficacy often depends on synthesized contingencies

From:

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

Slaton & Hanley (in press, *JABA*)



Synthesized contingencies had a better effect size in 25 of 26 cases (96%) and never had a smaller effect

Treatment efficacy often depends on synthesized contingencies

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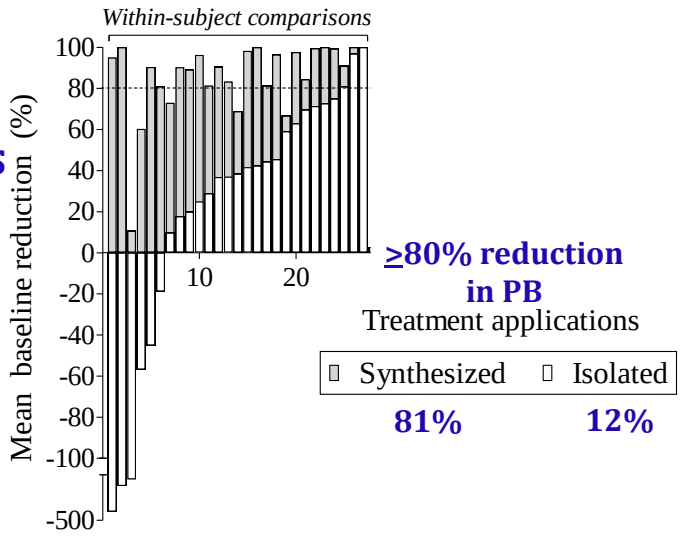

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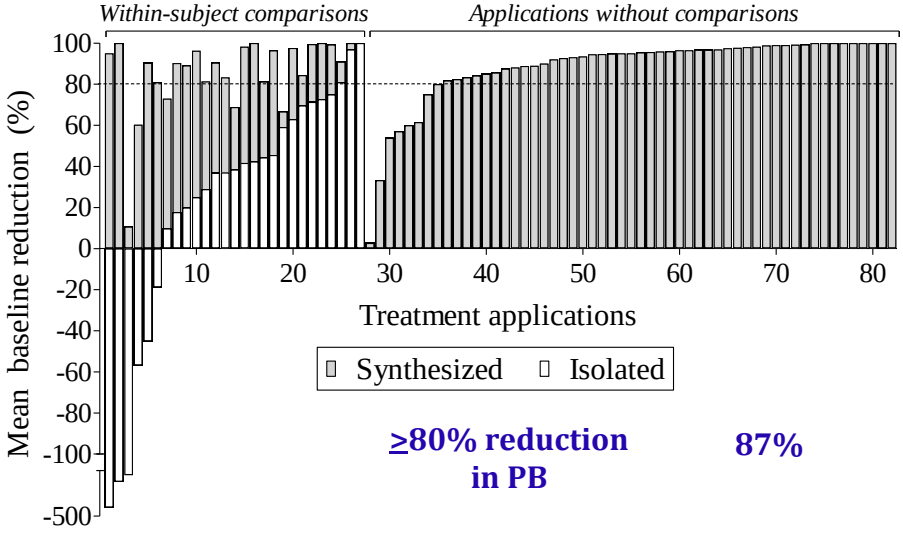
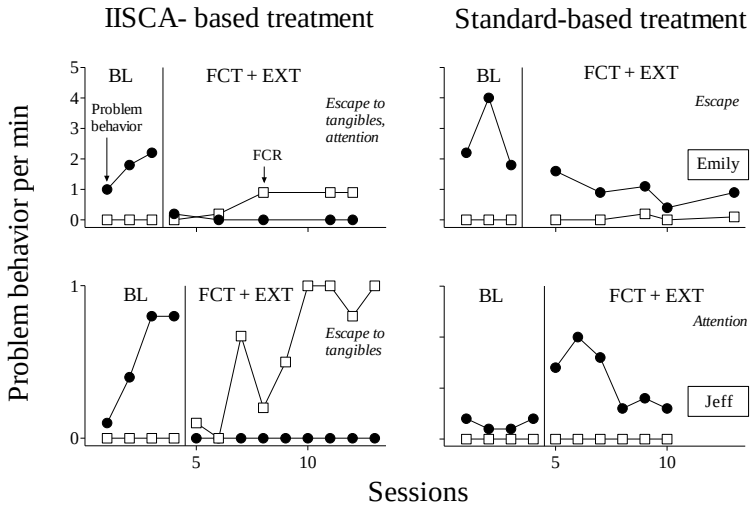


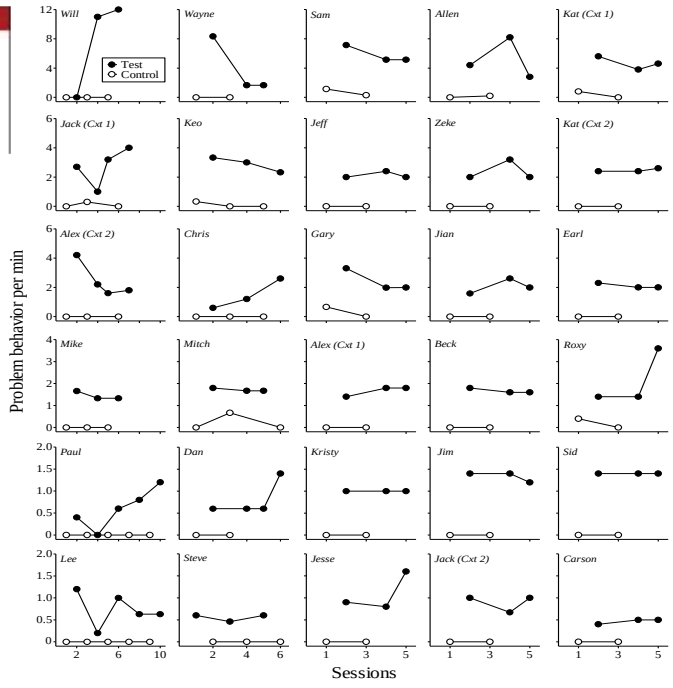
Treatment Comparison Results

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

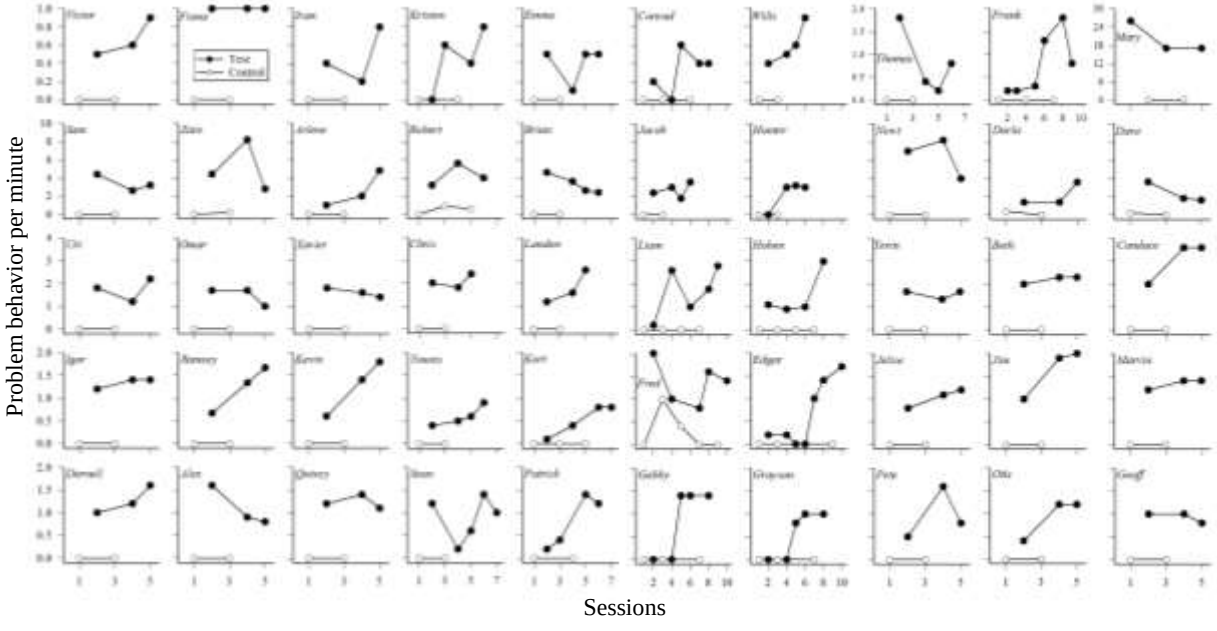


and it works despite different participant characteristics and different implementation contexts

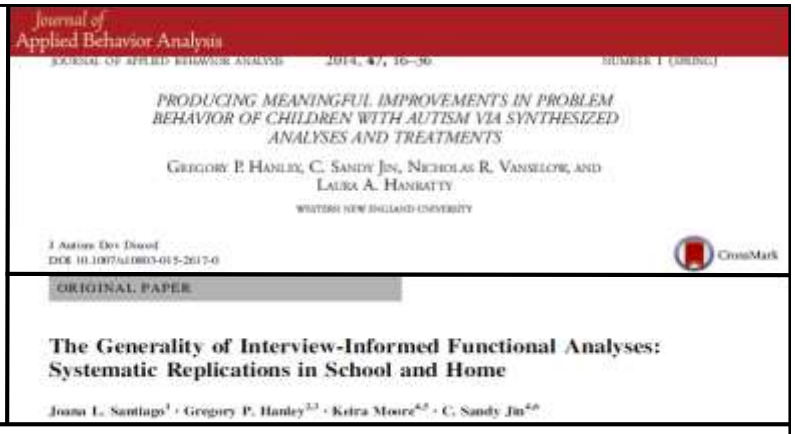
From Jessel, Hanley, & Ghaemmaghami (*JABA*, 2016)



From Rajaraman et al. (2018)



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


Journal of Applied Behavior Analysis

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

ORIGINAL PAPER

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

Similar effects reported in these—from other research groups

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

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

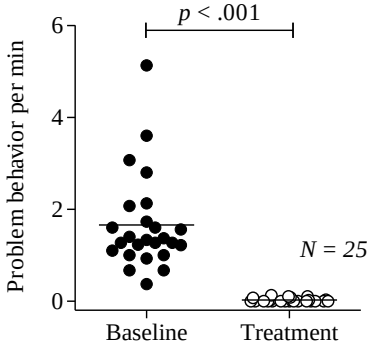
Jessel, Ingvarsson, Metras, Hillary, & Whipple (2018, *JABA*)

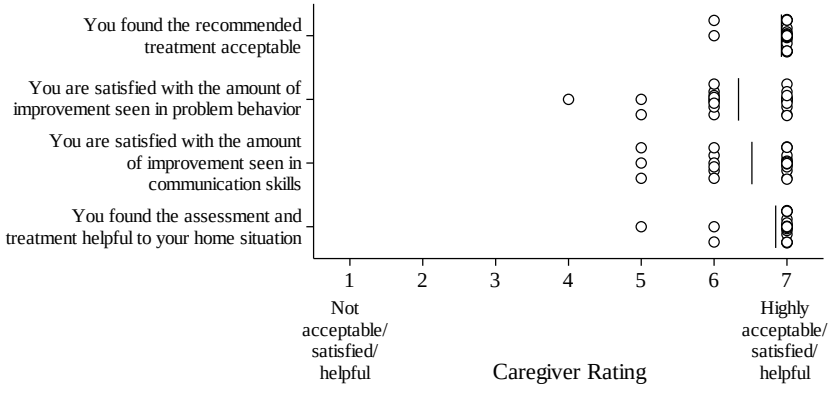
Beaulieu, Clausen, Williams, & Herscovitch (in press, *BAP*)

Chusid & Beaulieu (in press, *JABA*)

Jessel et al. (2018) *JABA*

Achieving Socially Significant Reductions in Problem Behavior following the Interview-Informed Synthesized Contingency Analysis: A Summary of 25 Outpatient Applications





Why do qualitatively rich, ecologically relevant, and synthesized contingencies allow for effective outcomes?

Some candidate variables:

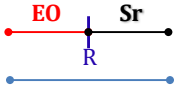
1. **Greater amount of reinforcement**
2. **Varied reinforcers minimizing satiation**
3. **Provision of choice among reinforcers**
   (which is reinforcing in and of itself)
4. **Positive interactions between reinforcers**
   (i.e., they may be complimentary reinforcers)
5. **….**

For now, let's simply consider this metaphor:

Greater Motivational Distance Travelled

With SFA, there is relatively short motivational distance travelled as child transitions from:

no tangible	to	tangible
work	to	no work
no attention	to	attention (reprimands)

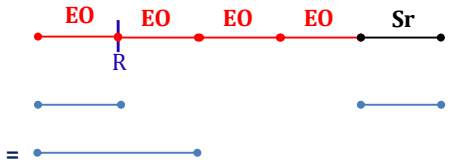


*here's another interpretation

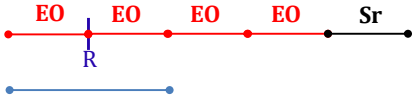
With SFA, there is sometimes a relatively short and incomplete motivational distance travelled during transition

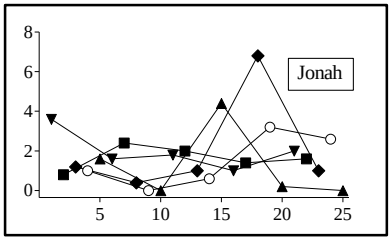
E.g., Demand condition

no tangible, no attention,
no mand compliance, and work to no work
(& still no attention, tangibles, or mand compliance)

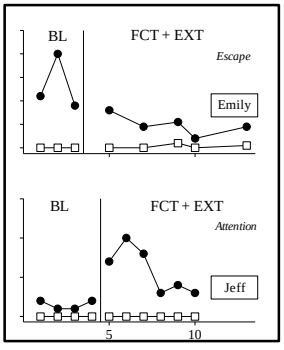


An incomplete motivational distance travelled





may lead to out of control problem behavior in SFA



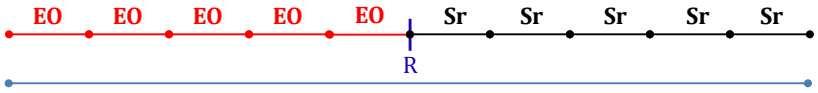
may lead to a failure for an FCR to be acquired

With IISCA, there is relatively long motivational distance travelled as child transitions from:

No tangibles, no mand compliance,
limited sensory reinforcers,
no high quality attention, & work

to

tangibles, mand compliance,
all sensory reinforcers,
high quality attention, and no work



With IISCA, there is relatively long motivational distance travelled as child transitions from:

No tangibles, no mand compliance,
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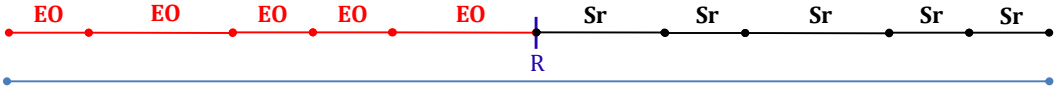
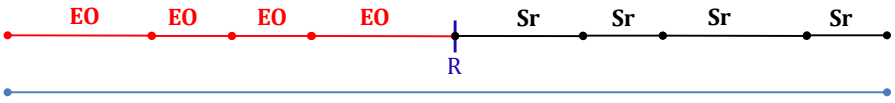
high quality attention, and no wor

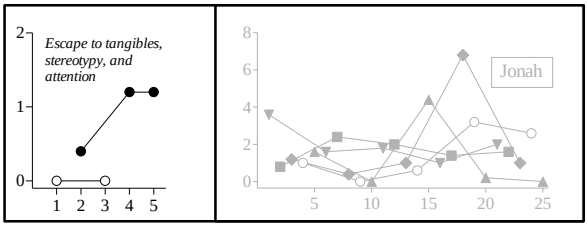
But, don't forget about possible interactions:



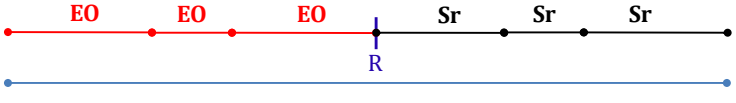
which probably creates even greater motivational distance travelled

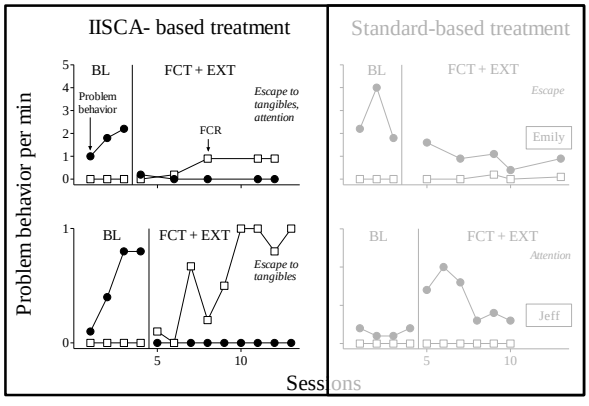
With proper motivational distance travelled, problem behavior is evoked quickly in analyses and is discontinued once Sr is delivered





With proper motivational distance travelled, FCRs are quickly acquired (& problem behavior does not usually persist during FCT)





Skinner, 1958, *S&HB*, p. 205:

"A common source of misunderstanding is the neglect of what happens when variables are combined in different ways.

Although a functional analysis begins with relatively isolated relations, an important part of its task is to show how its variables interact."

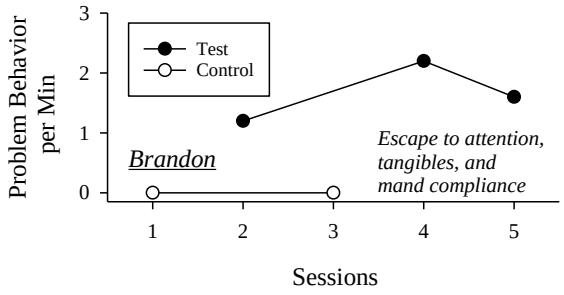
That which you must know from a functional analysis?

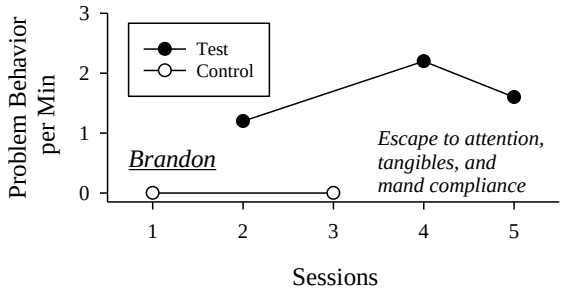
That which you can safely infer from a functional analysis?

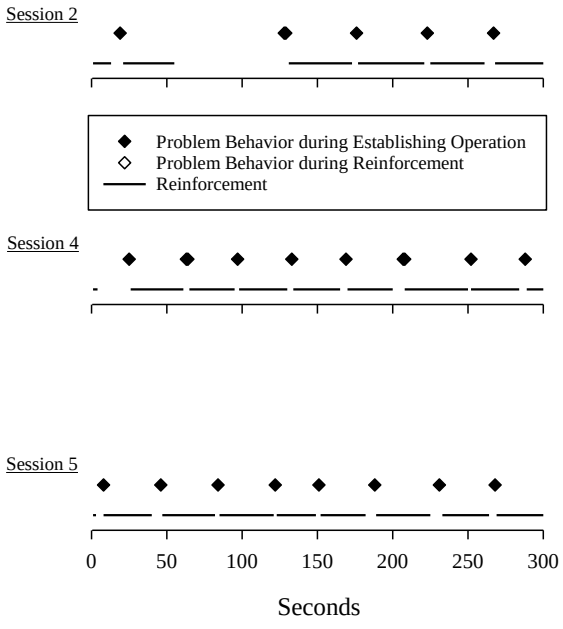
That which you do not need to know from a functional analysis?

That which I must know via my functional analysis:

- ✓That I can reliably turn problem behavior off with the presentation of the reinforcers
- ✓That I can reliably turn problem behavior on with the presentation of the evocative events
- ✓And that the reinforcers and evocative events were identified by other people relevant to the behaver

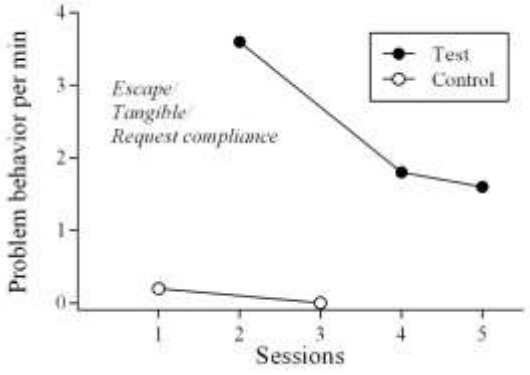






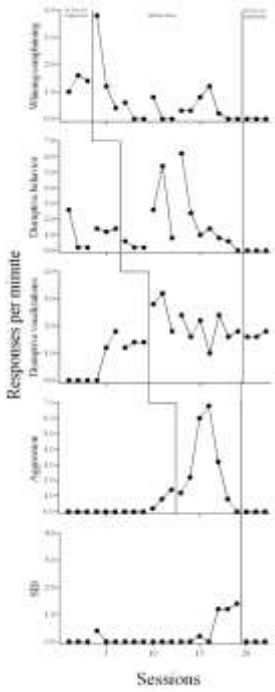
That which I can safely infer via my functional analysis:

- ✓ **Response class membership**



Problem Behaviors reported to co-occur (in order of concern)

1. **SIB**
2. **Aggression**
3. **Disruptive Behavior**
4. **Disruptive vocalizations**
5. **Whining/complaining**



This analysis shows all forms of problem behavior are evoked and maintained by same synthesized contingency.

This happens every time we conduct this sort of analysis.
(Warner et al., 2016)

This happens every time anybody else conduct this sort of analysis
(Smith and Churchill, 2002, Borrero & Borrero, 2008, Herscovitch et al., 2009)

That which I can safely infer via my functional analysis:

✓**Response class membership**

Reported co-occurrence = maintained by same reinforcers

I will infer response class membership and use their response to intervention (RTI) as verification

That which I do not need to know via my functional analysis:

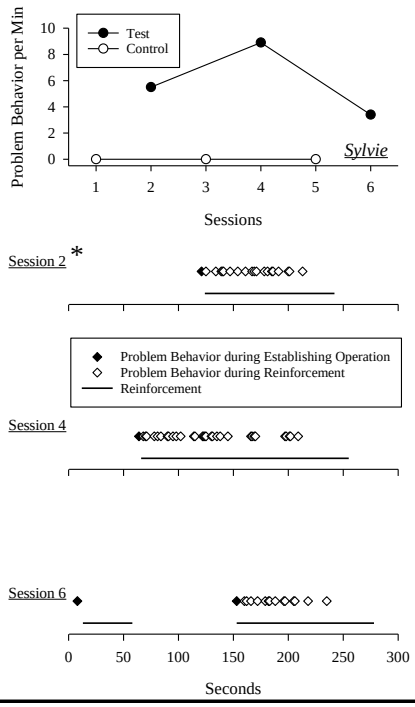
- ✓ **The single operant function of each problem behavior**
- ✓ **Whether problem behavior is maintained by positive or negative reinforcement**
- ✓ **Whether some element of a synthesized contingency is a "true" contingency or merely a "false positive"**
- ✓**Whether I can neatly compartmentalize the operation in the analysis into a tidy generic class of reinforcement**

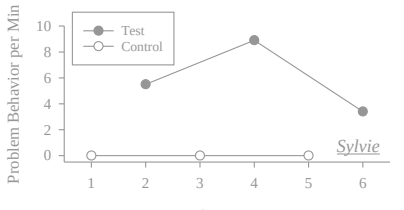
(e.g., social positive, social negative, attn, tang, esc, etc.)

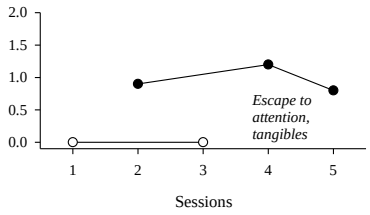
A final point…

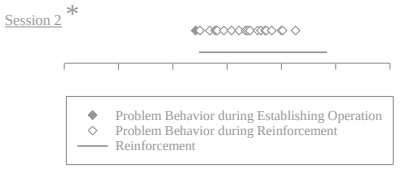
High rates in tests sessions of functional analyses are not to be celebrated

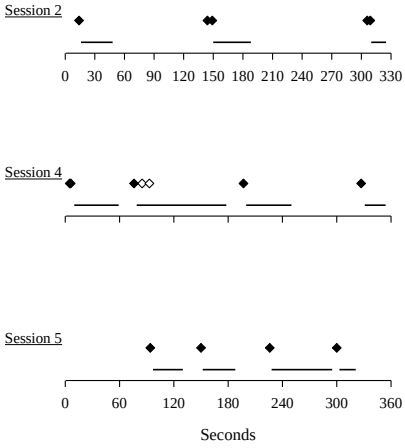
High rates of PB are not necessarily a good thing in a functional analysis











If you can control problem behavior in an analysis, you can treat that behavior.

You can do this.

If you try but can't control problem behavior in an analysis, your treatment will likely create unsafe situations, be ineffective, and necessitate restrictive or socially invalid treatment components.

Come up with at least one question relevant to conducting this practical functional assessment process

On to treatment at 1:15 today.

For more information, go to:

www.practicalfunctionalassessment.com