A-4: Distinguish among behaviorism, the experimental analysis of behavior, applied behavior analysis, and professional practice guided by the science of behavior analysis.

- Identify the domain for each example below, choosing from: behaviorism, the experimental analysis of behavior, applied behavior analysis, and professional practice guided by the science of behavior analysis
- Define and create a new example for each domain of behavior analysis science

Domain	Definition	Example	New Example
Experimental Analysis of Behavior	*Basic research to define and clarify principles of behavior.*	Understanding conditioned reinforcement by training college students to prefer one color over another in a video game.	
Applied Behavior Analysis	*Applied research to improve socially-significant behavior.*	Introducing a class-wide token economy and collecting data on class behavior.	
Practice Guided by Behavior Analysis	*Implementation of behavioral interventions to help people.*	Demonstrating that children who are non-verbal can learn to speak when attempts to communicate are systematically prompted, reinforced, and shaped.	
Behaviorism	*Conceptual and theoretical account of behavior.*	Describing a current event in terms of behavioral concepts and philosophy.	

B-1: Define and provide examples of behavior, response, and response class

Sample	Behavior, response, or response class?
Cooking a meal that is mostly vegetables	*Response*
Making healthy choices when eating	*Behavior*
Eating a piece of fruit, taking a multivitamin, or eating raw carrots	*Response class*
Cleaning the house	*Behavior*
Vacuuming, mopping, or sweeping the kitchen floor	*Response class*
Vacuuming the house for 10 minutes	*Response*
Putting toys back on the shelf	*Response*
George cleans the playroom, makes his little brother clean it, or does not take toys out	*Response class*
Cleaning the playroom	*Behavior*
	Behavior
	Response
	Response class

B-3: Define and provide examples of respondent and operant conditioning.

For each of the behaviors listed below determine whether the behavior is best characterized as respondent, operant, or both. Be prepared to explain your rationale!

Behavior	Respondent, Operant, or Both?
Sweating	Respondent
Eye blinks	Both
Kicking	Operant
Salivation	Respondent
Vomiting	Both
Coughing	Both

Given several examples, identify each as positive or negative reinforcement, and generate new examples for each.

Example	Type of Reinforcer (Positive or Negative)
Javier gives a correct answer in class and his teacher gives him a high-10 and praise. He answers more questions in class in subsequent days.	*Positive Reinforcer*
Julie raises her hand so that the teacher won't call on her randomly. Raising her hand increases over time.	*Negative Reinforcer*
Kendall studies hard to get good grades because her parents have said that they won't pay for her car insurance anymore if she fails another class.	*Negative Reinforcer*
Basia studies hard to get good grades so that she can graduate and go to a good college.	*Positive Reinforcer*
Today, Dima called out twice as many times as yesterday. Yesterday, Dima called out in class and the teacher verbally reprimanded her.	*Positive Reinforcer*
Anzac cries whenever his parents take him to a family function and insist that he give his aunts kisses. Anzac's parents get embarrassed and leave, and Anzac cries earlier and faster at every subsequent family function.	*Negative Reinforcer*
	Positive Reinforcer
	Negative Reinforcer
	Positive Reinforcer
	Negative Reinforcer

B-5: Define and provide examples of schedules of reinforcement

Given several examples, identify the schedule of reinforcement being described. Generate new examples for each schedule of reinforcement.

Example	Schedule of Reinforcement
After calling an Uber, the first time you go outside after approximately 10 minutes is reinforced by seeing the car.	*Variable Interval*
You get the mail every day and bring it in the house, and every 3 to 5 times your spouse thanks you.	*Variable Ratio*
Every time you open your web browser and navigate to a shopping website, you find it reinforcing to see things to buy.	*Fixed Ratio*
During your aerobics class, your instructor, Richard Simmons, delivers praise for the first action he sees after every 5 minutes.	*Fixed Interval*
	Fixed Ratio
	Variable Ratio
	Fixed Interval
	Variable Interval

B-6: Define and provide examples of positive and negative punishment contingencies

Given several examples, identify which are positive and which are negative punishment, and generate new examples for each.

Example	Type of Punishment (Positive or Negative)
Sabra came home 5 minutes late from a date. Her parents grounded her for 5 days. Sabra comes home 5 minutes early the next time she's on a date.	*Negative Punishment*
Shannon refuses to type with Caleb because he used to fix her mistakes when she was typing in a shared document.	*Positive Punishment*
Owen left the full trash bin out on the kitchen floor. Sherril yelled at him and he never leaves the trash bin out again.	*Positive Punishment*
Bobby refuses to use a particular ATM because he has been charged double fees from that bank in the past.	*Negative Punishment*
Omar was practicing juggling with three-pound balls. He dropped one on his foot and broke his toe and never juggles again.	*Positive Punishment*
Shango never jogs while holding his phone because he once dropped it in a puddle while running and it never worked again.	*Negative Punishment*
	Positive Punishment
	Negative Punishment
	Positive Punishment
	Negative Punishment

B-7: Define and provide examples of automatic and socially mediated contingencies

Given several examples, identify which are automatic and which are socially mediated contingencies, and create new examples for each.

Example	Type of Contingency (Automatic or Socially Mediated)
Felix claps and cheers whenever his three-year-old daughter dances, so she dances whenever she sees him.	*Socially Mediated Contingency*
Milly dances because she enjoys the feeling of the movement in time with the music.	*Automatic Contingency*
John asks for and receives free samples from the deli staff whenever he visits the deli.	*Socially Mediated Contingency*
Theon enjoys laying in the sun because it's warm.	*Automatic Contingency*
Raoul gets a sunburn from laying out without sunscreen on a warm day.	*Automatic Contingency*
Larissa is told to leave the store by the manager after she asks for too many free samples.	*Socially Mediated Contingency*
	Automatic Contingency
	Socially Mediated Contingency
	Automatic Contingency
	Socially Mediated Contingency

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B-8: Define and provide examples of unconditioned, conditioned, and generalized reinforcers and punishers

Given several examples, identify which are unconditioned, conditioned, and generalized reinforcers and punishers, and develop new examples for each.

Example	Type (Unconditioned, Conditioned, Generalized)
Tatiana gets to work early on Fridays because she enjoys seeing her friend who only works on Fridays.	*Conditioned Reinforcer*
Dion drank too much at the bar last night, missed an exam and had a terrible headache the next day. He refused to drink any alcohol for a whole week after that.	*Generalized Punisher*
Seamus goes down a metal slide on a hot day and never wants to play on the slide again.	*Unconditioned Punisher*
Warren often puts his children to bed early so he can get some sleep.	*Unconditioned Reinforcer*
Mrs. Foster gives out tickets to students in her class for following directions and handing in homework. Students can trade tickets in for prizes and homework passes at the end of the week.	*Generalized Reinforcer*
Raffaela avoids anything that smells like cheese curls after she vomited once from eating them.	*Conditioned Punisher*
	Unconditioned Reinforcer
	Conditioned Reinforcer
	Generalized Reinforcer
	Unconditioned Punisher
	Conditioned Punisher
	Generalized Punisher

B-10: Define and provide examples of stimulus control

Given several examples, identify which stimuli function as S^Ds and which function as S-deltas, and generate new examples for each.

Example	Type (S^D or S-delta)
Hearing a cell phone alert lets you know checking may be reinforced with a text message	*S^D*
Hearing the ringtone associated with your mother-in-law lets you know you may have an unpleasant conversation if you answer	*S-delta*
Seeing boiling water lets you know that pouring the water on a tea bag will result in a cup of tea	*S^D*
Seeing a police car by the side of the road results in drivers obeying the speed limit	*S^D*
Seeing your grandmother is a signal that telling a dirty joke won't be appreciated	*S-delta*
Sign on the pizzeria door that says "Due to inclement weather we are sold out of wings" so you don't bother going in	*S-delta*
	S^D
	S-delta
	S^D
	S-delta

B-10: Define and provide examples of stimulus control

Given several examples, identify which represent stimulus control and which represent stimulus generalization, and generate new examples for each.

Example	Type (Stimulus Control or Stimulus Generalization)
Muhammed is a 3-year-old boy who says “cat” when he sees any furry, four-legged animal with a tail.	*Stimulus Generalization*
Rodrigo is a 4-year-old boy who says “cat” when he sees cats and “dog” when he sees dogs.	*Stimulus Control*
Earl only attempts to open his hotel room door when he sees the light turn green after putting the key card in the slot.	*Stimulus Control*
Fiona recognizes a phone with a cord and rotary dial even though she has only ever used a touch-screen mobile phone.	*Stimulus Generalization*
Mikka answers when someone asks “how are you?” or “how ya doing?” or “what’s happening?”	*Stimulus Generalization*
Isabel asks her father for money because she knows he will give it to her, but never bothers to ask her mother who is frugal.	*Stimulus Control*
	Stimulus Control
	Stimulus Generalization
	Stimulus Control
	Stimulus Generalization

B-11: Define and provide examples of discrimination, generalization, and maintenance

Given several examples, identify which describe discrimination, generalization, and maintenance, and generate new examples for each.

Example	Type (discrimination, generalization, or maintenance)
Pancho learns to use a soda vending machine. When he sees a snack vending machine, he is able to use that one, too.	*Generalization*
Juliet only takes her macaroni and cheese out of the oven after she hears the timer ring.	*Discrimination*
Engel remembers how to knit a scarf from when her grandmother taught her several years ago.	*Maintenance*
Ramon uses Euros to pay for things in Europe, and dollars to pay for things in America.	*Discrimination*
Maria travels to Italy for her honeymoon, and can understand some of the spoken language that she learned in high school.	*Maintenance*
Leo learns to drive on a Volkswagen Bug, and is able to drive a Jeep and a Mustang without further training.	*Generalization*
	Discrimination
	Generalization
	Maintenance
	Discrimination
	Generalization
	Maintenance

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B-12: Define and provide examples of motivating operations

Write definitions and examples for each of the different types of motivating operations. Given several examples, identify which motivating operation is described for each. Add new examples of each type of motivating operation.

Type of motivating operation	Definition
Unconditioned motivating operations	*Unlearned stimulus condition with value- and behavior-altering effects*
Conditioned motivating operations	*Learned stimulus condition with value- and behavior-altering effect*
Transitive motivating operations	*Learning history results in environmental variable that establishes/abolishes effectiveness of reinforcing another stimuli; causes/abates behavior reinforced by another stimulus*
Reflexive motivating operations	*Neutral stimulus is paired with an aversive unconditioned motivating operation and acquires the same value-altering and behavior-altering effects as the unconditioned motivating operation with which it was paired*
Surrogate motivating operations	*Neutral stimulus that is paired with unconditioned motivating operation or conditioned motivating operation and acquires the same value-altering and behavior-altering effects as the unconditioned motivating operation or conditioned motivating operation with which it was paired*

Example	Type
Not eating for several hours results in hunger, which is a motivating operation that increases value of food and food-seeking behavior.	*Unconditioned motivating operations*
Not drinking for several hours is paired with a commercial of someone enjoying a beer, resulting in beer-seeking and drinking behavior. Future beer commercials lead to beer-seeking and drinking behavior.	*Conditioned motivating operations*
A mother comes when her child calls for her. The child is more likely to call for his mother when he has a nightmare. The nightmare doesn't make the mother's coming more likely, but makes the mother's presence more reinforcing.	*Transitive motivating operations*
A child is asked to clean up his room by his parents. If he doesn't clean his room within a few hours, he will be nagged about his messy room. The parents' request to clean his room is a signal warning that failure to respond will result in a worsening condition. Over time, the child learns to clean his room quickly when asked to avoid the nagging.	*Reflexive motivating operations*

Seeing a fast-food restaurant when hungry can result in going into the restaurant and eating, resulting in the reinforcer of decreased hunger. This may lead to feelings of hunger when seeing a fast-food restaurant in the future, even if one has recently eaten and shouldn't necessarily feel hungry at that time.	*Surrogate motivating operations*
	Conditioned motivating operations
	Surrogate motivating operations
	Transitive motivating operations
	Reflexive motivating operations
	Unconditioned motivating operations

B-13: Define and provide examples of rule-governed and contingency-shaped behavior

Given several examples, identify which describe rule-governed and which describe contingency-shaped behavior, and generate new examples for each.

Example	Type (rule-governed or contingency-shaped)
Ahmad did not need to be hit by a car to learn not to run into traffic.	*Rule-governed*
Severine was burned when she touched a hot stove and will not touch the hot stove again in the future.	*Contingency-shaped*
Nemy opens a cookie jar and finds cookies. She is more likely to open the cookie jar in the future.	*Contingency-shaped*
Laurent eats a healthy diet so that he can maintain a healthy body.	*Rule-governed*
	Rule-governed
	Contingency-shaped
	Rule-governed
	Contingency-shaped

B-14: Define and provide examples of the verbal operants

Given several examples, identify which verbal operants are described, and generate definitions and new examples for each.

Type of verbal operant	Definition
Mand	*A specific response when the speaker asks for what he or she wants or needs; the only verbal behavior which directly benefits the speaker; source of control is unconditioned motivating operations or conditioned motivating operations and reinforcing consequence of receiving what is requested*
Tact	*A speaker names things and actions; source of control is non-verbal discriminative stimulus and consequence*
Intraverbal	*A speaker differentially responds to the verbal behavior of others; no point to point correspondence with the verbal stimuli; source of control is verbal discriminative stimulus and consequence*
Echoics	*A speaker repeats a verbal behavior of another speaker; there is a point-to-point correspondence with the verbal stimuli; source of control is verbal discriminative stimulus and consequence*
Transcription	*Spoken verbal response that evokes a written, typed, or finger-spelled response. The cause of a textual verbal operant. Spoken by the person who is dictating to others.*
Textual	*Text (written, typed, or finger-spelled) that is evoked by a spoken verbal response. Caused by a transcription verbal operant. Occurs by the person who is hearing a verbal response.*

Example	Type (mand, tact, intraverbal, echoic, transcription, textual)
S^D: Child sees an airplane Response: "Airplane."	*Tact*
S^D: "Old McDonald had a . . . " Response: "Farm."	*Intraverbal*
S^D: Students present in the class Response: Teacher giving a class lecture	*Transcription*
S^D: Feeling of hunger Response: "Can I have some pizza?"	*Mand*
S^D: Teacher giving a class lecture Response: Student writing down the words said by the teacher	*Textual*
S^D: "Apple." Response: "Apple."	*Echoic*
S^D: Conference speaker introduces the keynote speaker by name Response: Sign-language interpreter finger-spells the name	*Textual*

S^D: Music is too loud Response: "Turn it down, please."	*Mand*
S^D: "How old are you?" Response: "Six years old."	*Intraverbal*
S^D: People are in the audience at a conference Response: Keynote speaker says her contact information	*Transcription*
S^D: Child sees a cat running Response: "Running."	*Tact*
S^D: "Dog." Response: "Dog."	*Echoic*
	Mand
	Tact
	Intraverbal
	Echoic
	Transcription
	Textual

B-15: Define and provide examples of derived stimulus relations

Given several examples, identify which derived stimulus relationship is described, and generate definitions and new examples for each.

Type of derived stimulus relationship	Definition
Reflexivity	*When without training, a response is selected that matches the sample stimulus exactly. A=A*
Symmetry	*When the learner is taught that A=B and demonstrates that B=A without additional training.*
Transitivity	*A stimulus-stimulus relationship that results from training in two other stimulus-stimulus relationships. A=B, B=C, therefore A=C*

Example	Type
A person is taught to pick the picture of a dog when shown the written word "dog," and without additional teaching, will pick the written word "dog" when shown a picture of a dog.	*Symmetry*
Given the written word "dog" and three other written words including "dog," "cat," and "mouse," the person picks the word "dog."	*Reflexivity*
A person is taught to pick the picture of a dog when hearing the spoken word "dog," and to pick the written word dog when shown a picture of a dog; without additional training, she can pick the written word "dog" when hearing the spoken word "dog."	*Transitivity*
	Reflexivity
	Symmetry
	Transitivity

C-2: Distinguish among direct, indirect, and product measures of behavior

Given several examples, identify which types of measures are described (direct, indirect, or product), and generate definitions and new examples for each.

Type of measure	Definition
Direct measure	*Behavior is directly observed and measured. If done correctly, considered a valid way to measure behavior.*
Indirect measure	*Assumptions about behavior are made based on a survey, rating scale, or other means. Considered less valid than direct measures because inferences are required between the measure and the behavior of interest.*
Product measure	*Behavior is measured by the permanent effect it has on the environment.*

Example	Type (direct, indirect, product)
Taking trial-by-trial data on independent and prompted responses during discrete trial teaching.	*Direct measure*
Asking a staff member to fill out a survey to determine function of behavior.	*Indirect measure*
Parent reported that the child was manding more frequently at home today.	*Indirect measure*
Child's name written on the top of the worksheet.	*Product measure*
Recording data related to frequency of self-injury by reviewing a video recording.	*Direct measure*
Number of pieces of litter in the park before and after adding extra trash cans.	*Product measure*
	Direct measure
	Indirect measure
	Product measure
	Direct measure
	Indirect measure
	Product measure

C-5: Measure form and strength of behavior (e.g., topography, magnitude)

Given topographical definitions of several examples of behavior, develop magnitude measures for each.

Definition	Magnitude Measure
Petra tears her clothing using her hands.	*Possible rating scale:* *1 – single tear, less than 1 inch* *2 – 2 to 4 tears, less than 1 inch each* *3 – single tear, more than 1 inch* *4 – 2-4 tears, at least one more than 1 inch* *5 – more than 2-4 tears of any length*
Angelo speaks in a conversational tone of voice.	*Possible rating scale:* *1 – inaudible at any distance* *2 – audible only within 2 feet* *3 – audible within 3-5 feet* *4 – audible within 3-10 feet* *5 – audible from anywhere in the room*
Maura exercises using hand weights.	*Possible measure:* *Number of repetitions and weights for each exercise.*
Jack scratches his teachers by running his fingernails along their skin.	*Possible measures:* *Length of scratch* *Intensity of color (light red, dark red)*

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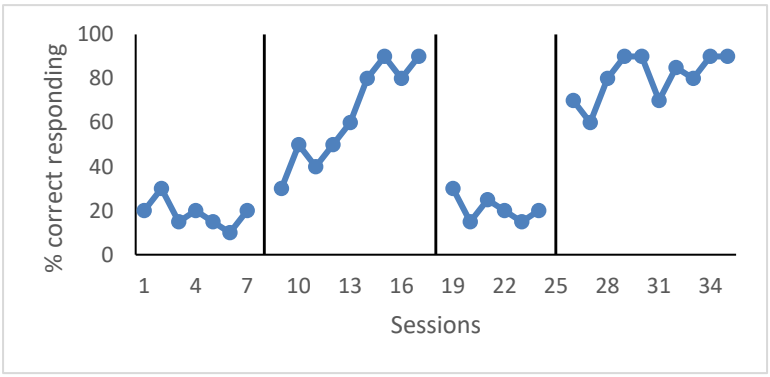
D-2: Distinguish between internal and external validity

Given several examples, identify which type of validity is described (internal or external), and generate definitions and new examples for each.

Type of validity	Definition
Internal validity	
External validity	

Example	Type
Being reasonably certain that a student's problem behavior was reduced by functional communication training after the intervention was put in place.	*Internal validity*
	*Internal validity*
Demonstrating that a token economy is effective in both home and school environments.	*External validity*
Using strategies that have been shown to be effective in teaching neurotypical children to read with children with neurological disorders, and finding that their reading skills improve also.	*External validity*
	Internal validity
	External validity
	Internal validity
	External validity