Selecting Function-Based Treatments for Socially Maintained Problem Behavior

James E. Carr
Behavior Analyst Certification Board

This presentation does not represent an official position of the BACB.

Today I will describe …

- Common function-based treatments for problem behavior
- Decision-making guidelines for selecting treatments for problem behavior maintained by:
  - Social positive reinforcement (e.g., attention)
  - Social negative reinforcement (e.g., escape from instruction)

Professional and Ethical Compliance Code for Behavior Analysts

3.01 Behavior-Analytic Assessment. RBT

(a) Behavior analysts conduct current assessments prior to making recommendations or developing behavior-change programs. The type of assessment used is determined by clients' needs and consent, environmental parameters, and other contextual variables. When behavior analysts are developing a behavior-reduction program, they must first conduct a functional assessment.

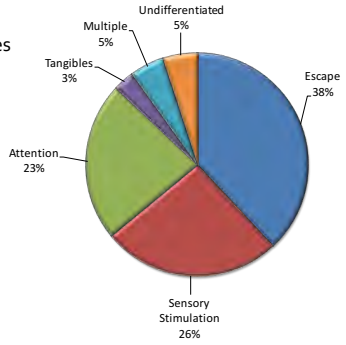
Causes (functions) of Problem Behavior

Reinforcement Functions

- **Attention from others (teachers, peers)**
- Access to tangible items (toys, materials) & activities
- **Escape from or avoidance of:**
  - **Instruction/work**
  - **Social interaction**
  - **Noise/crowding**
- Self-stimulation*
- Relief from pain or discomfort*

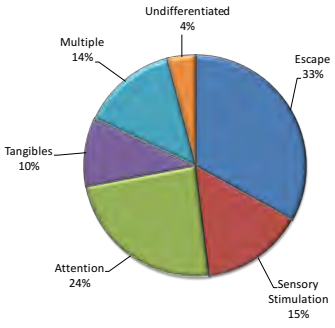
Iwata et al. (1994)

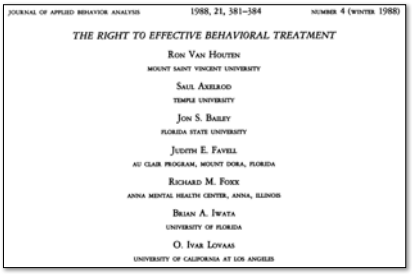
- 152 children with developmental disabilities
- Self-injurious behavior



Hanley et al. (2003)

- Approx. 500 individuals with developmental disabilities
- Self-injurious behavior, aggression, disruption, etc.





JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1988, 21, 381–384 NUMBER 4 (WINTER 1988)

THE RIGHT TO EFFECTIVE BEHAVIORAL TREATMENT

RON VAN HOUTEN
MOUNT SAINT VINCENT UNIVERSITY

SAUL AXELROD
TEMPLE UNIVERSITY

JON S. BAILEY
FLORIDA STATE UNIVERSITY

JUDITH E. FAVELL
AU CLAIR PROGRAM, MOUNT DORA, FLORIDA

RICHARD M. FOXX
ANNA MENTAL HEALTH CENTER, ANNA, ILLINOIS

BRIAN A. IWATA
UNIVERSITY OF FLORIDA

O. IVAR LOVAAS
UNIVERSITY OF CALIFORNIA AT LOS ANGELES

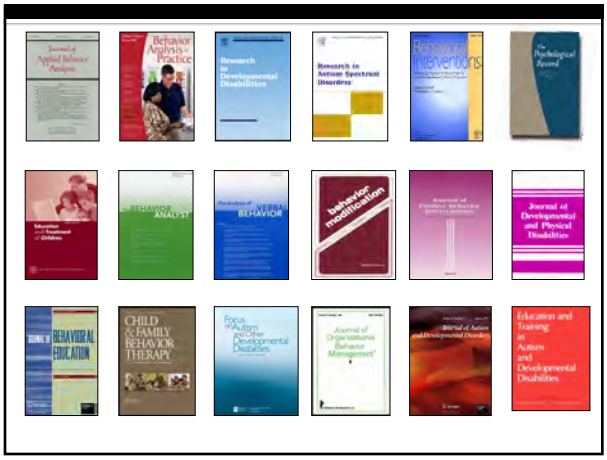
6. An Individual Has a Right to the Most Effective Treatment Procedures Available

Professional and Ethical Compliance Code for Behavior Analysts

2.09 Treatment/Intervention Efficacy.

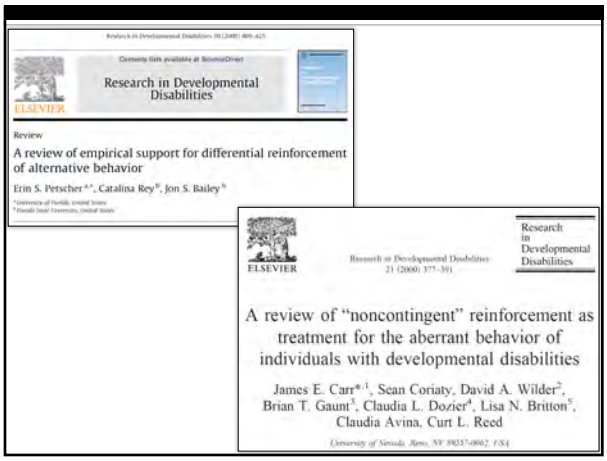
(a) Clients have a right to effective treatment (i.e., based on the research literature and adapted to the individual client). Behavior analysts always have the obligation to advocate for and educate the client about scientifically supported, most-effective treatment procedures. Effective treatment procedures have been validated as having both long-term and short-term benefits to clients and society.

Barriers

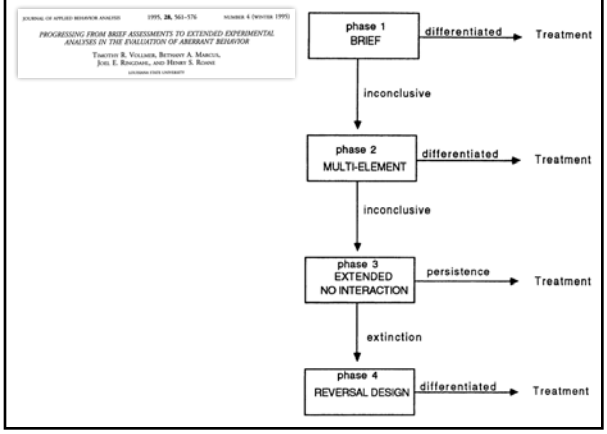


Treatment Selection

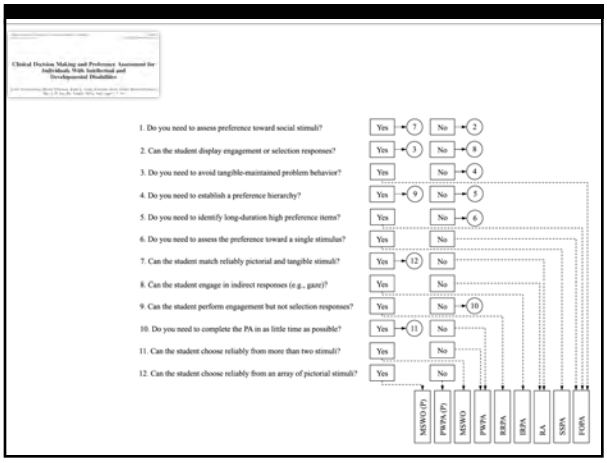
- Graduate students are taught **how** to implement procedures
- Practitioners also need to know **when** to select them
- Some guidance is available from empirical-article discussion sections
- Most literature reviews and texts focus on "how" and not "when"

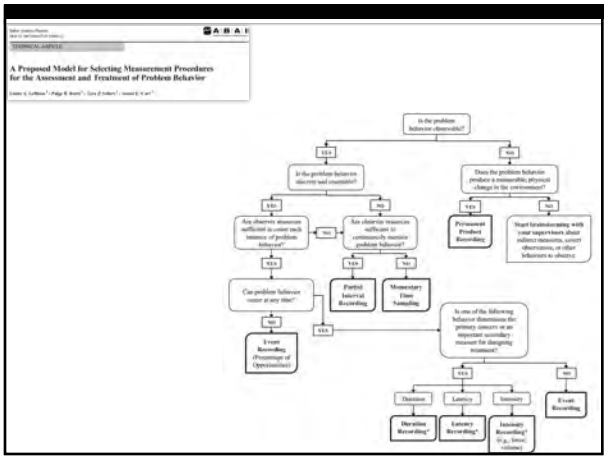


Progressive Models



Decision-Making Algorithms





Function-Based Treatments for Escape-Maintained Problem Behavior: A Treatment-Selection Model for Practicing Behavior Analysts

Kaneen B. Geiger, M.A., James E. Carr, Ph.D., BCBA, and Linda A. LeBlanc, Ph.D., BCBA
Auburn University

ABSTRACT

Escape from instructional activities is a common maintaining variable for problem behavior and a number of effective treatments have been developed for this function. Each of these treatments has characteristics that make them optimal for certain environments and clients, but less optimal for others. We summarize the most commonly researched function-based treatments for escape-maintained behavior, describe the contexts for which they are most appropriate, and provide a clinical model for selecting treatments based on client characteristics and the constraints of the therapeutic environment.

Keywords: Activity choice, clinical decision making, curricular revision, demand fading, differential reinforcement, escape, extinction, function-based treatment, noncontingent reinforcement

jim-carr.net/geiger.pdf

Problem Behavior → Functional Assessment → Escape from Work

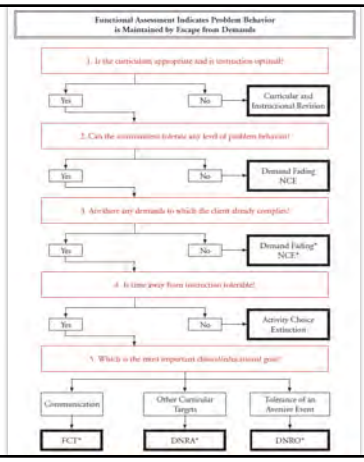
1. Curricular/Instructional Revision
2. Demand Fading
3. Extinction
4. Noncontingent Escape
5. Activity Choice
6. DNRA / FCT
7. DNRO

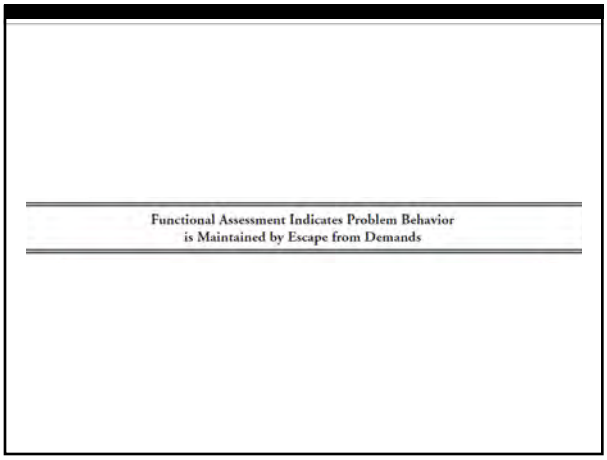
Function-based Interventions for *Escape Functions*

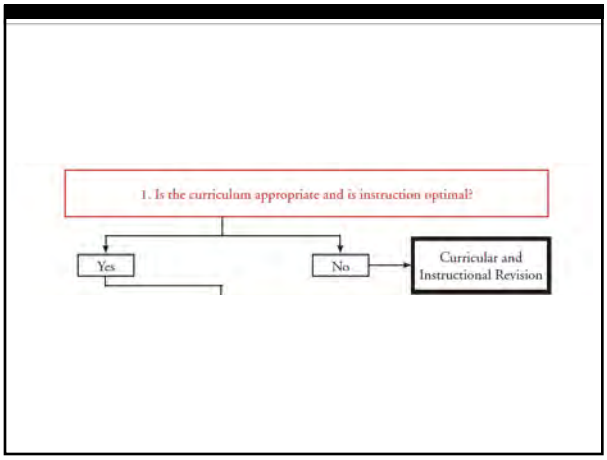
Teach the client the behavior no longer "works"	Reduce the client's motivation to obtain the reinforcer	Teach the client a different way to obtain the reinforcer
Extinction	Curricular Revision	Functional Communication Training
Differential Reinforcement of Zero Rates	Demand Fading	Differential Reinforcement of Alternative Behavior
	Noncontingent Escape	
	Activity Choice	

Guiding Values

- Quality of life
- Safety
- Suitability given available resources
- Current client strengths
- Prioritization of skill needs and educational opportunities

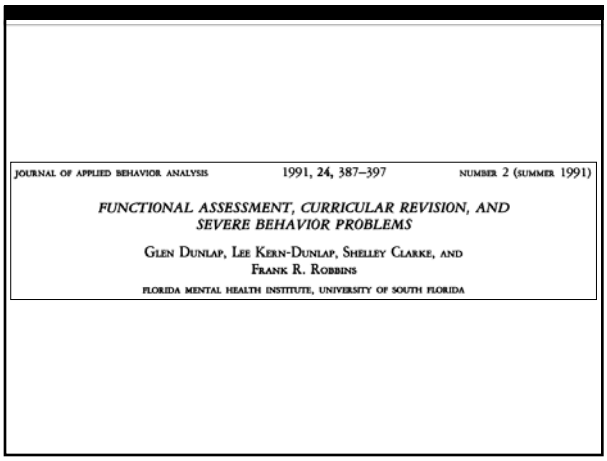






Curricular & Instructional Revision

- **Curricular Revision**
  - Is task too difficult?
  - Too easy/boring?
  - Is it meaningful for the future?
  - Missing prerequisites?
- **Instructional Revision**
  - Is pace too fast/slow?
  - Is error rate too high?
    - Prompts?
  - Enough reinforcement?
  - Different response format?
  - Does everyone teach the same way?

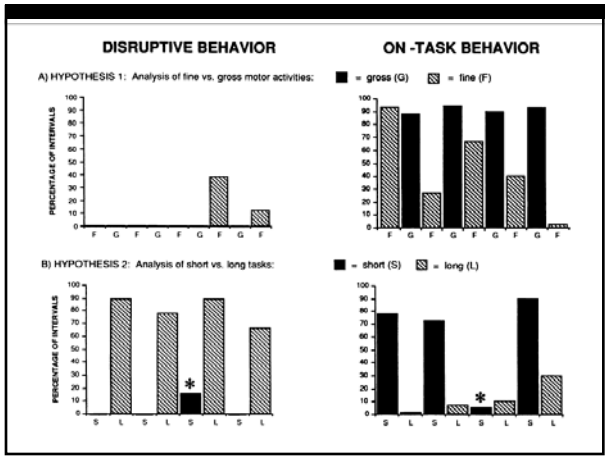


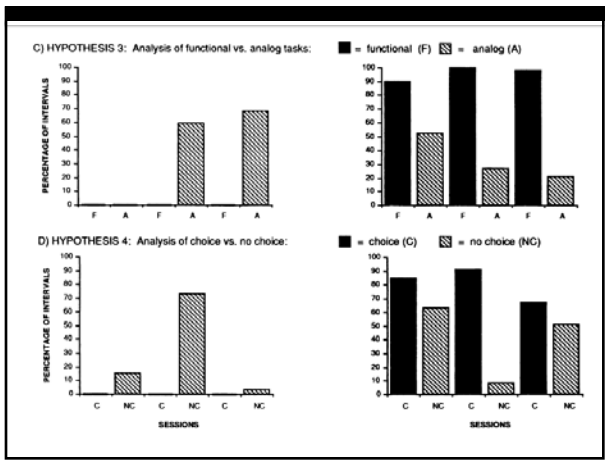
JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1991, 24, 387–397 NUMBER 2 (SUMMER 1991)

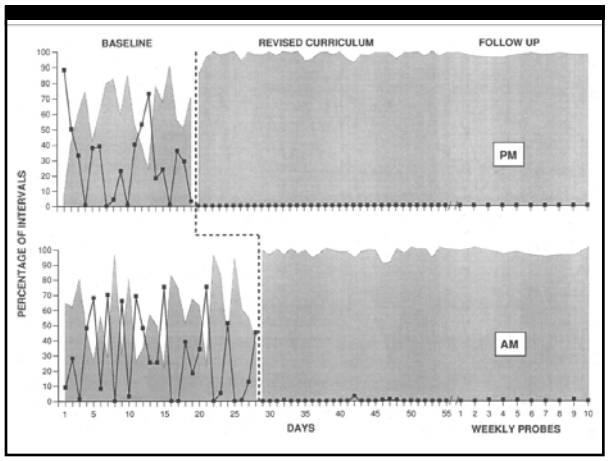
FUNCTIONAL ASSESSMENT, CURRICULAR REVISION, AND SEVERE BEHAVIOR PROBLEMS

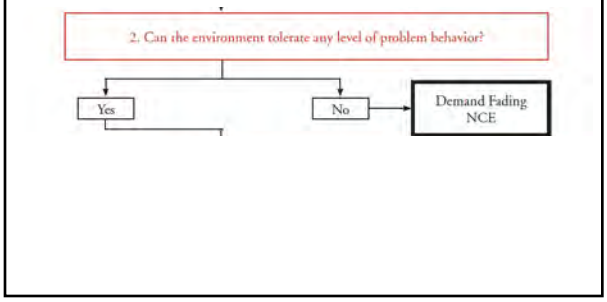
GLEN DUNLAP, LEE KERN-DUNLAP, SHELLEY CLARKE, AND FRANK R. ROBBINS

FLORIDA MENTAL HEALTH INSTITUTE, UNIVERSITY OF SOUTH FLORIDA


DISRUPTIVE BEHAVIOR
ON -TASK BEHAVIOR
A) HYPOTHESIS 1: Analysis of fine vs. gross motor activities:
= gross (G)
= fine (F)
PERCENTAGE OF INTERVALS
F G F G F G F G
B) HYPOTHESIS 2: Analysis of short vs. long tasks:
= short (S)
= long (L)
S L S L S L S L

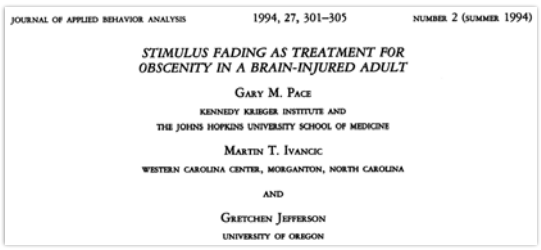

C) HYPOTHESIS 3: Analysis of functional vs. analog tasks:
= functional (F)
= analog (A)
PERCENTAGE OF INTERVALS
F A F A F A
D) HYPOTHESIS 4: Analysis of choice vs. no choice:
= choice (C)
= no choice (NC)
C NC C NC C NC
SESSIONS


BASELINE
REVISED CURRICULUM
FOLLOW UP
PM
AM
PERCENTAGE OF INTERVALS
DAYS
WEEKLY PROBES



Demand Fading & Noncontingent Escape

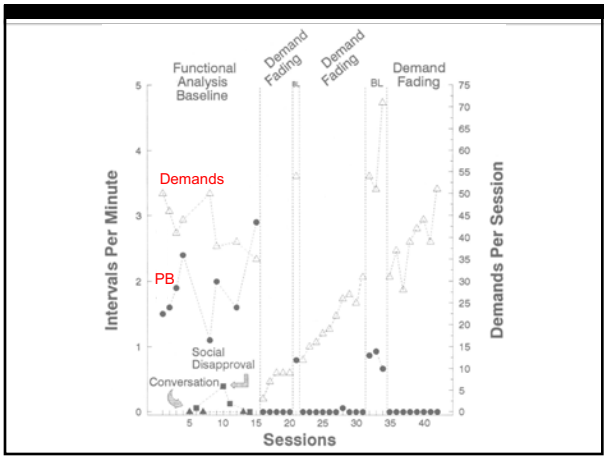
- **Demand Fading**
  - Eliminate demands
  - Slowly fade demands back in
  - Immediate reduction
  - Increases tolerance to demands
  - Schedule thinning
  - Can use without extinction ***



JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1994, 27, 301–305 NUMBER 2 (SUMMER 1994)

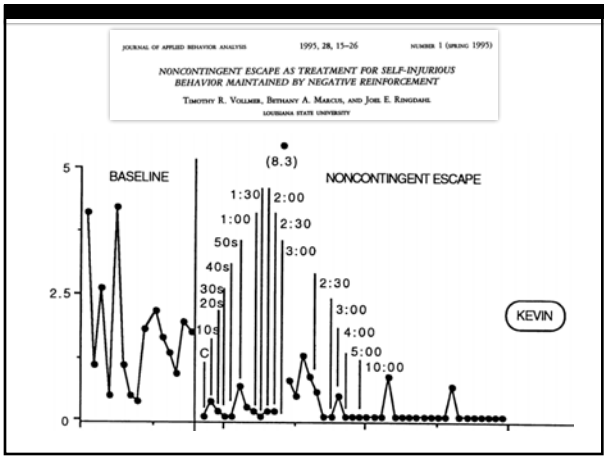
STIMULUS FADING AS TREATMENT FOR OBSCENITY IN A BRAIN-INJURED ADULT

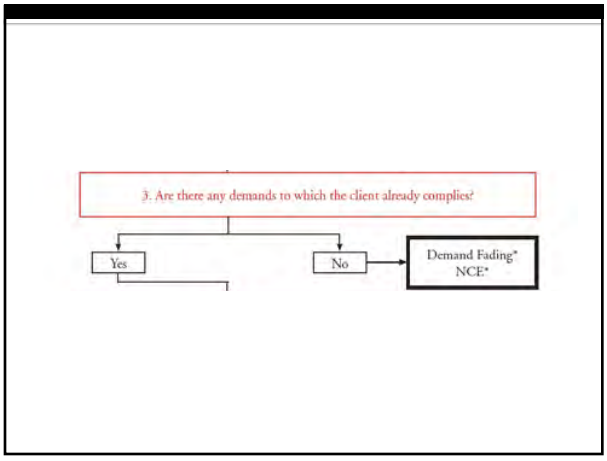
GARY M. PACE
KENNEDY KRIEGER INSTITUTE AND
THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
MARTIN T. IVANCIC
WESTERN CAROLINA CENTER, MORGANTON, NORTH CAROLINA
AND
GRETCHEN JEFFERSON
UNIVERSITY OF OREGON

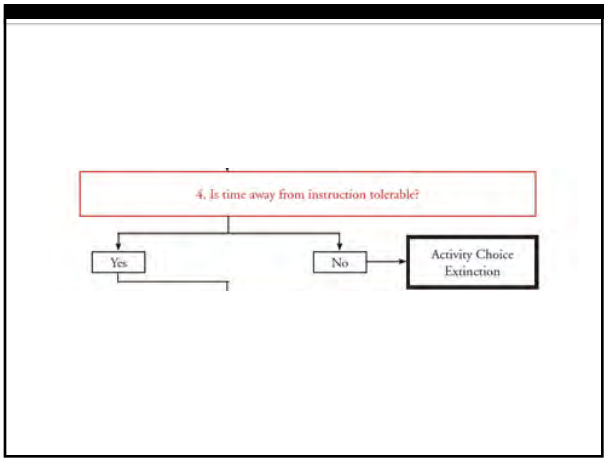


Demand Fading & Noncontingent Escape

- **Noncontingent Escape**
  - Scheduled breaks
  - NO response requirement
  - Immediate reduction
  - Labor intensive at first
  - Schedule thinning
  - Can use without extinction ***







Activity Choice

- Incorporate choice into activity
  - Which of similar materials?
  - Which color?
  - Which one first?
- Antecedent intervention
  - No programmed consequence for problem behavior (extinction possible)
- No missed instruction time

Journal of Behavioral Education, Vol. 8, No. 2, 1998, pp. 151-169

Choice as an Intervention to Improve Behavior: A Review of the Literature

Lee Kern, Ph.D.,[1,5] Christina M. Vorndran,[2] Alexandra Hilt,[2] Joel E. Ringdahl,[3] Barry E. Adelman,[2] and Glen Dunlap, Ph.D.[4]

In recent years, choice making has been evaluated as an intervention for people with disabilities. This review examines applied research during the past two decades using choice as a distinct intervention or as part of an intervention package. Fourteen studies published between 1975 and 1996 were identified that implemented choice as an intervention to increase or decrease a target behavior. These studies applied choice-making in the following three broad areas: (a) vocational or domestic activities; (b) academic activities; and (c) leisure, recreational, or social activities. All of the studies indicated that choice-making procedures resulted in behavioral improvements with some, if not all of the participants.

KEY WORDS: choice; choice-making; choice review; choice-making review.

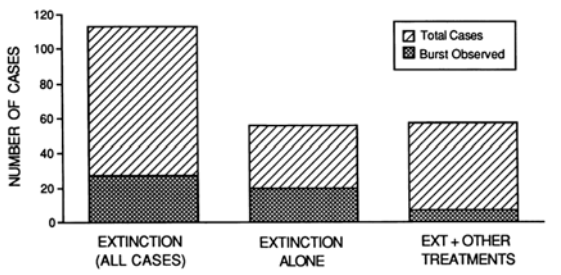
Extinction

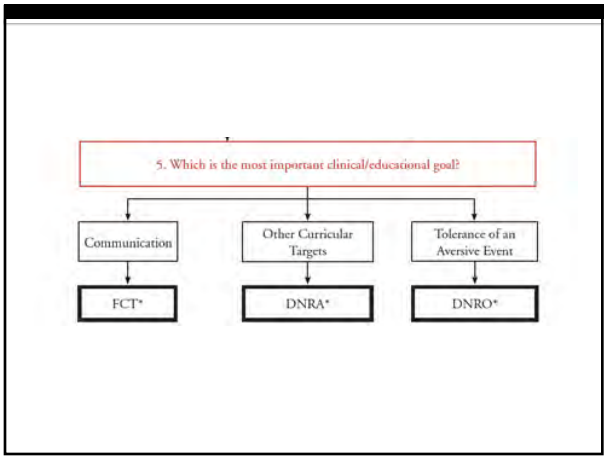
- Maintain instruction … no visible change
  - Difficult & unpleasant … but possible
- Does not address the motivating operation!
- Extinction bursts possible

JOURNAL OF APPLIED BEHAVIOR ANALYSIS 1995, 28, 93–94 NUMBER 1 (SPRING 1995)

PREVALENCE OF THE EXTINCTION BURST AND ITS ATTENUATION DURING TREATMENT

Dorothea C. Lerman and Brian A. Iwata
The University of Florida





Most Important Goals

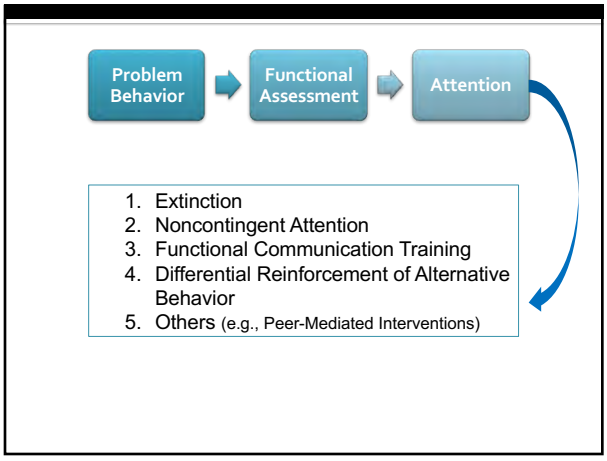
- Which prosocial behavior should you target?
  - Communication = **FCT** (ask for break)
  - Other skills = **DRA** (earn breaks by learning)
  - Tolerance = **DNRO** (earn breaks by tolerating something unpleasant for longer and longer)
- Schedule thinning

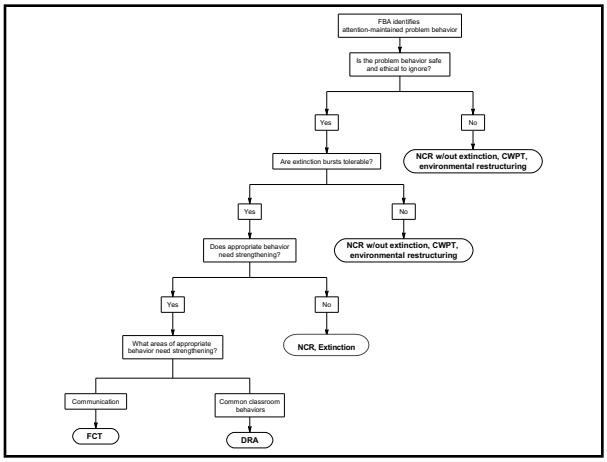
Treatments for Attention-Maintained Problem Behavior: Empirical Support and Clinical Recommendations

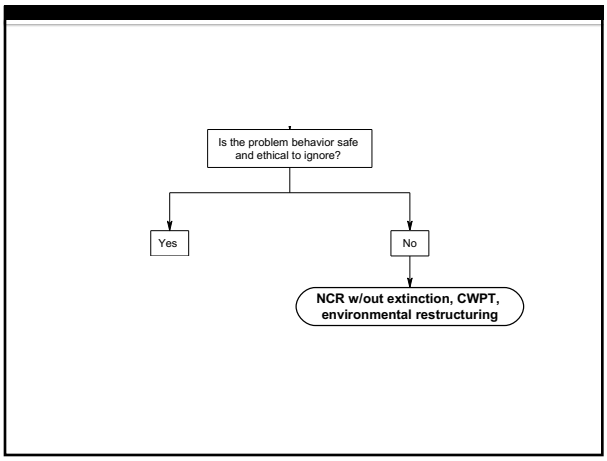
Laura L. Grow
James E. Carr
Linda A. LeBlanc

Journal of Evidence-Based Practices for Schools Vol. 10, No. 1

jim-carr.net/grow.pdf


Problem Behavior
Functional Assessment
Attention
1. Extinction
2. Noncontingent Attention
3. Functional Communication Training
4. Differential Reinforcement of Alternative Behavior
5. Others (e.g., Peer-Mediated Interventions)


FBA identifies attention-maintained problem behavior
Is the problem behavior safe and ethical to ignore?
Yes
No
Are extinction bursts tolerable?
NCR w/out extinction, CWPT, environmental restructuring
Yes
No
Does appropriate behavior need strengthening?
NCR w/out extinction, CWPT, environmental restructuring
Yes
No
What areas of appropriate behavior need strengthening?
NCR, Extinction
Communication
Common classroom behaviors
FCT
DRA


Is the problem behavior safe and ethical to ignore?
Yes
No
NCR w/out extinction, CWPT, environmental restructuring

Noncontingent Attention

- Scheduled attention
  - FT, VT, informal
- NO response requirement
- Immediate reduction
- Labor intensive at first
- Schedule thinning
- Can use without extinction ***

For Classrooms …

- **Class Wide Peer Tutoring**
  - Pair students up
  - 1 teaches, 1 learns
  - Feedback + attention
  - Benefits all students
- **Environmental Restructuring**
  - Change schedule
  - Change physical location
  - Etc.

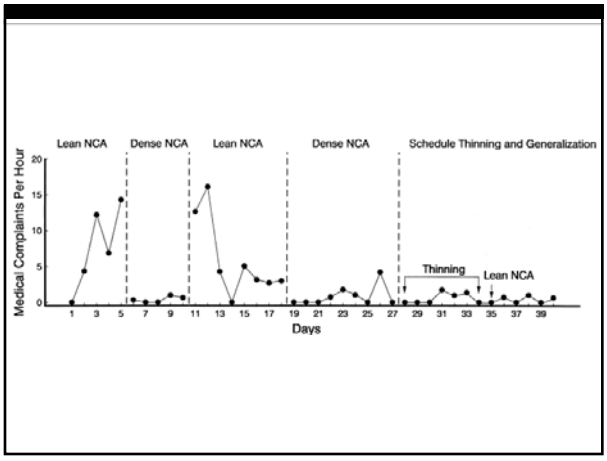
ELSEVIER

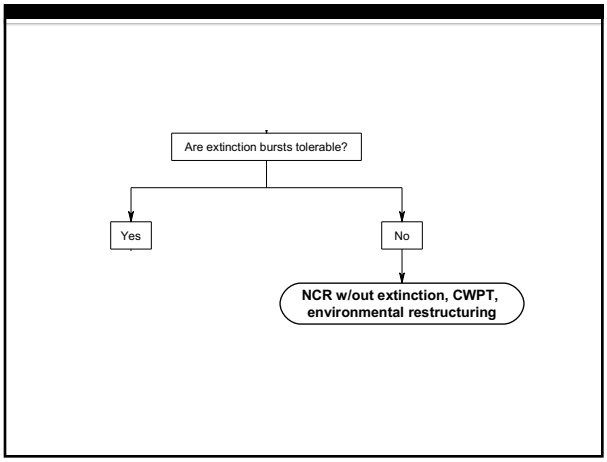
Research in Developmental Disabilities 21 (2000) 215–221

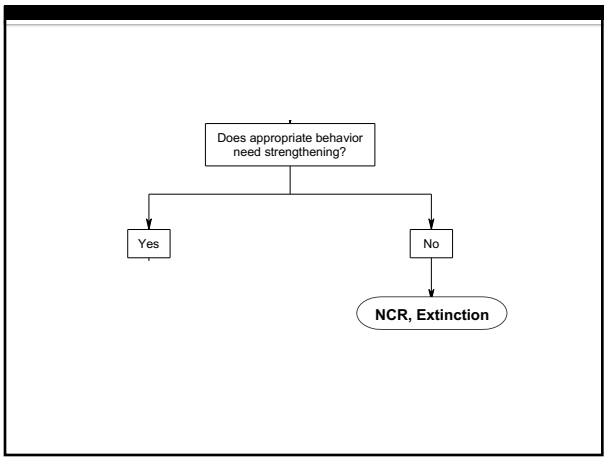
Research in Developmental Disabilities

Noncontingent attention for the treatment of excessive medical complaints in a medically fragile man with mental retardation

Louis P. Hagopian[a], Linda A. LeBlanc[b,*], Kristen A. Maglieri[c]

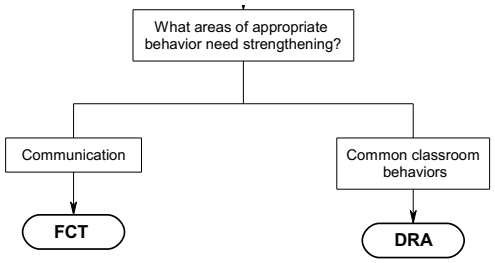

Lean NCA
Dense NCA
Lean NCA
Dense NCA
Schedule Thinning and Generalization
Medical Complaints Per Hour
20
15
10
5
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39
Days
Thinning
Lean NCA


Are extinction bursts tolerable?
Yes
No
NCR w/out extinction, CWPT, environmental restructuring


Does appropriate behavior need strengthening?
Yes
No
NCR, Extinction

Extinction

- Withhold all attention following behavior
- Does not address the motivating operation!
- Extinction bursts possible
- Consider ethicality, practicality, and feasibility



Most Important Goals

- Communication = **FCT** (ask for interaction)
- Other skills = **DRA** (earn attention/ praise with prosocial behavior)
  - Academics
  - Waiting
  - Social Behavior

Concluding Comments

- These algorithms are a starting point
  - Revise based on experience and setting
- These algorithms can be empirically evaluated
- New algorithms are needed
  - Consider developing & sharing!

Thank you.

Activity 1: Escape-Maintained Problem Behavior Clinical Algorithm

1. Complete the algorithm by circling your team's response to each question until you reach a "no" or finish.

2. When you have identified all possible interventions (all options above your lowest option are still viable), use the table to compare strengths and considerations.

3. Select your intervention(s).

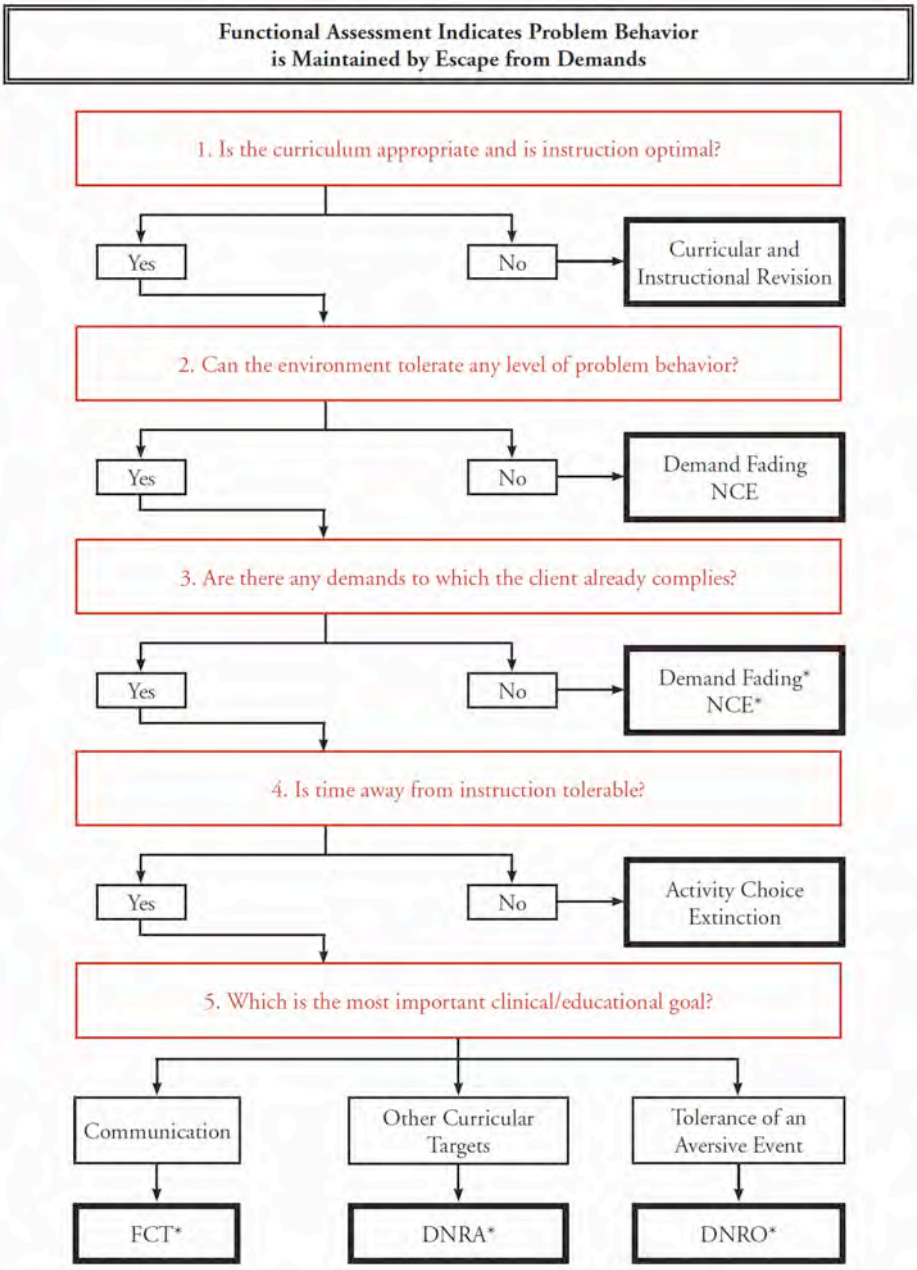
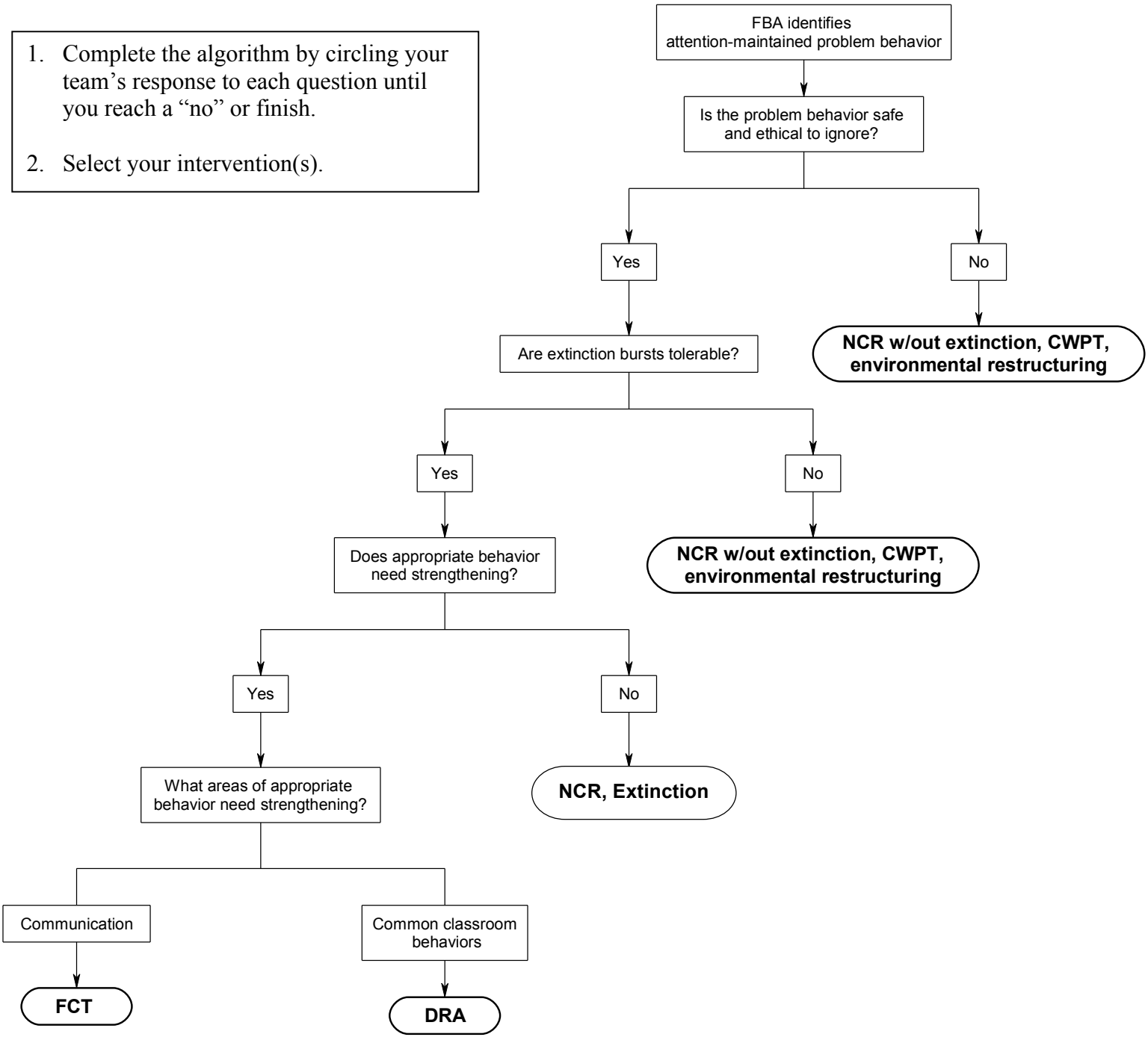


Table. Strengths and potential limitations of treatments for escape-maintained problem behavior.

Treatment	Description	Strengths	Potential Limitations
Activity Choice	Offer a choice among selected tasks	• Might prevent problem behavior • No lost instruction time • Provides choice-making opportunities • Increased compliance	• No programmed consequence for problem behavior • Requires preparation of additional instructional materials • Requires choice-making skills • Requires an appropriate curriculum be in place • Requires learners who can tolerate some instruction
Curricular and Instructional Revision	Change curricular targets or instructional procedures	• Results in improvements in teaching • Might benefit other learners in the environment • Might produce more efficient and effective skill acquisition • Might prevent problem behavior	• Requires time, effort, and expertise to change curriculum/instruction • No programmed consequence for problem behavior
Demand Fading	Remove all demands, then gradually reintroduce them over time; include escape extinction	• Immediately reduces problem behavior • The first step of the intervention (demand removal) is often already done • Might prevent problem behavior • Might increase tolerance of instruction • A good match for dangerous behavior and large clients	• Gradually fading in demands might be logistically difficult • Requires expertise to establish and oversee the fading process • Periods of non-instruction could be disruptive to classroom activities
Differential Negative Reinforcement of Alternative Behavior	Provide a break from work after a new, alternative behavior and place the problem behavior on extinction (see text for other variations)	• Actively targets new skills or increases existing ones • Provides continued access to escape throughout the intervention • May be used without extinction	• Periods of non-instruction could be disruptive to classroom activities • Requires expertise to establish and oversee schedule thinning process
Differential Negative Reinforcement of Zero Rates of Behavior	Provide a break from work if the problem behavior has not occurred for a specified amount of time and place the problem behavior on extinction	• Provides continued access to escape throughout the intervention • Useful for increasing tolerance of necessary, but aversive, stimuli	• Requires constant monitoring for occurrences of problem behavior • Periods of non-instruction could be disruptive to classroom activities • Requires expertise to establish and oversee schedule thinning process
Extinction	Do not provide a break from work contingent on problem behavior; continued presenting the task regardless of problem behavior	• Provides a contingency for problem behavior • Compatible with other treatments to enhance their effectiveness	• High response effort of implementation • Might produce a response burst or aggression • Might make behavior more resistant to extinction without strong treatment integrity • Does not result in immediate response suppression
Functional Communication Training	Provide a break from work for a new, communicative response and place the problem behavior on extinction (or punishment)	• Actively targets new skills or increases existing ones • Provides continued access to escape throughout the intervention • Preferred by some individuals over NCE and extinction • May be used without extinction	• May result in high rates of the communicative response • Does not result in immediate response suppression • Periods of non-instruction could be disruptive to classroom activities • Requires expertise to establish and oversee schedule thinning process
Noncontingent Escape	Provide breaks from work on a time-based schedule, irrespective of problem behavior	• Provides continued access to escape throughout the intervention • Immediately reduces problem behavior • Might prevent problem behavior • May be used without extinction	• May produce adventitious reinforcement of problem behavior • Periods of non-instruction could be disruptive to classroom activities • Requires expertise to establish and oversee schedule thinning process

Activity 2: Attention-Maintained Problem Behavior Clinical Algorithm

1. Complete the algorithm by circling your team's response to each question until you reach a "no" or finish.
2. Select your intervention(s).