

# ADVANCED MAND PROCEDURES AND PROTOCOLS

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## GOALS FOR THIS PRESENTATION

- Be able to describe the unique antecedent and consequence variables that control multiple component mands, mands for missing items, and mands for information
- Develop a basic understanding of the autoclitic and why it is inappropriate to target expanded lengths of utterances (i.e. mands in full sentences) too early
- Construct novel examples of teaching scenarios for the different mands for information

## MAND TOPICS

- Motivating Operations and the CMO-T
- Review Basic Mand Procedures
- Manding for Missing Items
- Spontaneous Mand
- MLU and the Autoclitic
- Multiple-Component Mand
- Mand for Information

## OPERANT BEHAVIOR

Verbal and non-verbal behavior whose frequency is controlled by past consequences in the presence of characteristic antecedent conditions

Antecedent	Behavior	Consequence
<ul style="list-style-type: none"> <li>▪ Motivating Operation</li> <li>▪ Discriminative Stimulus</li> </ul>	<ul style="list-style-type: none"> <li>▪ Response</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reinforcement</li> <li>▪ Punishment</li> <li>▪ Extinction</li> </ul>

## NON-VERBAL BEHAVIOR

Behavior in which the reinforcement is *not* mediated by other individuals



## VERBAL BEHAVIOR

Behavior in which the reinforcement is mediated by other individuals that had been trained to do so



See Palmer (2008) for more in-depth discussion on Skinner's definition

## THE VERBAL OPERANT

Antecedent	Behavior	Consequence
Motivating Operation	MAND	Specific Reinforcement
Non-Verbal Discriminative Stimulus	TACT	Non-Specific Reinforcement
Verbal Discriminative Stimulus	ECHOIC SIGNED IMITATION INTRAVERBAL	Non-Specific Reinforcement

## THE MAND

Antecedent	Behavior	Consequence
Motivating Operation	MAND	Specific Reinforcement

- The only verbal operant that directly benefits the speaker
- The response specifies the reinforcement that is currently valuable to the speaker
- Under the antecedent control of a motivating operation

## MOTIVATING OPERATIONS

Motivative Operations	
Value Altering Effects	Frequency Altering Effects
Establishes value of stimuli: events or items will serve as reinforcers (EO)	Evokes any behaviors that in the past have resulted in obtaining the events or items
Abolishes value of stimuli: events or items will not serve as reinforcers (AO)	Abates any behavior that in the past have resulted in obtaining the events or items

Food Deprivation as an EO, Food Consumption as an AO

## MOTIVATING OPERATIONS

- Unconditioned Motivating Operation (UMO): An MO whose effect is not dependent on a learning history (i.e. an innate capacity to be reinforced by X)
  - Deprivation/Satiation: food, water, sleep, activity, and oxygen
  - Aversive temperature conditions: too warm or too cold
  - Painful stimulation

## MOTIVATING OPERATIONS

- Conditioned Motivating Operation (CMO): An MO whose effect is dependent on a learning history
  - The capacity to be reinforced by environmental stimuli, such as a remote control, a spoon, a book, a particular outfit style, jewelry, keys, etc.
  - Three types of CMOs:
    - Reflexive Conditioned Motivating Operation (CMO-R)
    - Surrogate Conditioned Motivating Operation (CMO-S)
    - Transitive Conditioned Motivating Operation (CMO-T)

## CMO-R

- Defined: Any stimulus that reliably precedes aversive stimulation will become a warning stimulus whose termination functions as reinforcement



The Role of the Reflexive Conditioned Motivating Operation (CMO-R) During Discrete Trial Instruction of Children with Autism (Carbone, et. al., 2007)

## CMO-S

- Defined: When a stimulus is reliably paired with some UMO or CMO, the stimulus acquires the same MO effects in the future



## CMO-T

- Defined: Within an overarching MO for some terminal reinforcer, a stimulus condition that momentarily establishes some other stimulus as a reinforcer and evokes any behaviors that have produced that stimulus in the past



## CMO VS. S<sup>D</sup>

### Motivating Operation

A stimulus that establishes the **value** of another stimulus as a reinforcer

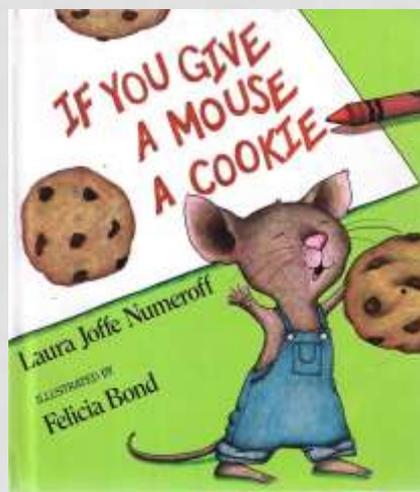


### Discriminative Stimulus

A stimulus that "signals" the **availability** of a reinforcer



## MOTIVATING OPERATIONS



## CMO VS. S<sup>D</sup>

- Calling for assistance on Walkie Talkie
- Cutting out a perfect square
- Putting glasses on face
- Jumping into mother's arms
- Putting on shoes

## CMO VS. S<sup>D</sup>

- Why is the distinction important for student programming?
  - Throughout our lives we (and our students with autism) experience many situations in which stimuli may be valuable but momentarily unavailable
  - Engaging in certain types of behaviors can change our environments to produce these stimuli and thus improve our environments

## THE CMO AND MANDING

- A strong conceptual understanding of CMOs is vital to the development of good complex social programming
- Every day hundreds of mands are emitted by each of us as a result of various moment-to-moment CMOs
- Teaching complex manding through an analysis of these CMOs is critical for the lives of children with ASD

## MAND SEQUENCE

- Manding for item present and prompts
- Mands for item present without prompts
- Mands for actions
- Peer-to-peer manding
- **Mands for missing items**
- **Spontaneous mands**
- Mands for negation
- Mands for help
- Mands for people
- Mands for joint attention
- **Multiple-component mands**

## MAND SEQUENCE

- Mands with a yes or a no in response to an MO related question (e.g. "Do you want an apple?")
- Mands with prepositions
- Mands with pronouns
- Mands for peer participation in play
- **Mands for information**
- Mands for future events
- **MLU and mands within autoclitic frames**
- Conversational mands
- Mands for sympathy or emotional support

## PURE MAND?



## MULTIPLE CONTROL OF MANDS

Within the laboratory, pure elementary operants are controlled for, in which a single antecedent variable evokes a single response and is followed by a characteristic consequence

“Outside the laboratory, behavior is commonly the product of many interacting variables” (Michael, Sundberg, and Palmer, 2012)

## MULTIPLE CONTROL OF MANDS

Consider the variables controlling a student's mand “candy” to his mother

Antecedent	Behavior	Consequence
MO for candy	Says, “Candy”	Specific item mediated by mother
The physical presence of the mother as an “audience” variable (S <sup>D</sup> )		
The sight of candy (S <sup>D</sup> )		

## MULTIPLE CONTROL OF MANDS

Although the mand “candy” is multiply controlled by  $S^D$  variables, the MO is the primary controlling antecedent variable and the response is emitted due to a past history of specific reinforcement

Our terminology in the applied field is important for practical purposes because it specifies the strongest controlling variables of multiply controlled verbal behavior

## MULTIPLE CONTROL OF MANDS

- Multiple control is inescapable outside of the laboratory
- Discriminative stimuli can exert too much control over mands in applied settings (e.g. food bins, toy boxes)
- One strategy to avoid this is by consistently varying the location of reinforcers (multiple exemplar  $S^D$  training)
- This may effectively lead to a “spontaneous” manding repertoire in students with autism

## BASIC MANDING PROCEDURES

- Transfer Trial “transfers” control of the response from prompted to unprompted conditions
- If mand transfer occurs before reinforcement is delivered, it is called a **within trial transfer**.
- If mand transfer occurs after reinforcement is delivered, it is called a **second trial transfer**.

## THE ART OF CONTRIVING THE MO

“The natural contingencies used in education must almost always be rigged” (Skinner, 1968, p. 155)



## THE ART OF IDENTIFYING THE MO



## MULTIPLE CONTROL IN EARLY MANDING

- Early mand training involves both the MO and the item present ( $S^D$ ) as the antecedent conditions
- Having the item present prior to delivering the verbal prompt:
  - Allows control of reinforcers
  - Allows manipulation (contriving and capturing) of motivation
  - Allows clear presentation of teaching trials
  - Facilitates development of discrimination
- However, one goal should eventually be to mand without the item present

## MANDING FOR MISSING ITEMS

Antecedent	Behavior	Consequence
<p>Overarching MO for terminal reinforcer</p> <p>Completed step in a chain of behaviors that lead to terminal reinforcer</p> <p>Next step is blocked due to missing item needed</p> <p>Audience/listener as an S<sup>D</sup> for mand</p>	Mands for missing item	Missing item is mediated by listener and subsequent steps in chain completed

## PRE-REQUISITE SKILLS FOR MISSING ITEMS

- Mands for 75 to 100 items present and actions
- Mands are generalized across instructors, stimuli, and settings
- A repertoire of tacting reinforcing and non-reinforcing items and actions

## MOTIVATING OPERATIONS FOR MISSING ITEMS

- CMO-T within a behavioral chain that is guided by an over-arching MO for some terminal reinforcer
- Making a PB and J sandwich
  - Over-arching MO for Eating the PB and J sandwich
  - CMO-T example:
    - Opened jar of peanut butter is a CMO-T that momentarily establishes a knife as a reinforcer

(What is the  $S^D$ ?)



## CONSIDERATIONS PRIOR TO TEACHING MANDS FOR MISSING ITEMS

- Start with highly reinforcing activities (vs. task completion as a reinforcer)
- In response to an initial verbal  $S^D$  (e.g. "make a sandwich"), the student should have each step in the chain independently acquired when each stimulus is available
- Identify response form for targeted mand for missing item (e.g. sign vs. vocal)

## INTERRUPTED CHAIN PROCEDURE

- Prior to delivering the verbal  $S^D$  for the initial step in the chain, contrive the CMO-T for the mand by making the relevant stimulus momentarily unavailable
  - For example, if the targeted mand is the vocal response "knife," put the knife out of student's sight, but within your reach
- Teach the mand utilizing a brief item-present prompt

## MANDING FOR MISSING ITEMS

- Video

## DATA COLLECTION

The following is a sample chart (Adapted from Dr. Vince Carbone) that can be helpful in planning and collecting data for the mand sessions.

Chart 15

What is already reinforcing to the student?	What do I need to do to establish the value of something else as reinforcing?	What now becomes valuable as a reinforcer?	What response do I need to prompt?	Data Collection: Record P for prompted and U for unprompted
Eating ice cream	Give student the ice cream with no spoon	A spoon	Show spoon and say "spoon"	
Blowing bubbles	Give student the bubbles without the wand	The wand	Show wand and say "wand"	
Completing work to get praise from teacher	Ask student to write the numbers 1-10 and give paper but no pencil	A pencil	Show pencil and say "pencil"	

## DATA COLLECTION

- Cold probe of target mands for missing items
- Tally prompted vs unprompted throughout day
- Tally untrained novel mands for missing items

## MANDS FOR MISSING ITEMS VS. "SPONTANEOUS" MANDS

- "Spontaneous" manding refers to mands in which the most potent controlling variables are the MO and the listener's presence
- Mands for missing items depend on other stimuli that frequently accompany the reinforcing stimulus\*
  - see Skinner's (1957) metonymical tact

## MANDING IN FULL SENTENCES

- A tendency for practitioners to want their students to emit their mands and tacts in full sentences (e.g. "I want X please")
- This appears to be based on a correlation between the average number of words per utterance and the age of the typically developing child
- The development of grammar and syntax is not due to some magical process that comes with development

## MLU AND STRUCTURE

MLU	age equivalent: (within 1 month)
1.31	18
1.62	21
1.92	24
2.54	30
2.85	33
3.16	36
3.47	39
3.78	42
4.09	45
4.40	48
4.71	51
5.02	54
5.32	57
5.63	60

Table 1: Mean Length of Utterance (MLU) by Age [Source: Miller (1981)]

## THE AUTOCLITIC AND FUNCTION

- Mands, tacts, intraverbals, and echoics are analyzed by their effect on the listener (i.e. function)
- “Grammatical” behavior also has unique effects on the listener with respect to the primary verbal operants that are modified by them
- Skinner (1957) and Palmer's (2007) brilliant functional analyses of *autoclitic frames* shed light on these effects

## DEFINITION OF THE AUTOCLITIC

- “Verbal behavior which is based upon or depends upon other verbal behavior” (Skinner, 1957, p. 315)
- Notice what each frame “says” about the speaker's mand: **candy**
  - “**Candy**, please”
  - “May I have **candy**”
  - “That **candy** sure looks good”
  - “I sure do wish I had some **candy**”
  - “I want **candy**”
  - “Give me **candy**, now!”
  - “You better give me that **candy** or else”

## VERBAL BEHAVIOR ABOUT VERBAL BEHAVIOR

- The autoclitic “May I have” alone has no effect on the listener. It depends upon the primary mand, “candy”
- When a speaker says, “May I have candy” he/she is telling the listener that the response candy is a mand and that if the mand is reinforced with candy, the listener can expect his behavior to be positively reinforced
- Compare this with the threatening autoclitic, “You better give me that X, or else”

## TEACHING THE AUTOCLITIC?

- Keep the focus on the acquisition of primary verbal operants
- Do not teach frames, such as “I want X” since there will be no real discriminative effect on the listener and the frame may be generalized to inappropriate contexts (e.g. “I want a push more on the swing please”)
- Empirical research reveals an automatic reinforcement process of frame-acquisition through repeated exposures as a listener (Palmer, 2007)

## TEACHING EXPANDED LENGTHS OF UTTERANCES

- Carrier phrases require more response effort for the child and an increased response effort should correspond with an increased quantity or quality of reinforcement
- Rather than teaching “carrier phrases” it is recommended that we teach the student to be more specific to the listener by teaching multiple component mands
- This results in more specific reinforcement for the student

## MULTIPLE COMPONENT MANDS

- Each component specifies the definable characteristic and discriminates it from alternative characteristics of the non-reinforcing items
  - E.g. big (not little), red (not blue or yellow), ball (not car)
- These unambiguous responses to the parts and features permit more immediate reinforcement for the speaker

## NON-EXAMPLE



**MAND: "big red ball"**

The responses, "big" and "red" are not needed to modify the listener's behavior with respect to mediating the ball as a reinforcer

## MULTIPLE-COMPONENT MANDS

Antecedent	Behavior	Consequence
<p>MO for a specific item</p> <p>The general response form (e.g. "ball") will not immediately guide listener's behavior to specific item</p> <p>The reinforcer has definable characteristics that will effectively modify the mediator's behavior</p>	Multiple-component mand	Specific item mediated by listener

## MULTIPLE-COMPONENT MANDS

Antecedent	Behavior	Consequence
<p>MO for a specific ball</p> <p>The mand "ball" does not discriminate which ball is the reinforcer</p> <p>The definable characteristics (<i>big and red</i>) will effectively guide the listener to the specific ball</p>	"big, red ball"	Specific item mediated by listener

## MULTIPLE-COMPONENT MANDS



MAND: "big, red ball"

## PRE-REQUISITE SKILLS

- A generalized manding repertoire with respect to classes of reinforcing stimuli (e.g. mands "ball" for big balls, little balls, squishy balls, etc.)
- Strong repertoire of tacting parts and features of various items (adjectives, adverbs)
- Some parts and features can be taught in the mand frame prior to acquiring the tacts

## MOTIVATING OPERATIONS FOR MULTIPLE-COMPONENT REINFORCEMENT

- Prior to teaching multiple component mands, the teacher must contrive motivation for both the general reinforcer (e.g. "ball") and the targeted characteristics (e.g. "red" or "big")
- What are some ways that one might strengthen the value of the red ball over the green ball?
  - E.g., give the red ball more air that allows it a stronger bounce
- Item present vs. Item not-present (Google search)

## TEACHING PROCEDURES

- Contrive MO
- Utilize the least intrusive prompt procedure (2<sup>nd</sup> trial transfer , within-trial transfer, or faded prompt procedure)
- When prompting always utilize operants that are already in the student's repertoire
- Transfer trials fade to MO control

## TARGET “PIVOT MANDS”

- “Red ball”
- “Blue ball”
- “Big ball”
- “Little ball”
- “Red car”
- “Blue car”
- “Big car”
- “Little car”

## MULTIPLE-COMPONENT MANDS

Videos

## DATA COLLECTION

- Skills tracking sheets for active targets
- Daily probe data for active targets
- Probe sheet includes whether MO was present or not
- Mastery criteria: 3 consecutive cold-probes, unprompted, multiple exemplars for each target

## MANDING FOR INFORMATION

“A question is a mand which specifies verbal action.” (Skinner, 1957, p. 39)



## OPERATIONAL DEFINITION OF "INFORMATION"

- **Information:** A verbal discriminative stimulus that evokes subsequent responding from the mander that ultimately leads to accessing terminal reinforcement (and in some cases the information itself is the reinforcer)

Antecedent(s)	Behavior	Consequence
<b>MO:</b> Need to use bathroom and its location is unknown	<b>MAND:</b> "Where is the bathroom?"	<b>SR+/SP:</b> "Behind the cashier and to the right"
<b>MO:</b> Can't find wallet and told that somebody had picked it up	<b>MAND:</b> "Who?"	<b>SR+/SP:</b> "Molly"
<b>MO:</b> Opened Chutes and Ladders for the first time and don't know how to play	<b>MAND:</b> "How do I play this game?"	<b>SR+/SP:</b> "First, you have to pick a color..."

## MANDING FOR "WHAT" SOMETHING IS

Antecedent	Behavior	Consequence
A contextual event in which the name of something will be reinforcing	"What is it?"	Verbal stimuli that evokes subsequent mands for named item or its removal

## EXAMPLES OF CONTRIVED "WHAT" MANDS

- Interrupt a low-interest activity and say, "we are going to do something different" and then prompt "what?," reinforce prompted response with the name of a highly-reinforcing activity that is available (e.g. "we're going to play Tony Hawk Pro Skater!")

## EXAMPLES OF CONTRIVED "WHAT" MANDS

- Present a bag or container with a reinforcer in it and say, "I have something for you in here," then prompt, "What?" or "What is it?" and then deliver the verbal information, "it's a X"
- Since the information is the reinforcer here, it may be appropriate to teach a follow-up mand for the item (e.g. "can I have it?") and after the child is independently manding for information, you can intermittently place non-reinforcing items in the box to ensure the information is sufficiently functioning as a reinforcer (e.g. the name of a non-reinforcing item should not evoke the mand "can I have it?")

## EXAMPLES OF CONTRIVED “WHAT” MANDS

- Arrange a field of pictures, in which most of them are known facts and two of them are unknown. Tell the student, “if you can name all of these pictures I will give you (high value reinforcer)”
- When you point to the first unknown fact and the child emits behaviors indicating an MO for information, prompt, “What is it?” and reinforce with the answer
- Having two unknowns in the field allow for a transfer trial within the same session

## “WHO?” MANDS

Antecedent	Behavior	Consequence
A contextual event in which the name of a person will be reinforcing	“Who?”	Verbal stimuli that evokes the student's behavior of searching for the named person, and manding to the named person for the terminal reinforcement

## EXAMPLES OF CONTRIVED MANDS FOR "WHO"

- Give a highly reinforcing item to known individual in the room or building and prepare that person to reinforce a mand for the item after the child approaches. Tell the child, "Someone in this room has your Thomas Train" and then prompt "who?" reinforce prompted response with the name of the known person
- Remember the information should function as an  $S^D$  for subsequent responding. Here the name evokes searching behavior (and possibly rehearsing the individual's name), and the sight of the named person (jointly controlled with the rehearsed name) should serve as an  $S^D$  for the mand "Thomas Train"

## EXAMPLES OF CONTRIVED MANDS FOR "WHO"

- Arrange a field of pictures of people and/or characters, in which most of them are known facts and two of them are unknown. Tell the student, "if you can name all of these people I will give you (high value reinforcer)"
- When you point to the first unknown fact and the child emits behaviors indicating an MO for information, prompt, "who is it?" and reinforce with the answer

## MANDING FOR "WHERE" SOMETHING IS

Antecedent	Behavior	Consequence
Overarching MO for some reinforcer but its location is unknown	"Where is it?" or "Where is X?"	Verbal behavior that functions as an S <sup>D</sup> for subsequent behavior that leads to terminal reinforcer (e.g. "in the X," "next to Y," "under the Z")

## EXAMPLES OF CONTRIVED "WHERE" MANDS

- Place a highly preferred toy or activity that is consistently in the same location and then when the child is looking for it, prompt "where is X?," then reinforce with a simple prepositional frame that will evoke the response to find it (e.g. "on Ms. Kathie's desk" or "it's in the kitchen")
- Hide the child's reinforcers in various locations and say, "your X is somewhere in this room" or "Your X isn't here"
  - Notice the importance of the child's ability to respond to instructions involving prepositions and pronouns.
  - Don't move too quickly to multi-step response that will require extensive rehearsal for the student's success

## MANDING FOR "HOW" TO DO SOMETHING

Antecedent	Behavior	Consequence
An overarching MO for some reinforcer but the behavior required to access it is unknown	"How do I do it?"	Verbal behavior that functions as an S <sup>D</sup> that evokes the necessary behavior required to access terminal reinforcer ("press the red button at the top of the remote")

## EXAMPLE OF CONTRIVED MANDING FOR "HOW"

- Have a reinforcer delivered in a see-through, but difficult to access container (e.g. lock-and-key, child-proof container, coded lock, etc.) and after the child mands for the visible item deliver the container and say, "yes, you can have it"... When the child fails to open the container prompt "how do I open it?" and reinforce with the instructions

## EXAMPLE OF CONTRIVED MANDING FOR "HOW"

- Open up a board game that the student has never played (e.g. chutes and ladders) and tell the him/her, "if you can beat me at this game then you can have (high value reinforcer)" and when relevant MO is present prompt "how do I play?"

## OTHER MANDS FOR INFORMATION

- "Which"
- "When"
- "Why"

## PRE-REQUISITE SKILLS FOR MANDING FOR INFORMATION

- Student can already spontaneously mand for 100s of different items/activities, actions, missing items, help, manding with yes/no, and the removal of aversives
- Strong repertoire of tacts and LRs related to people, places, adjectives, prepositions, and pronouns (atomic repertoires)
- Self-echoic rehearsal should lead to more efficient contact with terminal reinforcement in situations where joint control between echoic and tact will lead to subsequent reinforcement (e.g. "on Ms. Dilger's desk, behind the pencils...")
- Generalized gross and fine motor imitation skills, multi-step imitation, observational learning (frequently referred to as "delayed imitation")

## MOTIVATING OPERATIONS FOR INFORMATION

- CMO-T
- Plan ahead for contrived situations
- Ensure MO is strong prior to prompting target response
- Ensure that the reinforcement is a sufficiently trained S<sup>D</sup> that evokes efficient responding that leads to terminal reinforcement
- Make sure the information is functioning as the reinforcer for the mand

## TEACHING PROCEDURES

- Target two information types concurrently (e.g. *what* and *who*)
- Plan ahead for CMO-T situations in which the information that leads to the terminal reinforcer is valuable
- Procedures may be analogous to mands for missing items, but the reinforcement is the information rather than the item
- Do not teach situations in which task completion is the reinforcer until the child has acquired various examples within MOs for positive reinforcement as the terminal consequence

## TEACHING PROCEDURES

- After your student has acquired a generalized repertoire of manding for multiple types of information, contrive situations in which the different types of information-mands can be practiced within one over-arching MO
- It is important not to do this too early as you would not want to risk putting mands for information on extinction
- This is where all the pieces come together and the CMO-Ts change rapidly for the student
- Two or three mands for information initially (constantly monitor strength of MO)

## EXAMPLE

- For example, if the student is independently manding "who," "what" and "where" various CMO-Ts can be contrived to evoke each mand within a single over-arching MO
  - Give a reinforcing item (e.g. Thomas Train") to a known person and have that person hide in the kitchen
  - Hold an empty box and say, "I have something for you" and when the independent mand "what?" is emitted, say "A Thomas Train"
  - After the child mands, "Can I have it" open the box and say, "Oh no, someone else must have it"
  - After the child mands, "who?" say, "Ms. Amber has it"
  - After the child mands "Where is Ms. Amber" say "in the kitchen"

## MAND FOR INFORMATION

- Videos

## DATA COLLECTION

(Adapted from Dr. Vincent Carbone)

What is already reinforcing to the student?	What do I need to do to establish the value of something else as reinforcing?	What now becomes valuable as a reinforcer?	What response do I need to prompt?	Data Collection: Record P for prompted and U for unprompted
Putting coat on to o home	Remove the coat from locker and hide behind the bookshelf	Location of the coat	Where is my coat?	

## DATA COLLECTION

- Instructors should keep data on prompted and spontaneous mands for information in contrived situations as well as in novel naturally occurring opportunities.
- Graph prompted vs. spontaneous mands for each specific topography.
- Teaching of each specific target mand for information will need to continue until the student is able to mand for information using the target response in novel (non-trained) situations.

## CLOSING REMARKS

- Recognize the role of interpreting complex behavior when designing intervention programs for complex behavior
- Exercise your own interpretive repertoires as often as possible, as this will refine your ability to contrive and identify relevant Mos for complex manding

## CLOSING REMARKS

“Very little real life goes on in the real world of the school. Heroic measures on the part of the teacher are needed to make that world important” (Skinner, 1968, p. 154)

