

## An Introduction to the Analysis of Verbal Behavior And Autism Intervention

Presented by:  
Vincent J. Carbone, Ed.D., BCBA-D  
Carbone Clinic

Stony Point, NY  
[www.CarboneClinic.com](http://www.CarboneClinic.com)

2014 National Autism Conference  
Pennsylvania Department of Education  
&  
The Pennsylvania State University  
State College, PA

August 6, 2014

### **CHARACTERISTICS OF A BEHAVIORAL LANGUAGE PROGRAM**

- First of all, reliance on the same basic behavioral principles that account for the learning of most other forms of behavior (e.g., reinforcement, extinction, stimulus control).
- Treatments based upon behavior analytic principles have been demonstrated to be effective forms of intervention for children with autism.
- Consequently, ABA practitioners who emphasize the teaching of verbal behavior also use behavioral principles as the foundation for their work.
- This approach shares several characteristics with other intensive behavioral approaches (Lovaas, 1987) to include:
  - The precise organization of the learning environments, with emphasis upon early intervention.
  - Frequent daily training sessions.
  - Teaching both speaker and listener behavior.
  - And the use of discrete trial training methods (Carr & Firth, 2005).

## **CHARACTERISTICS OF A BEHAVIORAL LANGUAGE PROGRAM (cont.)**

### **Differences with other intensive treatment approaches:**

- Use of B. F. Skinner's (1957) classification of language with initial emphasis upon teaching expressive language and manding (requesting).
- Emphasis on using the principle of motivation (motivating operation) during teaching.
- Reliance on the VB-MAPP (Verbal Behavior Milestones Assessment and Placement Program; Sundberg, 2008) to guide the sequence of teaching skills.
- Use of stimulus control transfer procedures to teach across the classes of verbal behavior, leading to the development of an increasingly complex verbal repertoire (e.g., conversation).
- Reliance on the literature of topography- and selection-based verbal behavior to determine augmentative and alternative communication methods for non-vocal learners.

3

## **Language Acquisition**

4

## Non-Behavioral Accounts of Language Development

- Traditional theorists (such as Chomsky, Piaget, Pinker, Brown, Brunner, etc.) view language development as an innate, biological process, not due to environmental factors, but instead controlled by internal cognitive mechanisms which accept, classify, code, encode, and store information.

5

- According to these theories, **words and sentences**, or the **form of language**, are the important units of analysis.
- Emphasis is placed upon the topography or form of language such as:
  - Syntax (ordering of words)
  - Grammar (conventions or rules)
  - Morphemes (smallest unit of meaning e.g. -ed, -ing, -s)
  - Phonemes (sounds)
  - Semantics (word meaning)
  - Pragmatics (social use of language)
  - Mean Length of Utterance (MLU)
  - Lexicon (collection of words)
- Words are typically classified into nouns, verbs, adjectives, etc.

6

- This traditional account classifies language into two categories:
  - Expressive language
  - Receptive language
- The traditional account of language dominates the field of language assessment as well as the treatment approach for children who are language disordered or delayed.

7

#### **SUMMARY OF THE NON BEHAVIORAL ANALYSIS OF LANGUAGE**

1. Verbal behavior is explained in terms of underlying mental causes and activities
2. Persons use words in order to express themselves, convey ideas or to expressing meaning.
3. The word is regarded as a symbol that is used to represent the ideas it is designed to convey.
4. The meaning of the word is defined by its referent.

8

5. The meanings of words are stored in the lexicon which is accessed prior to speech.
6. Language is regarded as the output of various “cognitive mechanisms” that manipulate the symbols and generate the language according to rules.
7. There are various aspects of speech (nouns, verbs, adjectives, adverbs, prepositions, etc.) and various rules of grammar and syntax regarding the usage and manipulation of these parts of speech.
8. These rules are thought to be mental and innate. This includes Chomsky’s idea of innately acquired universal transformational grammar that resides in the Language Acquisition Device.

9

9. What a person says emerges when various rules are applied to the underlying grammatical structure.
10. All people are born with these universal underlying structures that account for the development of language.
11. The language one ultimately speaks results from exposure to the sounds of a language early on in life which then trigger the underlying structures to enable the individual to speak consistent with the rules of grammar.

Jay Moore (2007, p. 166)

10

## Behavioral Account of Language



- In 1957, Skinner wrote the book *Verbal Behavior* where he offered a behavioral interpretation of language.
- In contrast to traditional theorists, B. F. Skinner argued that language is not some innate, cognitive or developmental process but rather language is behavior, verbal behavior, and is best explained by same environmental variables that explain all other behavior.

11

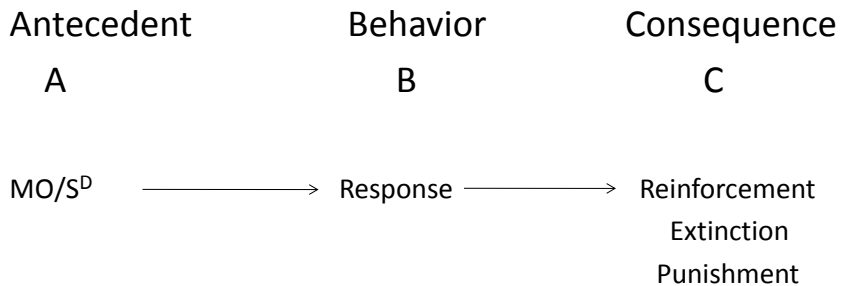
## Behavior Analysis

- Antecedent: before behavior
  - Stimulus control
  - Motivation (MO)
- Behavior
  - Response form (all kinds of behavior)
- Consequence: immediately following behavior
  - Reinforcement: increases behavior
  - Extinction: weakens behavior
  - Punishment: decreases behavior

12

## Behavior Analysis

- Behavior is analyzed through the three-term contingency.



13

- Therefore as behavior, verbal behavior is best analyzed and explained by considering the environmental stimuli that precede it, or its antecedents, and stimuli that follow it, or its consequences.
- In a behavioral analysis of language, a word is not defined by its form rather a word is defined by its **function** or controlling variables.
- Language is classified into functional categories which are referred to as verbal operants.

14

## B.F. SKINNER'S DEFINITION OF VERBAL BEHAVIOR

### NONVERBAL BEHAVIOR

Want Water -----walk to the refrigerator-----Get Water

### VERBAL BEHAVIOR

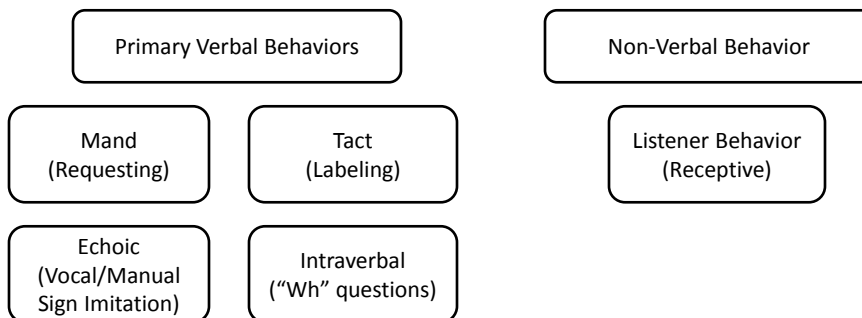
Want Water-----say water-----Person Delivers Water

sign Water  
point to water  
whine  
exchange a picture  
kick someone  
scream  
write water

Saying Water is Behavior- Movement of  
Muscles of the Vocal Apparatus that Produces  
Acoustic Stimulus.

15

## Behavioral Classification of Language



16



## Skinner's (Nature's) Verbal Behavior Categories

### Primary Verbal Responses

- **Mand** (Requesting) : Asking for reinforcers that you want. Saying "candy" because you want candy. (Birth to 12 months-non-vocal mands in the form of crying; pointing, 12 months first word, then 2 words (noun & verb) at 24 months; mand for information at @ 36 months)
- **Tact** (Labeling): Naming or identifying objects, actions, events, etc. Saying "candy" because you see candy. (12 months- 1 word; 24 months- 2 word (noun & verb) at 24 months; 36 months- at least 500 words)
- **Echoic** (Vocal Imitation): Repeating what is heard. Saying "candy" after someone else says "candy". (Birth -6 months universal sounds; 6 months-12 months- sounds heard during daily activities; 12 months- echo some phonemes and phoneme combinations & word approximations)
- **Intraverbal** ("wh" Questions") : Answering questions or having conversations where your words are controlled by other words. Saying "candy" when someone else says "What do you like to eat?" (30 months- 1 word responses; complexity & length of utterances increase over time; full sentences by 48 months)

### Non-Verbal

#### Listener Responses

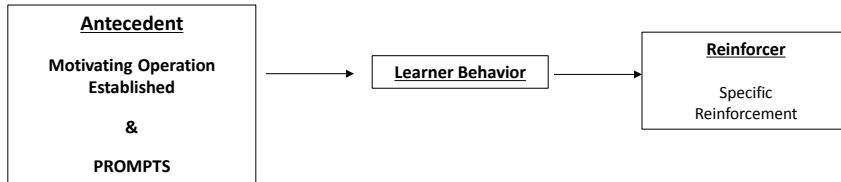
- **Listener Behavior** (Receptive): Motor responses to what someone says.

17

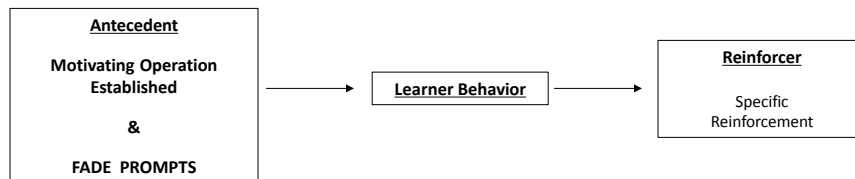
## VERBAL & NON-VERBAL OPERANT RESPONSES

18

## TRANSFER OF STIMULUS CONTROL FOR TEACHING MANDING



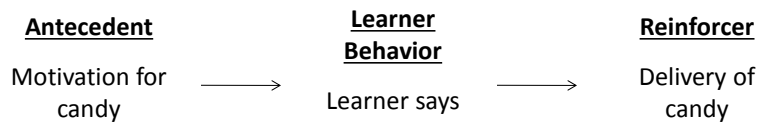
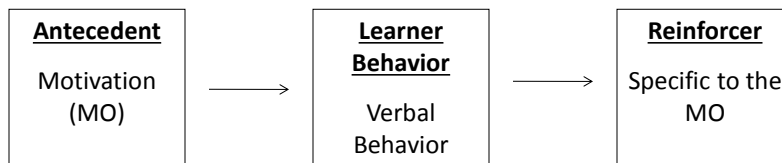
TRANSFER STIMULUS CONTROL  
BY FADING THE PROMPT



19

## MAND

**Mand** (requesting): Asking for reinforcers that you want. Saying "candy" because you want candy.

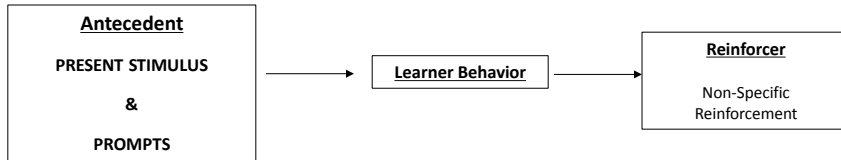


[Video – Mand](#)

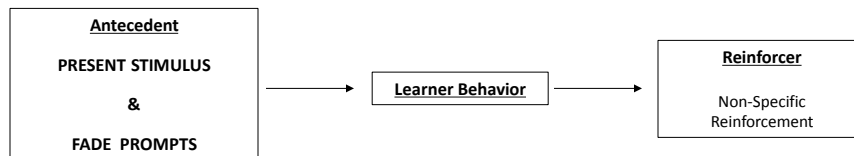
Sign Mand

20

## TRANSFER OF STIMULUS CONTROL FOR TEACHING TARGET SKILLS



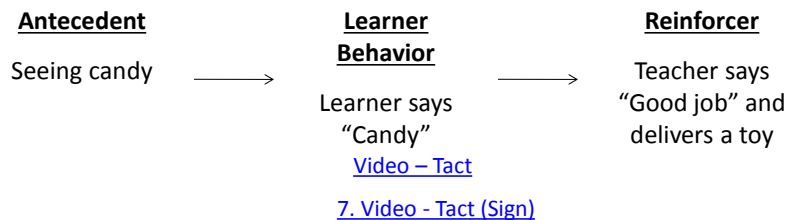
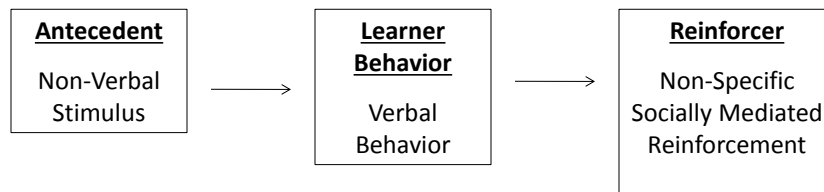
TRANSFER STIMULUS CONTROL  
BY FADING THE PROMPT



21

## TACT

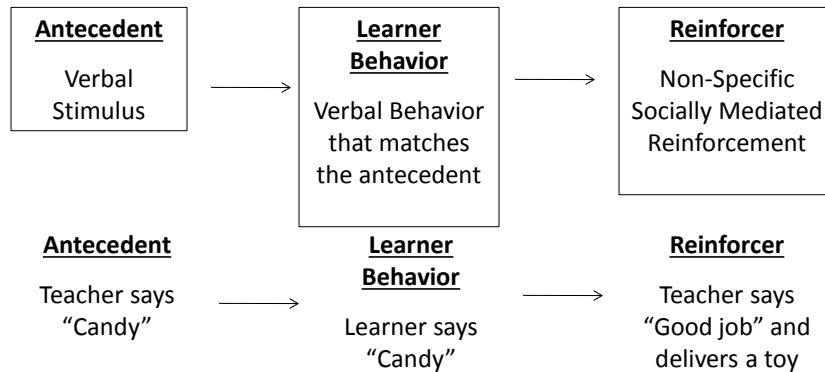
**Tact** (labeling): Naming or identifying objects, actions, events, properties, etc.  
Saying "candy" because you see candy.



22

# ECHOIC

**Echoic** (vocal imitation): Repeating exactly what is heard. Saying “candy” after someone else says “candy.”

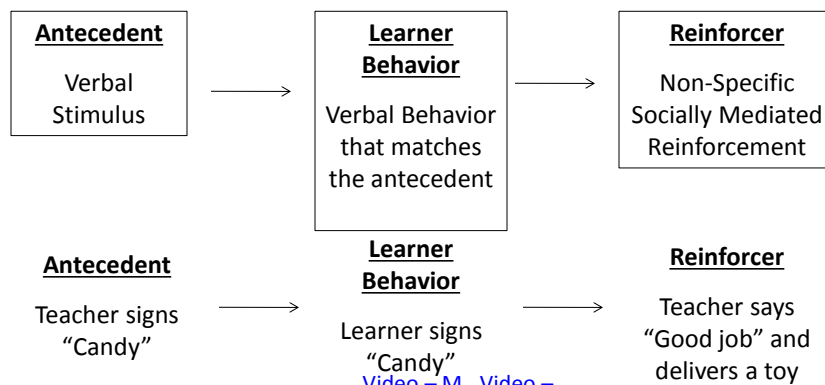


[Video - Echoic](#)

23

# MIMETIC

**Mimetic** (imitating manual signs): Copying someone’s motor movements. Signing “candy” after someone else signs “candy.”

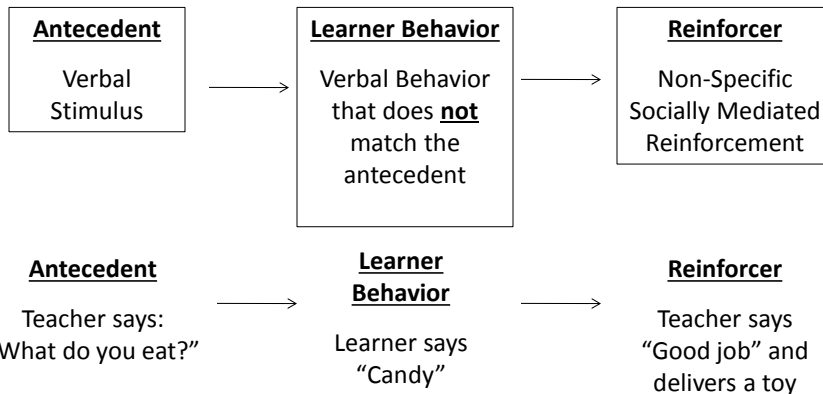


[Video – M . Video – Motor Imitation I](#)

24

# INTRAVERBAL

**Intraverbal** (“wh” questions): Answering questions, fill-ins, or having conversations where one’s words are controlled by another person’s words. Saying “candy” when someone else asks “What is something you eat?”



[Video – Intraverbal 1](#)

[Video – Intraverbal 3](#)

[Video - Intraverbal](#)

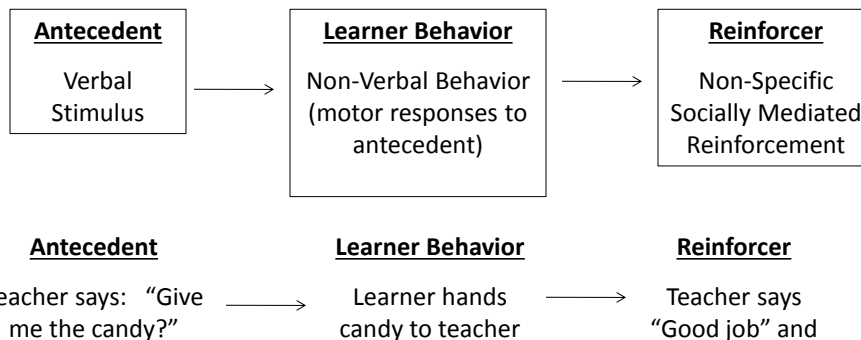
[Video – Intraverbal 2](#)

25

# LISTENER BEHAVIOR

(Non-Verbal Behavior)

**Listener Behavior** (receptive): Following instructions or motor responses to what someone else says. Handing someone candy after another person says “Give me some candy.”



[Video – Listener Responding](#)

[Video – LRFFC](#)

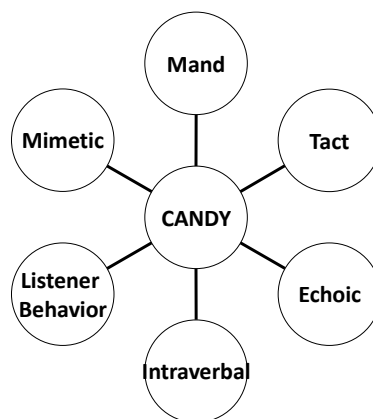
26

## Error Corrections

[11. Video – Error Correction](#)

27

## Teach All The “Meanings”



28

## ACTIVITY

### IDENTIFYING THE OPERANTS

29

## SCENARIOS

1. Child says, "candy," because he wants some.
2. Child signs, "ball," when he sees one.
3. Child touches cup when teacher says, "Touch the cup."
4. Child says, "eat," when she is hungry.
5. Child says, "red," when teacher says, "Tell me a color."
6. Child gives an apple when teacher says, "Give me something that is red."
7. Child hits the teacher when he wants his attention.
8. Child signs, "move," to parent when she is blocking sight of the TV.
9. Child says, "up," after teacher says, "up."
10. Child says, "blue," when teacher says, "red."
11. Child says, "Go away," when she sees teacher coming.
12. Child says, "What's that?" when he sees a cork screw.
13. Child signs, "dog," when you sign, "dog."
14. Child touches the kangaroo when teacher says, "Touch the marsupial."

30

## SCENARIOS (cont.)

15. Child says, "dog," when he hears a dog barking outside.
16. Child asks, "How are you?" when he meets you.
17. Child signs, "up," when you sign, "down."
18. Child says, "yes," when you hold up a pen and ask, "Is this a pen?"
19. Child says, "yes," when you ask, "Do you like to play baseball?"
20. Child says, "salty," while chewing a potato chip.

[VIDEO 1](#)

[VIDEO 2](#)

Sylvia Video

31

## The Role of the Reflexive-Conditioned Motivating Operation (CMO-R) During Discrete Trial Instruction of Children With Autism

Vincent J. Carbone,<sup>1</sup> Barry Morgenstern,<sup>2</sup> Gina Zecchin-Tirri,<sup>3</sup> and Laura Kolberg<sup>3</sup>

### Abstract

The principle of motivation has resurfaced as an independent variable in the field of behavior analysis over the past 20 years. The increased interest is the result of refinements of the concept of the motivating operation and its application to the learning needs of persons with developmental disabilities. Notwithstanding the increased emphasis upon modification of motivating operations to reduce problem behavior, there is limited recognition of this important behavioral variable in autism treatment literature. An overview of antecedent-based instructional modifications that lead to a reduction of escape and avoidance behavior of children with autism during instruction is provided. An analysis of these instructional methods as motivating operations is proposed. A conceptually systematic analysis of the influence of instructional methods is offered as a tool for improving the selection and implementation of effective teaching procedures.

### Keywords

motivating operations, establishing operations, autism, escape and avoidance behavior, discrete trial instruction

HAMMILL INSTITUTE  
ON DISABILITIES

Focus on Autism and Other  
Developmental Disabilities  
25(2) 110-124  
© 2010 Hammill Institute on Disabilities  
Reprints and permission:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1088357610364393  
http://focus.sagepub.com

SAGE

32



# Supporting Research for Fast Paced Instruction

## The Effect of Varying Teacher Presentation Rates on Responding During Discrete Trial Training for Two Children With Autism

Behavior Modification  
XX(X) 1-26  
© The Author(s) 2012  
Reprints and permission:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0145445512463046  
http://bmo.sagepub.com  
**SAGE**

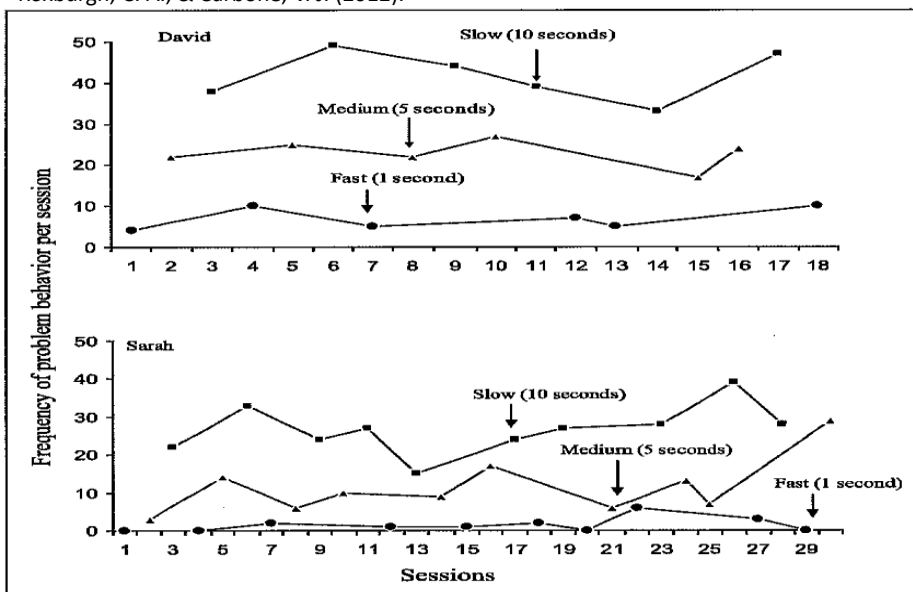
Carole A. Roxburgh<sup>1</sup> and Vincent J. Carbone<sup>1</sup>

### Abstract

Recent research has emphasized the importance of manipulating antecedent variables to reduce interfering behaviors when teaching persons with autism. Few studies have focused on the effects of the rate of teacher-presented instructional demands as an independent variable. In this study, an alternating treatment design was used to evaluate the effects of varied rates of teacher-presented demands (1 s, 5 s, 10 s) on the occurrence of problem behavior, opportunities to respond, responses emitted, accuracy of responding, and magnitude and rate of reinforcement for two children with autism. Results indicated that fast presentation rate (1 s) resulted in lower rates of problem behavior, higher frequencies of instructional demands, higher frequencies of participant responding, and greater magnitudes and rates of reinforcement. Differential effects on accuracy of responding across conditions were not observed. Implications for manipulating the rate of teacher-presented instructional demands as an antecedent variable to reduce problem behavior are discussed.

33

Roxburgh, C. A., & Carbone, V. J. (2012).



**Figure 1.** Frequency of problem behavior per session during fast, medium, and slow teacher presentation rates for David and Sarah

34

## The Importance of the Behavioral Classification of Language

- A word is not defined by its form. A word is defined by its functional category (e.g. mand, tact).
- For example the same word “candy” has many different meanings based upon the conditions under which you learned to say it (antecedents and consequences).
- Many children with autism do not acquire verbal repertoires that include responses within each category for the same word.

35

- This happens because the categories (e.g. mand, tact) are functionally independent and responses (words) may not transfer across the categories without explicit training. For example, it can not be assumed that because a child tacts “candy” when they see candy that they will mand for “candy” when they want it.
- A common profile of children with autism includes a large receptive repertoire and many tacts but very few mands and almost no intraverbals.
- This problem may be the result of instruction that failed to assess the language repertoire of a child according to a behavioral classification and then failed to recognize the need for explicit teaching.
- Frequently, the child’s “cognitive abilities” and not the teaching is said to account for the failure to develop spontaneous language and conversation skills.

36

# The Mand

37

## What is the Mand?

- A mand is essentially a request.
- Mands are emitted when we are motivated for something.
- Manding is verbal behavior that produces immediate benefit for the learner and therefore strengthens it.
- This is the first repertoire learned by all children.

38

## Why is the Mand Important?

- Development of a strong manding repertoire may be essential for the development of all other types of verbal behavior.
- Manding teaches a child that verbal behavior is valuable; other repertoires teach what to say once the learner "wants to talk."
- By teaching a mand repertoire you may replace some problem behavior.
- It is unlikely that you will be able to develop a verbal behavior repertoire in an early learner by just requiring the child to label items (tact) or talk about things (intraverbal).

39

## When to Teach the Mand

- Teach mands at times when the motivation is the greatest for the item or activity.
- It is imperative that you begin teaching the child to ask for his or her strongest reinforcers.

40

## Rules For Teaching Manding

- Teaching must occur in the natural, everyday environment where motivation is strong (NET).
- Make sure the child has a motivating operation (MO) for an item before prompting a mand.
- Capture and contrive as many opportunities per day to teach mands.

41

## Rules For Teaching Manding

- Count the number of mands, prompted and unprompted, the controlling variables, and variety per day or per session and graph your results.
- Prompt mands initially to teach the child that its easy to get things with verbal behavior so as to not turn the child off to communicating.

42

## Rules for Teaching Manding

- Run multiple trials a day, across all mands.
- Within each trial attempt to use less of a prompt than was needed on the previous trial.
- Get the best quality response with the least amount of prompting.

43

## Rules For Teaching Manding

- Use Differential Reinforcement:  
Differential Reinforcement is defined as -  
"Within a response class, reinforcing only those responses that meet a specific criterion and placing all other responses on extinction."
- Practice teaching mands so that you are skilled in how and when to reinforce, what approximations to accept, what level of prompt to provide and how to fade prompts quickly.

44

# Rules For Teaching Manding

- Consistency in methods across trainers is essential as is contriving lots of opportunities for generalization.
- Be a “giver” and not a “taker” – do not remove reinforcers just to require the child to mand again.
- Avoid “killing” MOs - to prevent this with early learners, give some items for “free” or require less response effort at times.
- An orderly and progressive curriculum must be in place.

## MAND VIDEOS

45

The Analysis of Verbal Behavior

2007, 23, 89–102

### Transferring Control of the Mand to the Motivating Operation in Children with Autism

Emily J. Sweeney-Kerwin, Vincent J. Carbone, Leigh O’Brien,  
Gina Zecchin, and Marietta N. Janecky, Carbone Clinic

Few studies have made use of B. F. Skinner’s (1957) behavioral analysis of language and precise taxonomy of verbal behavior when describing the controlling variables for the mand relation. Consequently, the motivating operation (MO) has not typically been identified as an independent variable and the nature of a spontaneous mand has been imprecisely described. The purpose of this study was to develop procedures to bring the mand response under the control of the relevant MO and therefore free it from the multiple controls that are more easily identified by practitioner’s who rely on Skinner’s analysis and taxonomy. Using a rolling time delay and prompt fade procedure both participants’ mand repertoires were successfully transferred to the relevant MO and a listener and described within the context of a behavioral analysis of language.

*Key words:* verbal behavior, motivating operation, mand, autism.

46

Sweeney-  
Kerwin, E. J., et  
al. (2007).

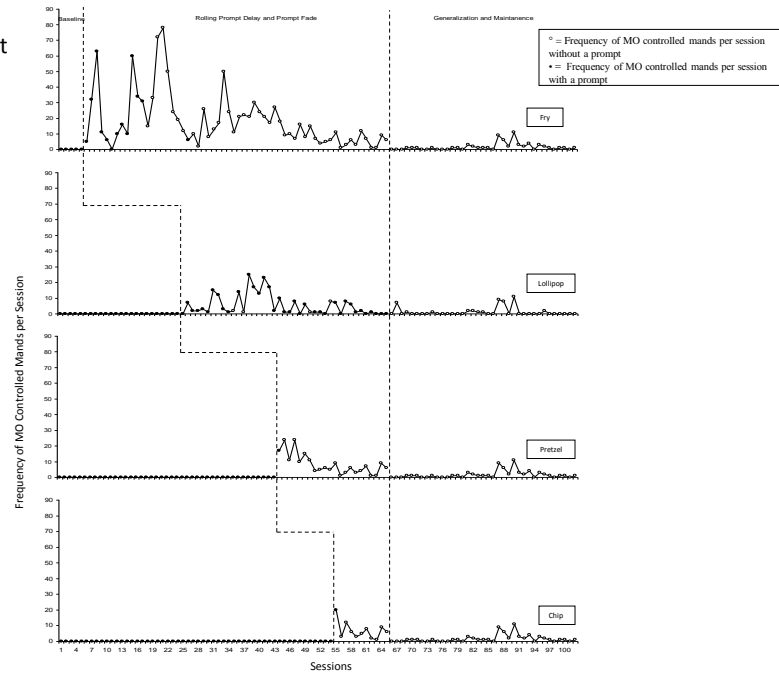


Figure 1. Frequency of MO controlled mands per session during baseline (BL), treatment, and generalization and maintenance conditions for all targeted items for Martin.

47

Sweeney-  
Kerwin, E. J., et  
al. (2007).

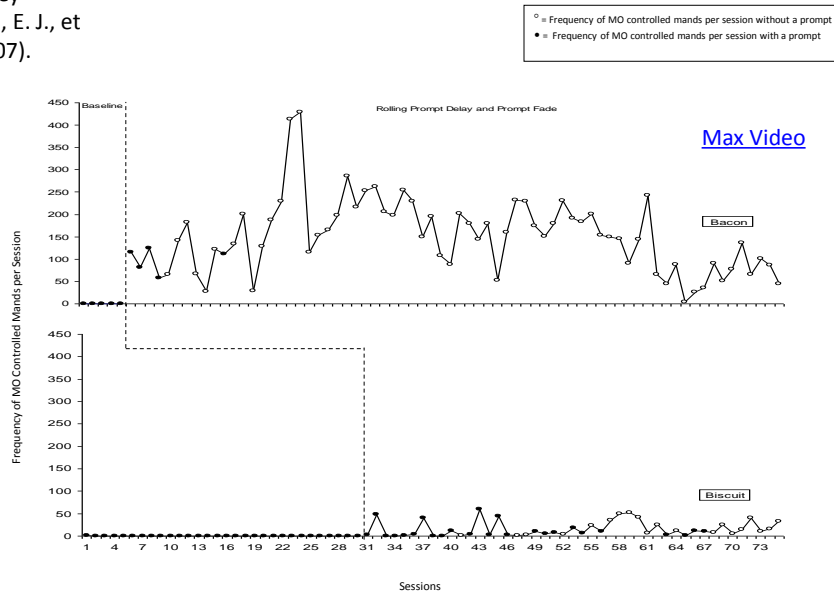


Figure 2. Frequency of MO controlled mands per session during baseline (BL) and treatment conditions for Jeff.

48



The Analysis of Verbal Behavior

2013, 29, 000–000

## The Establishing Operation and Teaching Verbal Behavior

Vincent J. Carbone, Carbone Clinic

Twenty years ago Michael (1993) refined and extended the concept of the conditioned establishing operation (CEO). With this paper he updated his previous treatment of the topic (Michael, 1982) by providing terminological refinements and conceptually clear descriptions of the reflexive and transitive CEOs. In the 20 years since the publication of that paper there has been an increase in the application of CEOs as independent variables in the teaching of verbal behavior in applied setting. The purpose of this paper is to provide a brief overview of clinical applications of the EO to the teaching of verbal behavior during the last 20 years.

*Key words:* applied, establishing operation, motivation, verbal behavior

---

49

## Extensions of Teaching Verbal Behavior And the Mand

### 1. Interrupted Chain Procedure

### 2. Teaching Social Skills

50

# Increasing the Mand Repertoire of Children With Autism Through the Use of an Interrupted Chain Procedure

Kristin M. Albert, Vincent J. Carbone, Danielle D. Murray, Margaret Hagerty, and Emily J. Sweeney-Kerwin  
Carbone Clinic

## ABSTRACT

Mand training is an essential component of verbal behavior training for any individual who lacks this skill. The current study replicates and extends, with some procedural differences, the work of Hall and Sundberg (1987) by using an interrupted chain procedure to teach mands for missing items to children with autism. The participants were 3 children with autism, ranging between 5 and 8 years of age, who would regularly mand for a wide variety of reinforcers when they were present but would rarely mand for items that were not in sight (i.e., missing items). Participants were first taught to complete 3 behavior chains. Subsequently, the chains were interrupted by removing 1 item needed to complete each chain to contrive motivating operations (MOs) as a means of teaching mands for missing items. Following mand training incorporating vocal prompt and prompt fading procedures, all participants emitted unprompted mands for the missing items within the context of the trained chains and within the context of novel, untrained chains. After teaching mands for missing items, probes were conducted to test for untrained tact acquisition. All participants also demonstrated tact responses relative to the missing items as a result of the mand training.

**Keywords:** autism, establishing operation, interrupted chain, mand, motivating operation



*Behavior Analysis in Practice*, 5(2), 65-76

INCREASING MANDS OF CHILDREN WITH AUTISM |

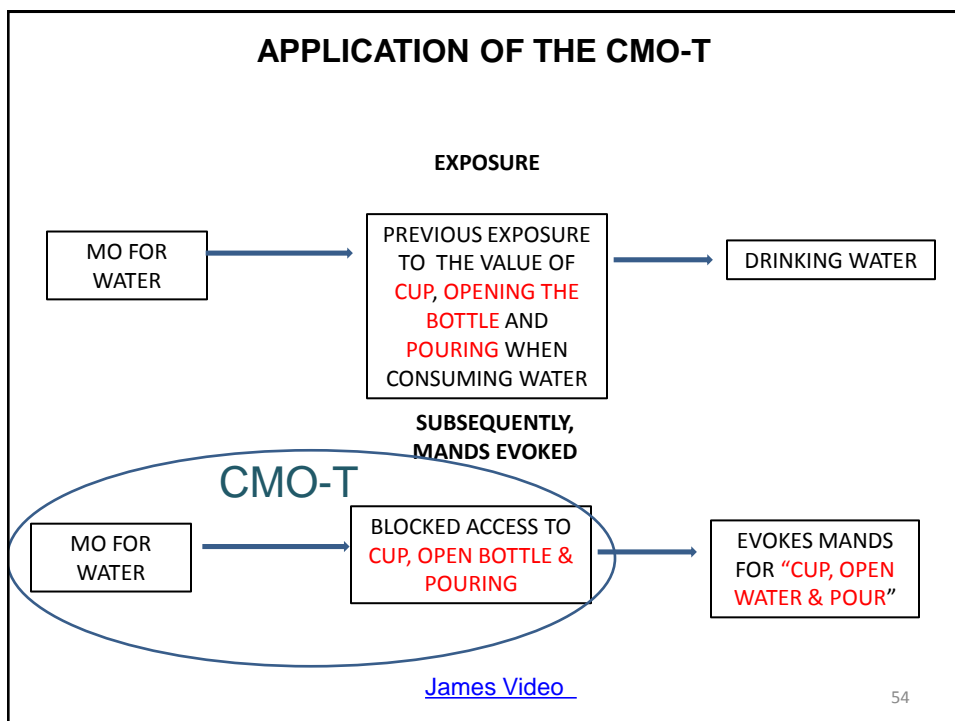
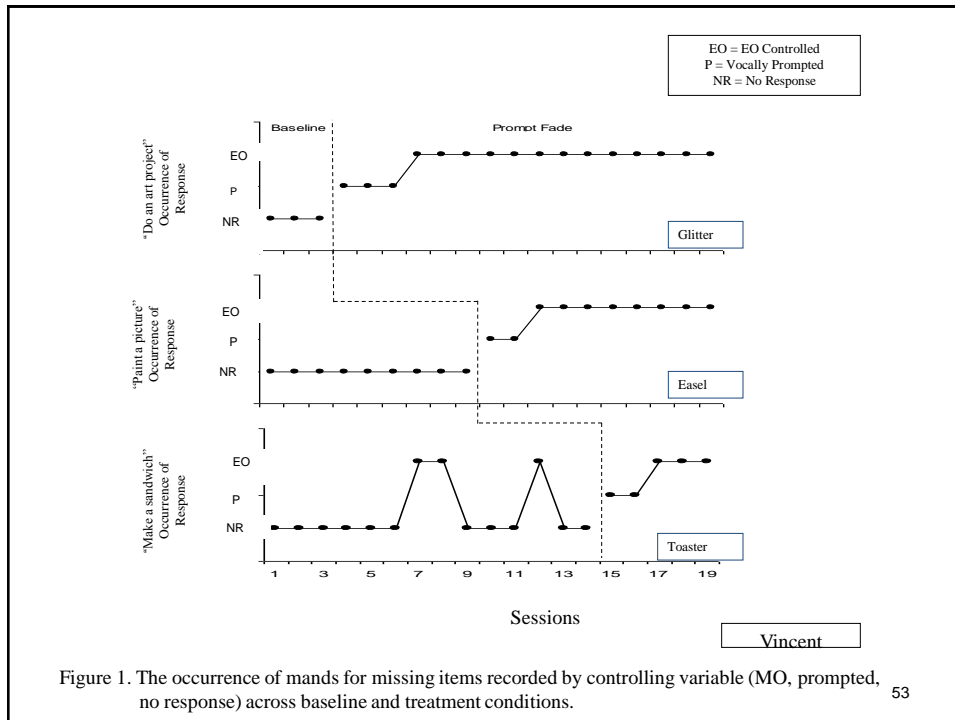
51

Table 1. Descriptions of Chains Taught to Participants

Participant and Chain	Materials	Steps
<b>Victor</b>		
Making an art project	Shapes cut from paper, Glue, <b>Glitter</b>	Pick up paper shapes, Put glue on each shape, Arrange shapes into a picture, Put glue on top of arranged shapes, Sprinkle glitter on top of glue
Painting a picture	Smock, Paper, Clip, Paintbrush, Water, Paint, Easel	Put on smock, Hand clip to instructor (to clip paper onto easel), Pick up paintbrush, Dip paintbrush in water, Dip paintbrush in paint, Apply paintbrush to paper, Repeat painting steps several times
Making a sandwich	Bread, <b>Toaster</b> , Plate, Peanut butter, Knife	Open bag of bread, Put bread in toaster, Push down toaster button, Take bread out of toaster (after bread has popped back up), Put bread on plate, Open peanut butter, Put peanut butter on knife, Spread peanut butter on bread, Eat sandwich
<b>Nathaniel</b>		
Listening to music	<b>Portable CD player</b> , CD, Headphones	Open CD player, Put CD in CD player, Put headphones on, Press play button, Listen to music
Science project	Plastic container, Bottle of water, <b>Two bottles of food coloring</b> , Spoon	Pour water into container, Drop food coloring into container, Pick up spoon, Mix liquid with spoon
Painting a picture	Smock, Paper, Paintbrush, Water, Paint, Easel	Put on smock, Put paper on easel, Pick up paintbrush, Dip paintbrush in water, Dip paintbrush in paint, Apply paintbrush to paper, Repeat painting steps several times
<b>Carina</b>		
Painting a picture	Smock, Paper, <b>Clip</b> , Paintbrush, Water, Paint, Easel	Put on smock, Hand clip to instructor (to clip paper onto easel), Pick up paintbrush, Dip paintbrush in water, Dip paintbrush in paint, Apply paintbrush to paper, Repeat painting steps several times
Making an art project	Paper, Three crayons, Glue stick, <b>Glitter</b>	Color picture, Rub glue on paper, Sprinkle glitter on top of glue
Making juice	Cup, Powder to make juice, Spoon, two ice cubes, <b>Measuring cups containing water</b>	Scoop powder into cup, Pour water from measuring cups into cup, Mix solution in cup using spoon, Put ice cubes into cup, Drink juice

Note. Materials removed to teach mands for missing items are shown in **boldface**.

52



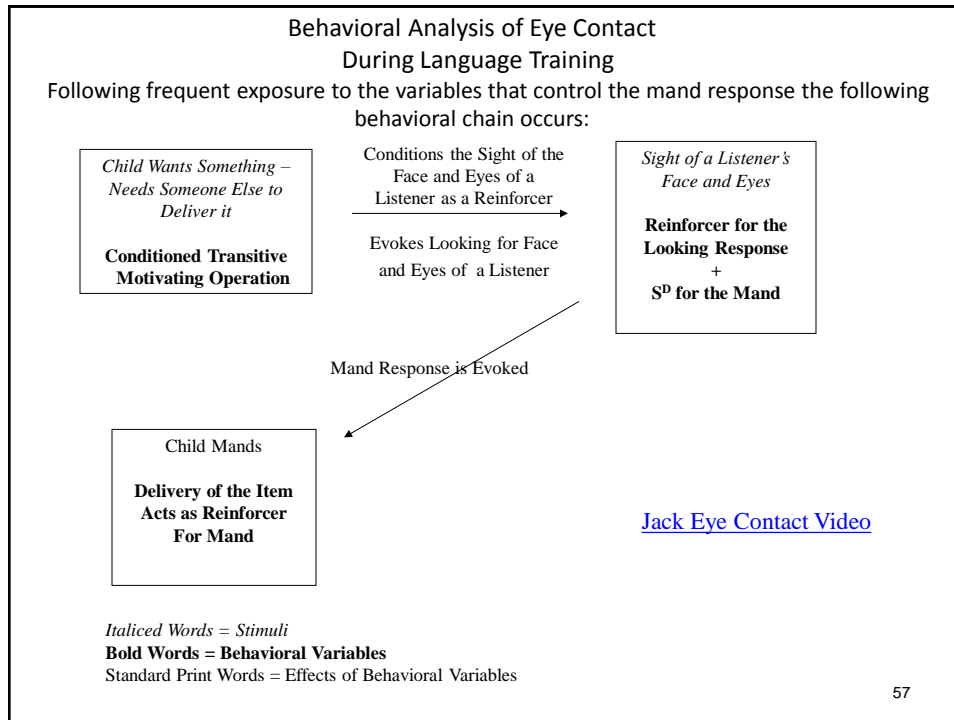
### The CMO-T and Social Skills

- Recently researchers and practitioners have acknowledged the value of the MO, and particularly the CMO-T, to teach social skills to children with autism (Carbone, O'Brien, Sweeney-Kerwin, & Albert, 2013; Dube, MacDonald, Mansfield, Holcomb, & Ahearn, 2004; Holth, 2011; Isaksen & Holth, 2009; Taylor & Hoch, 2008).
- Behavior analytic researchers have suggested that the discrepancy in the acquisition of social skills by children with autism compared to their typical peers may result from the failure of social attention to act as a reinforcer for these children's behavior, (Carbone et al., 2013; Dube et al., 2004; Holth, 2011; Isaksen & Holth, 2009).
- Therefore, methods that successfully condition social attention as a reinforcer may result in important gains in the area of teaching social skills to children with autism.

55

- Dube, et al. (2004) implicated the CMO-T as an important variable in conditioning the reactions of adults as reinforcers for bids for joint attention in children with autism.
- More recently, Isaksen and Holth (2009) demonstrated the conditioning of social attention to teach joint attention through manipulation of a relevant CMO-T.
- Carbone et al. (2013), implicated the CMO-T as a variable in conditioning the sight of another's eye as a reinforcer for eye contact in a child with autism while manding.

56



EDUCATION AND TREATMENT OF CHILDREN Vol. 36, No. 2, 2013

**Teaching Eye Contact to Children with Autism:  
A Conceptual Analysis and Single Case Study**

Vincent J. Carbone  
 Leigh O'Brien  
 Emily J. Sweeney-Kerwin  
 Kristin M. Albert  
*Carbone Clinic*

**Abstract**

Eye contact occurs very early in development and serves many functions for the young child. It has been implicated in the development of social, cognitive, and language skills. A substantial number of children with autism fail to develop this important skill and therefore experimenters with both developmental and behavior analytic perspectives have researched methods to teach eye contact. However, only a few researchers have recently attempted to condition the response of the communication partner as a reinforcer for social behavior and thereby arrange the conditions under which typical children develop social responses. The purpose of this case study was to extend the analysis of typical development of social skills to the teaching of eye contact as a language pragmatic skill to a child with autism. Data from a single case study of a child with autism are provided.

**Keywords:** Eye Contact, Social Skills, Mands, Extinction, Autism, Motivating Operations

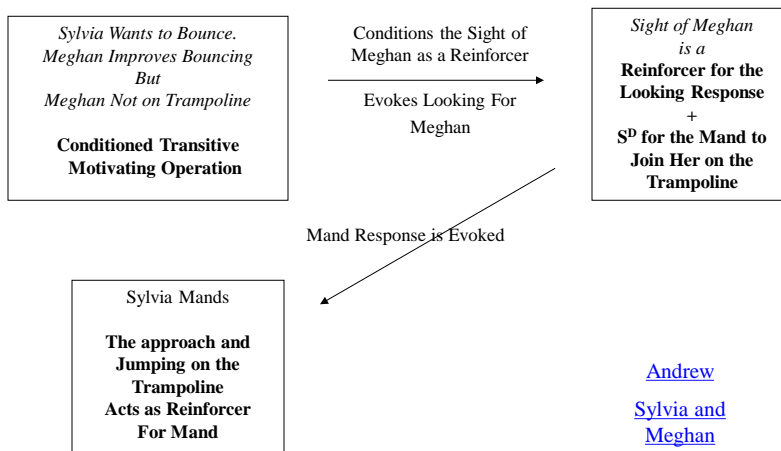
58

- Clinically, we have extended this analysis to the teaching of social skills to young children with autism.
- The diagram on the next page provides an analysis of the sources of control for the behavior of inviting others to play as social skill for children with autism.

59

### Behavioral Analysis of Early Social Skills Training

Following frequent exposure to the variables that control the response the following behavioral chain occurs:



*Italicized Words = Stimuli*  
**Bold Words = Behavioral Variables**  
 Standard Print Words = Effects of Behavioral Variables

60

- The identification of the CMO-T by Michael, (1993) has provide clinicians with an important tool to teach language and social skills to persons who do not acquire it typically.
- Further research on its application to the acquisition of social skills offers substantial promise for the treatment of persons with autism and related disabilities.

61

## Increasing Length of Utterance

62

### Length of Utterance

- Before 2 years old most children speak in one word utterance.
- At about 2 years children usually speak in 2 word utterances, mainly nouns and verbs, e.g. “mommy shoe” “daddy car” “mommy come” “daddy go” “doggy bark” “baby cry”, etc.
- These are mostly mands and tacts.
- At about 2.5 years grammatical structure appears in the verbal behavior of young children.
- For example, the inflection or tag “... ing” appears, i.e., running, jumping, drinking, etc.

63

- In addition phrases or frames may occur, “I want\_\_\_\_\_”, “It is\_\_\_\_\_”, etc.
- These frames “modulate the meaning” of the one and two word utterances.
- These frames act as modifiers, they modify the content words in the sentences.
- Said another way they provide the listener additional information about the content words.
- In Skinner’s analysis the content words are called primary verbal operants and the modifiers are called autoclitic frames.

64



- These autoclitics include words, inflections, order of the words and even intonation, e.g. raising the voice to suggest a question.
- The modifiers do not appear until the 2.5 year old child has many primary verbal operant words since there isn't anything to modify until then.
- If you begin to teach the modifiers that increase the length of utterance to match a typical child in a child with very few mands, tacts, and intraverbals, you will cause several problems.

65

- The problems include the following:
  - ✓ increase response effort and child stops talking
  - ✓ articulation is reduced
  - ✓ unusual grammatical structure interferes with communication

Autoclitic Videos

**THE END**

66