

# Stimulus Control:

- Behavior that occurs more often in the presence of a stimulus than in its absence.
- A stimulus controls the response only if the response that occurs has produced reinforcement more often in the presence of that specific stimulus than in its absence.

# Discriminative Stimulus (SD):

- A stimulus in the presence of which responses have been reinforced and in the absence of which the same type of responses have not been reinforced.
- An SD signals that reinforcement is available if a response occurs.

# Stimulus Delta (S-Delta):

- A stimulus in the presence of which a response has not produced reinforcement.
- An S-Delta indicates that reinforcement is not available if a response occurs.

# How to Develop Stimulus Control:

- Discrimination Training: Responses are reinforced in the presence of one stimulus (SD), but not reinforced in the presence of another stimulus (S-Delta).

*SD (Phone rings)*



*R (Pick up phone)*



*SR+ (Someone responds)*



*S-Delta (Doorbell rings)*



*R (pick up phone)*



*Extinction (No response)*



# SD/S-Delta Examples:

SD (Picture of ball) → R ("Ball") → SR+ ("Yes, that's right")

S-Delta (Picture of car) → R ("Ball") → ~~SR+~~ (No Reinforcement)

SD (Green light) → R (Pigeon pecks) → SR+ (Food delivered)

S-Delta (Red light) → R (Pigeon pecks) → ~~SR+~~ (No food)

# Prompt:

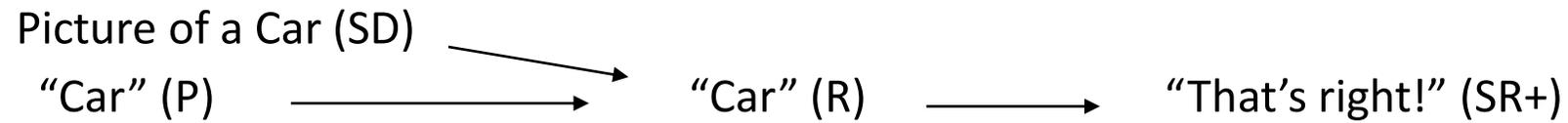
- A *prompt* is used to increase the likelihood that a person will engage in the correct response.
- A prompt is an antecedent stimulus used temporarily to help an individual engage in the correct response in the presence of the discriminative stimulus (SD).
- Prompts should be delivered at the same time or immediately following the SD.

# Types of Prompts:

- Physical Prompts
- Verbal Prompts
- Gestural Prompts
- Model prompts
- Positional Prompts
- Visual Prompts
- Written Prompts
- Stimulus prompts

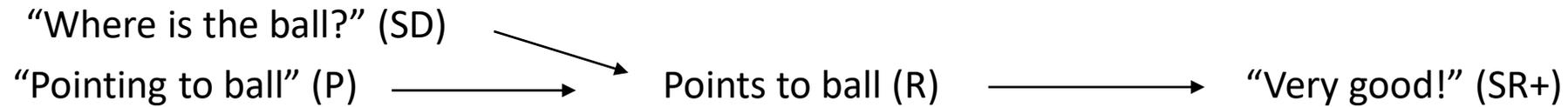
# Verbal Prompt:

- Words or instructions delivered in order to help an individual engage in a correct response.



# Gestural Prompt:

- Movement or gesture used to help an individual engage in a correct response.



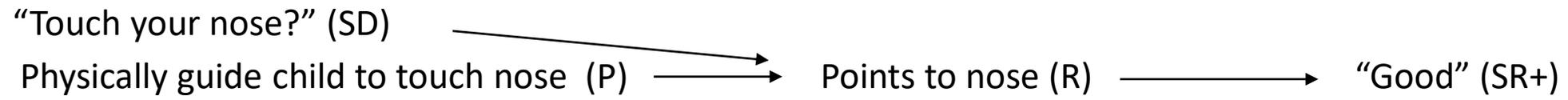
# Model Prompt:

- Demonstrating the correct response which helps another person engage in a correct response.



# Physical Prompt:

- Physically helping another person engage in a correct response.



# Positional Prompt:

- Placing stimulus closer to another person.



# Visual Prompt:

- Using pictures to help individual engage in a correct response.

Using a manual with pictures to help assemble furniture.

# Extrastimulus vs Intrastimulus Prompts:

- Extrastimulus prompt is when the prompt is outside of the stimulus. For example, pointing at a stimulus, or modeling the correct response.
- Intrastimulus prompt is when some part of the stimulus that you want the person to respond to is modified to increase likelihood of responding. For example, adding dotted lines to increase likelihood of correctly drawing shapes.

# Prompt Fading:

- Prompt fading is the gradual removal of prompts as the correct response continues to occur.
- Prompt fading is a way to transfer stimulus control from the prompts to the SD.

# Least-to-Most Prompt Fading:

- Initially, fewer prompts are delivered and gradually more intrusive prompts are delivered as the learner needs help.

Gesture → Model → Physical

# Most-to-Least Prompt Fading:

- Initially, more intrusive prompts are delivered and as the learner engages in correct response, less intrusive prompts are delivered.

Full Physical → Partial Physical → Model → Gestural

# ASR #1

- Prompts are:
  - A. Supplemental antecedent stimuli that help evoke a response when the SD is present.
  - B. Consequences that help teach children.
  - C. Discriminative stimuli.
  - D. All of the above.

# Errorless Learning:

- Procedure in which transfer of stimulus control is achieved by initially using prompts and gradually fading prompts, until the SD evokes the correct response.

*-Purpose of errorless learning is to reduce the number of errors.*

# Task Analysis:

- Breaking down a complex skill into small teachable steps, when completed creates complex behavior.
- For example, brushing teeth requires completing a series of small steps, that when completed results in the completion of the entire task.

# Chaining:

- Procedure in which prompting and reinforcing each behavior in a task analysis.
- Three types of chaining procedures:
  1. Forward chaining
  2. Backward chaining
  3. Total task presentation

# Forward Chaining:

- The initial step in the behavior chain sequence is taught first, while the learner is prompted to complete the remainder of the steps.
- If the learner completes the first step, you prompt him to complete the remainder of the steps. If the learner does not complete the first step independently, you deliver a prompt so that they complete the step correctly.
- Once the learner independently completes the step correctly, you then move on to the next step.

# Backward Chaining:

- All the steps within the behavior chain are prompted other than the final step, which is taught to the learner.
- Prompt all the steps until the very last step. If the learner completes the last step independently, you deliver reinforcer. If she does not engage in the correct response, you deliver a prompt and small amount of reinforcer.
- Once learner independently completes the last step in the chain, you then move on to the second to last step in the chain.

# Total Task Presentation:

- Presenting the entire task to the learner and having him complete all of the steps until the entire task is learned.
- Total task presentation is appropriate for individuals that are higher functioning.

# ASR #2

- Breaking complex skill into smaller teachable steps.
- A. Shaping
- B. Chaining
- C. Task Analysis
- D. Prompting

# Shaping

- Differentially reinforcing successive approximations to a target behavior.
- Reinforcer behaviors that are closer and closer to the target behavior.
- Reinforcer is not delivered for behaviors that are not closer to the target behavior.

Example: Shaping learner to say “ball”

“b”

“ba”

“ball”

# Functional Behavior Assessment (FBA)

- A Functional Behavior Assessment (FBA) is a method of assessment that is utilized for obtaining information about the purpose of a problem behavior.
- An FBA is conducted in order to identify the function of a problem behavior.
- Treatment plans are developed based on the results of a Functional Behavior Assessment (FBA).

# Functions of Behavior:

- There are four functions of behavior:
  1. Attention
  2. Access
  3. Escape
  4. Automatic
- Some target behaviors can have more than one function.
- The function of a target behavior can change over time.

# Indirect Assessment:

- Method of assessment that is based on the reporting of individuals that are familiar with the client and their maladaptive behaviors.
  1. Structured interviews: Specific questions are asked about the client's behaviors.
  2. Rating Scales: Caregivers rate behaviors on a scale.

# Descriptive Assessment (ABC Recording)

- Requires direct observation and recording of the antecedents, behaviors, and consequences as they occur in the natural environment.
- When the target behavior occurs, you write down what happened right before the target behavior and what happened right after the target behavior.
- Record only observable events (e.g., John pushed his sister) and not inferences (e.g., John was frustrated and angry).

# Sample ABC Recording:

Date	Time	Antecedent	Behavior	Consequence	What's the Function
12/8	1:45	Mom asked Johnny to do spelling HW	Johnny threw the pencil and left table	Mom sent Johnny to his room	
12/8	5:43	Mom on the phone	Johnny threw a ball at mom	Mom told Johnny to stop. He is being rude	
12/9	3:33	Dad asked Johnny to put away his toys	Johnny screamed and cried	Dad continued to ask Johnny to put away toys	
12/10	6:28	Mom asked Johnny to come to table and start his HW	Johnny screamed, cried and ran to his room	Mom ignored Johnny	

# A-B-C Recording:

- David's mom is on the phone. David pulls her shirt and repeatedly says "Mom." His mom turns to David and says, "stop doing that."
- What is the target behavior?
- What is the antecedent for the target behavior?
- What is the consequence for the behavior?
- What is the function of the target behavior?

# A-B-C Recording:

- You show Robert a picture of a car and ask Robert, “what’s this?” Robert cries and runs to his room and closes the door.
- What is the target behavior?
- What is the antecedent for the behavior?
- What is the consequence for the behavior?
- What is the function of the target behavior?

# A-B-C Recording:

- Mary's mother takes her iPad away. Mary tantrums and bites her. Her mom gives the iPad back.
- What is the target behavior?
- What is the antecedent for the behavior?
- What is the consequence for the behavior?
- What is the function of the target behavior?

## ASR #3:

- List the 4 functions of behavior.

1.

2.

3.

4.

## ASR #4:

- The purpose of an FBA is to:
  - A. Assess the child's IQ
  - B. Identify the function of the problem behavior
  - C. Observe the client
  - D. Teach language skills

# Motivating Operations (MO):

- An environmental variable that alters the momentary value of a reinforcer.
- Motivating Operations can either increase the value of a reinforcer or decrease the value of a reinforcer.
  - *Establishing operation (EO) increases the current value of a reinforcer and evokes a response.*
  - *Abolishing operation (AO) decreases the current value of a reinforcer and does not evoke a response.*

## ASR #5:

- Which increases the momentary value of a reinforcer?
- A. Establishing operation (EO)
- B. Abolishing operation (AO)
- C. SD
- D. Both A and B

## ASR #6:

Jake has been playing with his iPad (preferred item) for extended periods of time. You tell Jake that if he goes to the table you will give him 5 minutes on the iPad. He cries and runs to his room. What is a possible reason for his non-compliance?

- A. Jake is satiated from the iPad
- B. Jake is tired.
- C. Jake doesn't like you
- D. Jake is bored

# Noncontingent Reinforcement (NCR)

- NCR is an antecedent intervention:
- Reinforcement is delivered to the learner freely, independent of any specific behavior.
- Reinforcement is delivered based on passage of time.
- Reinforcement must match the function of the problem behavior.
- NCR is effective because it eliminates/decreases the motivation for the learner to engage in the problem behavior.

# Noncontingent Reinforcement (NCR) for Behaviors Maintained by Attention:

- Dave throws objects at his mother when she's ignoring him. He does this at an average of every 15 minutes.
- The function of throwing objects is attention. You will set the timer just below 15 minutes. Say, 10 minutes. When the timer goes off you will deliver \_\_\_\_\_ as a reinforcer.

# Noncontingent Reinforcement (NCR) for Behaviors Maintained by Access:

- Mark cries when his dad denies him of popcorn. He does this approximately every 30 minutes.
- The function of his crying is access to preferred items. You will set the timer to 20 minutes. Every 20 minutes you will deliver \_\_\_\_\_ as a reinforcer.

# Noncontingent Reinforcement (NCR) for Behaviors Maintained by Escape:

- Robert engages in self-injury when demands are presented, such as coloring and tracing. He does this on an average of every 3 minutes.
- The function of his self-injury is escape. When the timer goes off you will deliver \_\_\_\_\_ as a reinforcer.

# Noncontingent Reinforcement (NCR) for Behaviors Maintained by Automatic Reinforcement:

- Sam spins around in a repetitive manner on an average of every 10 minutes.
- The function of his spinning has been determined to be automatic reinforcement. You set the timer to 7 minutes. When the timer goes off you will deliver \_\_\_\_\_ as a reinforcer.

# Demand Fading:

- Demand Fading is an antecedent intervention:
- Initial decrease in the amount and difficulty of work a learner has to complete.
- As the problem behavior decreases the frequency and difficulty of the demands gradually increase over time.
- Demand fading is an intervention to address the escape function.

# Demand Fading for Escape Maintained Behaviors:

- John engages in tantrum behaviors when he is asked to complete his math assignment. Typically, he is required to complete 10 problems before receiving a break.
- Demand fading would consist of only requiring John to complete one math problem in order to receive a break. The next day you may require he completes two math problems before receiving a break.

# Task Modification:

- Task modification is an antecedent intervention:
- Some aspect of the task is modified in order to decrease the likelihood of problem behaviors occurring.
- One might use preferred items to teach rather than pictures. Or a learner may prefer to use specific color crayons for tracing.

# High Probability Request Sequence:

- Also known as **behavioral momentum**.
- Present a series of easy requests in which there is a history of compliance in quick succession prior to the target request.
- Builds momentum and increases the likelihood that the individual will comply with the target task, reducing problem behaviors associated with the task.
- The easy requests are tasks of a short duration that are in the individual's current repertoire that occur with regular compliance.
- The high-probability tasks should receive brief reinforcement, but the target task should receive powerful reinforcement.

# Choice:

- Providing choice is an antecedent intervention:
- Providing the learner with choices will decrease the likelihood of problem behaviors, since often times individuals choose the less aversive option.
- For example, you can ask a child to choose to work on tracing his letters or doing math.

# Functional Communication Training (FCT)

- FCT is an antecedent intervention.
- The purpose of FCT is to teach the learner to communicate appropriately rather than engaging in problem behaviors.
- The communication method can be vocal, sign, or pictures.
- FCT requires prompting the learner to use the communicative response before the problem behavior occurs and reinforcing that response immediately. Prompts are gradually faded in order for the learner to use the appropriate communication independently.

# Functional Communication Training (FCT)

## Example:

- Tim throws objects when his mother asks him to do his homework.

## What's the function?

1. Identify an easy alternative response to throwing objects. In this case the word "break."
2. Present that same instruction and immediately provide a prompt, "say break."
3. When he says "break", immediately move away and do not present any instructions.

# Functional Communication Training (FCT)

## Example:

- John screams when his mother is ignoring him.
- What's the function?
  1. Identify an easy alternative response to screaming. In this case the word "Mom."
  2. have mom ignore him. Immediately walk John over to his Mom and prompt him to say "Mom."
  3. When he says "Mom," his mother immediately gives him attention.

# Functional Communication Training (FCT)

## Examples:

- Mary hits herself on the head when her father does not give her cookie.
- What's the function?
  1. Identify an easy alternative response. In this case the word "cookie."
  2. Hold the cookie in front of her and prompt Mary to say "cookie."
  3. When she says "cookie" immediately give her the cookie.

# ASR #7

- Mary cries when her mother is ignoring her. Which of the following would be appropriate in this case?
- A. Teach Mary to request for attention before she cries
- B. Mom immediately telling Mary to be quiet
- C. Mom giving Mary her favorite toy so she stops crying
- D. None of the above

# ASR #8

- How would you implement NCR for a problem behavior that is maintained by escape from non-preferred tasks?
  - A. Wait until the behavior stops then give child a break
  - B. Provide frequent breaks on a time schedule
  - C. Give the child frequent attention
  - D. Give the child a break when problem behavior occurs

# Differential Reinforcement of Alternative Behavior (DRA):

- DRA is a consequence intervention:
- Reinforce appropriate replacement behavior and place inappropriate behavior on extinction.
- DRA has two components (reinforcement and extinction).

# DRA Examples:

- Attention:
  - When Tina screams, her mother ignores her (extinction); when she says “excuse me” her mother talks to her (reinforcement).
- Access:
  - When Dave scratches, his father does not give candy (extinction); when he nicely says, “candy” his father gives him the candy (reinforcement).
- Escape:
  - When James bites his hand during work, the behavior instructor continues to present the task (extinction); When he says “break” he gets a 3-minute break (reinforcement).
- Automatic:
  - Tom’s inappropriate sounds are interrupted; Singing and appropriate sounds are reinforced.

# Differential Reinforcement of Incompatible Behavior (DRI):

- Similar to DRA except that the problem behavior and the replacement behavior can not occur at the same time.
- For example, a child who leaves his seat frequently can't leave his seat and stay seated at the same time. These two behaviors are incompatible.

# Differential Reinforcement of Low Rate Behavior (DRL):

- DRL is a consequence intervention:
- Target behavior is reinforced only if it occurs at or below a specified rate.
- DRL is implemented for target behaviors that occur at high rates.
- Johnny raises his hand 35 times in 30 minutes. The hand raising behavior is appropriate, but the rate of the behavior is inappropriate. In this example, the teacher will only call on Johnny if at least 10 minutes has passed from the last time he raised his hand.

# Differential Reinforcement of Other Behavior (DRO):

- DRO is a consequence intervention:
- Reinforcement delivered if target behavior does not occur for a specific amount of time.
- If the behavior occurs at any time within the interval, you reset the timer and start over.

# DRO Examples:

- Attention:
  - If Tina does not scream for the entire 3 minutes, her mom will give her attention. If she screams, the timer will re-set and she will not receive attention.
- Access:
  - If James does not engage in scratching behavior for 10 minutes, his dad will give him a cookie. If he scratches at any time within that interval, the timer will re-set and he will not receive a cookie.
- Escape:
  - If James does not bite his hand for the entire 2 minutes, he will receive a brief break. If he bites his hand at any time within the 2 minutes, he will not receive a break.
- Automatic:
  - If Tom does not engage in hand flapping for 5 minutes, he will be allowed to jump on the trampoline. If he engages in hand flapping within the 5 minutes, he will not have access to the trampoline.

## ASR #9:

- The two components of DRA are:
  - A. Reinforcement, Extinction
  - B. Reinforcement, Punishment
  - C. NCR, Extinction
  - D. None of the above

# ASR #10

- Delivering the reinforcer when the problem behavior has not occurred in an interval of time:
  - A. DRA
  - B. DRL
  - C. DRO
  - D. NCR

# Extinction:

- Extinction is a consequence intervention:
- Reinforcement of previously reinforced behavior is discontinued.
- Extinction is implemented based on the target behaviors function.
- Everyone involved must implement extinction consistently.

# Extinction Examples:

- **Attention Extinction:**
  - When Ron interrupts his parents when they are speaking to one another, they ignore Ron completely.
- **Access Extinction:**
  - When Sam hit his behavior instructor to get the iPad, the behavior instructor does not give it to him.
- **Escape Extinction:**
  - When Cindy rips her homework, her dad continues to present the homework assignment.
- **Automatic Extinction:**
  - When Tom taps the table with his pen, you place a tablecloth to mask the noise.

# ASR #11

- Implementing DRL would be best for:
  - A. Drug addiction
  - B. Excessive talking in a group setting
  - C. Tantrum behaviors
  - D. Speeding

# Maintenance:

- Response Maintenance: Individual continues to engage in the target behavior after part or all of the intervention has been terminated.
- All successful ABA programs must ensure that the clients' behaviors are maintaining after part or all of the treatment has terminated.

# Generalization:

- The effects of training from the training setting or behavior spread across other settings.
- *Response generalization*: Behavior is trained in the presence of a stimulus and then different behavior occurs in the presence of that stimulus.
  - A child to say “hello” when someone enter. Now the child says “Hi, how are you?”
- *Stimulus Generalization*: Behavior that occurs in the presence of one stimulus, now occurs in the presence of other stimuli.
  - Child learns to identify a green apple, and now identifies red apples.

# Multiple Stimulus Exemplar Training:

- Teaching the client to respond correctly to more than one example of the antecedent stimulus.
- The more examples used during training, the higher the likelihood that learner will respond to untrained examples.

Example: Teaching a learner to identify different types of balls.  
“Basketball”, “baseball”, “football.”

# Sequential Modification:

- Teaching behaviors across different responses, subjects and settings.
- The purpose of sequential modification is specifically to teach behaviors to occur in different settings, and with different people.
- For example, you can teach a child to greet people when they enter his home. However, greeting may not generalize to other people and settings.
- With sequential modification, you teach greeting to occur with other people in different settings.

# Introduce Natural Maintaining Contingencies:

- Exposing learner to environments where the natural contingencies will support the newly acquired behavior.
- For example, teaching a child to share preferred toys with peers. Introducing the child to other children in variety of play areas will most likely support this newly acquired sharing behavior. That is, child will be more likely to share and play with other peers in the natural environment.

# Train Loosely:

- Varying noncritical aspects of instructions within and across teaching sessions.
- For example, teaching compliance by varying your instructions, tone of voice, and distance.

# Indiscriminable Contingencies:

- Incorporating intermittent schedules of reinforcement. The learner cannot discriminate which responses will produce reinforcement and which will not, therefore, responding continues.

# Program Common Stimuli:

- Include typical features of the generalization setting into the teaching setting.
- For example, teaching a child to practice his speech in front of his friends and family members and including similar lighting, chairs, and tables, that will be similar to the generalization setting (auditorium).