

Glossary

Note: Numerals at the end of each definition indicate the chapter(s) in which the term was defined and/or further illustrated. Also, several other common terms are listed without a chapter number in that they are used in context, but not separately defined in a particular chapter. They are listed here should you wish to re-familiarize yourself with the term's meaning.

A-B-C Analysis. A method for analyzing relationships among the behavior (B) and its consequences, (C) and its antecedents (A). 2, 10

Abscissa. The x value, on the x-axis or horizontal line of a graph, usually expressed in observational sessions or standard units of time, such as hours, days, weeks or months. 8

Accountability. Objective demonstration and communication of the effectiveness of a given program: functional relations, behavioral outcomes, cost-benefit, consumer satisfaction, and so on. 9, 25

Accuracy. The extent to which the response meets standards or is correct. 4

Across-behavior multiple-baseline design. A single-subject or intensive experimental design that involves: (1) Obtaining a validly representative set of pretreatment measures (baseline) of several *different behaviors*; (2) applying the intervention or experimental procedure to one of the behaviors until its measurement pattern changes substantially, while continuing to record the baseline measures of the other behaviors; (3) applying the identical intervention to a second behavior; then to a third and so on. The procedure continues until it becomes apparent that each behavioral measurement

changes concurrent with the intervention. 9

Across-individuals multiple-baseline design. A single-subject or intensive experimental design that involves: (1) collecting baseline measures on the same behavior of several *different individuals*; (2) applying the intervention first with one individual while the baseline conditions are continued with the other individuals; then (3) applying the intervention to the second individual's behavior as in item (2). This procedure is continued until it becomes apparent that each individual's behavior systematically changes only when the intervention is applied. 9

Across-situations multiple-baseline design. A single-subject or intensive experimental design that involves: (1) Collecting baselines on a behavior of one or more individuals across *different situations*; (2) testing the effects of the intervention (*independent variable*) first in one situation, while the baseline conditions are continued through the other situations; and (3) applying the intervention in the second situation as in item 2. This procedure is continued until it becomes apparent that behavior systematically changes only in those situations in which the intervention is applied. 9

Activity reinforcer. Contingent access to activities (watching TV, skating,

playing, and so on) that support the increase or maintenance of the target behavior. 6

Activity schedules. Written or pictorial displays of the daily sequence of activities in which the client is assigned to engage or to complete by the time a cue (S^P) is activated (e.g., lights on and off, verbal instructions, a timer) to signal time-to-change to the next activity. Generally the schedules are displayed in vertical format to permit participants to review and move the depiction of each activity from the *to-be-completed* to the *completed* column, as the day progresses. 26

Activity table. A surface on which materials for a variety of reinforcing activities are displayed. Individuals may earn access to time at the table for accomplishments, such as completing their work or following various classroom rules. 28

Adaptation. Refers to the gradual reduction in the rates of responding evoked by a stimulus over repeated or prolonged presentations (as when the client no longer reacts to the presence of an observer). A period of time during which reactivity subsides. When the rate of the behavior has stabilized, adaptation is assumed to have been accomplished. The term adaptation tends to be used in operant conditioning. Also see Habituation. 7, 11

Adjusting schedule. See Ratio schedules of reinforcement. 22

Advocate. A person or group serving to protect a client's interests; not one who is employed by the organization or institution delivering services. Advocates, who may be community representatives such as clergymen, law students, or a panel of interested citizens, consider a program's goals and procedures in terms of what they believe is best for the *individual* client and argue on the client's behalf. 4, 11

Alternating-treatment design. (Also often called multi-element, simultaneous treatment, multiple schedule, and concurrent schedules design.) A within-subject or intensive experimental design consisting of alternating presentations of two or more independent variable arrangements. The term multi-element has sometimes been reserved for situations in which each arrangement is correlated with a distinctive discriminative stimulus. The distinctive response patterns generated under each condition then are revealed by comparing performance under each of the variables. 25

Alteration effects. See Sequence effects. 25

Alt-R. See Differential reinforcement of alternative behaviors; when alternatives are not compatible with the original behavior of interest, the term *reinforcement of incompatible behaviors* is applicable. 28

Alternative goals. While these behavioral goals are not necessarily designed to serve the same function for the client as his misbehavior did, they are designed to teach alternative ways to behave. These might include either other appropriate ways of behaving, and/or ceasing inappropriate behavior. Such goals may be added to the mix, assuming the constructive behaviors are emphasized. Also see Goals and Functional goals. 4

Anecdotal assessment. See Indirect assessment. 10

Antecedent control strategies. These involve the manipulation of some aspect of the physical or social environment to "evoke" (set the stage for) a desired response or to reduce the likelihood of occurrence of a competing response. Generally speaking,

antecedent control procedures can be categorized into three approaches: manipulating discriminative stimuli, motivational operations, and/or various complex combinations of antecedent control strategies. 15-20 & 26

Antecedent stimulus. A stimulus that precedes or accompanies a behavior and may exert discriminative control over that behavior. 2

Applied behavior analysis (ABA). ABA connotes a scientific method, a technology, and a professional approach. It is a system designed to analyze and change behavior in a precisely measurable and accountable manner. ABA is an evidence-base method of examining and changing what people (and other living creatures) say and do. 1

Applied behavior analysis program. A systematic approach to analyzing and changing behavior. The program essentially incorporates the full behavior analysis model (see Figure 1.1): Establishment of behavioral objectives; selection and application of valid and reliable measures; regular recording; consistent application of selected procedures based upon principles of behavior; plus an experimental evaluation of results. An applied behavior analysis program sometimes is referred to as a *behavior analysis program*, *behavioral program*, or a *behavior modification or therapy program*. 1

Applied behavior analyst. An individual who has demonstrated mastery of the professional competencies involved in assessing behavior and designing, implementing, functionally analyzing, and communicating the results of an applied behavior analysis program. 1, 31

Applied research. Research directed toward an analysis of the variables that can be effective in improving the behavior under study (Baer et al., 1958). In applied behavior analysis, research involves examining socially important behaviors. Applied research usually is conducted in natural settings rather than in the laboratory. 1, 9, 25

Artificial discriminative stimulus. A prompt or discriminative stimulus that is not naturally present in the environment. Because an artificial stimulus is intrusive, before the learner has been judged to have achieved of the

goal, it should be faded or gradually eliminated. (E.g., Verbal instructions may be used as artificial stimuli while a student learns a new motor skill. Those verbal prompts are faded as the skill is refined.) 17, 18, 20

Artificial reinforcer. A reinforcer not usually present in the natural setting or not a natural consequence of the behavior. For example, trinkets are artificial reinforcers, used to reward good performance in many school programs. 10

Asymptote. The point at which the behavior reaches its peak – that is, when the increase stops and the rate levels off and remains steady, possibly before declining. 22

Augmentative verbal communication. Methods of supporting communication beyond the typical means of speaking, writing, gesturing etc. Augmentative methods may include, among others, using signs, touching images or vocal key pads, activating computer generated and other mechanical devices, and exchanging images. See also PECS. 19

Automatic reinforcer. The reinforcement is inherent in the response itself (i.e., thumb sucking, twirling hair, masturbation, or rocking back and forth may produce a reinforcing sensation for the client). 6, 10

Aversive stimulus. A stimulus, also called a *punisher*, with the function of decreasing the strength (e.g., rate) of a behavior when presented as a consequence of (is contingent on) that behavior. A stimulus, also called a *negative reinforcer*; the contingent *removal* of which results in an *increase* in the rate of the behavior. Organisms will work to avoid aversive stimuli. A stimulus that abates (halts) a behavior from occurring (S^{DP}). The term aversive stimulus is used to apply to all stimuli labeled reductive, punishing, abating, or those whose termination is negatively reinforcing at that point in time. Non-technically: A noxious object or event. (Note: There is no *d* in the word aversive.) See also Negative reinforcer; Punisher, S^{DP} , Primary aversive stimulus, and Secondary aversive stimulus. 5, 29, 30

Avoidance behavior. A class of behavior that postpones or circumvents an aversive stimulus. The act of avoidance

- cannot remove an aversive stimulus because it has not yet occurred, but rather it prevents its occurrence or postpones it. Avoidance behaviors protect or prevent the individual from being subjected to an aversive stimulus for the time being. Related to *negative reinforcement* in that the avoidance behavior increases in rate when it completely postpones or avoids an aversive stimulus. Nontechnically: An action the individual does to keep from getting punished. 5, 29, 30
- Awareness of being assessed.** See Observer awareness of being assessed. 7
- BACB.** See Behavior Analysis Certification Board. 31
- Back-up reinforcer.** An object or event that already has demonstrated its reinforcing function for the behavior of an individual. It is distributed in exchange for a specific number of tokens, points, or other exchangeable reinforcers. For example, points might be exchanged for the back-up reinforcer of free time. 12
- Backward chaining procedure.** Effecting the development of a behavioral chain of responses by reinforcing the last response, element, or link in the chain first; the last two next; and so on, until the entire chain is emitted as a single complex behavior. 14
- Bar graphs.** Graphic depictions in bar form; generally used to compare discrete sets of data that relate to one another; or to summarize performance within a condition or group of individuals. 8
- BARS.** See behaviorally anchored rating scale. 7#
- Baseline.** Repeated measures of the strength or level (e.g., frequency, intensity, rate, duration, or latency) of behavior prior to the introduction of an experimental variable (treatment, intervention, or procedure). Baseline measurements are continued until performance has stabilized and can be used as a basis for assessing the effects of the intervention or experimental variable. 8, 9
- Basic research.** Research typically conducted in a laboratory setting where it is possible to arrange tight experimental control. 9
- BCBA.** See Board Certified Behavior Analyst. 31
- Behavior.** Any living organism's, including people's directly measurable actions or physical functions, including both saying and doing. In this text we use the term *behavior* synonymously with *response* and *performance*, and the term *behavior* as an abbreviated way of saying "classes of behavior." Two functional classes of behavior (i.e., behaviors that lead to reinforcers) include those acting directly on the environment (e.g., the male gathering fruit for himself) and the other is that mediated by the behavior of others – verbal behavior. 1, 2, 19
- Behavior Analysis.** Experimental investigation of variables that influence the behavior of any living organism. 1
- Behavior Analysis Certification Board (BACB).** An organization concerned with developing, promoting and implementing performance standards in the form of an international certification program for those alleging to provide behavior-analytic services. Its purpose is to protect clientele, and to promote ethically sound "best practice." 31
- Behavior analytic procedure.** See Behavioral procedure. 2
- Behavioral assessment.** Behavioral assessment is used to investigate first, an individual's typical patterns of behavior; then depending on findings, to identify and describe specific challenges, and to plan, execute, and evaluate treatment as objectively, validly and clearly, as possible. Depending on the behavior and its context, specific valid and reliable measures are selected, and applied in order validly to depict the characteristics of the behavior of interest prior to any intervention (the pre-intervention baseline). Should an intervention subsequently be undertaken, the measures are collected repeatedly and results analyzed during, and after any systematic intervention or treatment. Though direct observation forms the core of behavioral assessment, indirect methods sometimes also are added to guide our selection of the most appropriate treatment strategy. Also see Sensitive measure, Objective measure, Reliable measure, and Valid measures. 7
- Behavior chain.** See chain, behavioral. 14
- Behavioral contract.** The negotiated goals and procedures of a behavior analysis program, mutually agreed upon by the client or advocate and other involved persons, and modifiable by joint consent. A behavioral contract often communicates *who* is to do *what with or to whom*, by *when*, and *anticipated outcomes*. Also called a *contingency contract*. 4, 11
- Behavioral contrast.** When a procedure that decreases behavior (e.g., DRO, extinction, or punishment) is introduced into one context, the behavior maintained in other contexts may increase, despite no other change in contingencies directly affecting the latter. This increase is called *positive behavioral contrast*. Behavioral contrast also has been observed when the schedule of reinforcement has been increased in one situation while remaining constant in the other. In this case performance may *decrease* in the constant situation producing a *negative behavioral contrast*. 23, 27
- Behavioral cusp.** A behavior (or behavioral class) that affords clients greater access to reinforcers, by expanding their repertoires and enabling more rapid learning. Similar to *pivotal behavior*. Listening, following instructions etc. are examples. 4
- Behavioral dimensions.** Measurable parameters or descriptive characteristics that describe particular aspects of the performance, such as frequency, rate, intensity, duration, topography, and accuracy. Behavioral dimensions are included in *behavioral objectives* (see below). 4
- Behavioral goal.** Behavioral goals state the direction (increased, decreased, maintained, developed, expanded, or restricted) and level to which the target behavior is to be changed: A behavioral goal should be translated into a set of behavioral objectives prior to designing a program. *Also see* goal. 4
- Behavioral laws.** Principles of behavior that have been demonstrated to possess very broad generality. The predictable functions of immediacy and schedules of reinforcement are examples. 2
- Behaviorally anchored rating scale (BARS).** A method of assessing per-

formance by assigning a numerical value to one's judgments. Each number on the scale represents a specific set of observable behaviors, such as steps, tasks, severity of a behavior, or skills involved in a complex task. These numbers and their corresponding behaviors are located on a rating scale. 7

Behavioral momentum. Strength of force or motion. In behavior analysis, when a behavior is repeated at a high, steady rates. Promoting behavioral momentum is a strategy used to increase the likelihood that a low probability behavior will occur by presenting stimuli known to promote a high probability of responding (e.g., compliance) ahead of an activity less likely to be performed. For example, Sula presents several cards for Irma to read aloud. The first six or seven contain words that Irma is known to label (tact) automatically, while the next few are more difficult for her. The initial string of successes encourages her to persist with the more difficult ones. 26

Behavioral objective. Precise specification of a goal behavior, including three essential elements: (1) The behavior; (2) the givens—situations, context, or conditions under which the behavior is to occur; and (3) the standard of acceptability or *criterion* level of performance. When the objective is related to formal instruction, it is called an *instructional objective*. 4

Behavioral package. A combination of two or more selected behavioral procedures. 24

Behavioral principles. Lawful relations between behavior and the variables that control it, discovered through experimental analyses of behavior. Behavioral principles may help to explain previous and present performance and to predict future behavior, because the relations have been found to apply across responses, people, and contexts. 2

Behavioral procedure or strategy. Interventions or treatments used to induce behavioral change (e.g., the application of behavioral principles). Behavioral procedures, or strategies, are used to occasion, teach, maintain, increase, extend, restrict, inhibit, or reduce behaviors and constitute the

core of most applied behavior analysis programs. 2

Behavioral product recording. See Permanent product recording. 7

Behavioral rehearsal. Reinforced practice of a complex skill under simulated conditions. Role playing is one form of behavioral rehearsal. 16

Behavioral repertoire. The total complement of behaviors that an individual previously has demonstrated. It has been shaped, or, if it has been extinguished, it may be rapidly reconditioned. 5

Behavioral technicians. Auxiliary workers, such as observers and data recorders, whose services may be required to conduct some of the technical aspects of a behavior analysis program: e.g., designing and implementing observational recording systems; designing and executing graphing schemes and so on. 8

Behavior modification. Interventions based on the science of behavior and designed to change behavior in a precisely measurable manner. Term often used interchangeably with *applied behavior analysis* and *behavior therapy*. "Applied behavior analysis," though, is further restricted to those interventions that include an experimental analytic design to assess treatment effects. The term *behavior therapy* often is used when respondent (i.e., "Pavlovian") procedures are emphasized. Treatment involving modification of self-communication ("thoughts" and "images" "phobic reactions") usually is labeled "Cognitive Behavior Therapy." 1

Board Certified Behavior Analyst (BCBA). An individual who has completed a BACB approved academic program, participated in a BACB specified field experience under supervision of a BCBA, passed the BCBA examination, and has completed at least a master's degree. (Those with a doctorate are designated BCBA-D.) A Board Certified Assistant Behavior Analyst (BCaBA) meets similar requirements, but has less training and must work under the supervision of a BCBA. 31

Bonus response cost. See Response cost. 29

Carry-over effects. See Sequence effects. 25

Catch 'em being good game. Sometimes called the *Slot machine game*. A game of chance in which participants receive reinforcers as prizes. Several cups are placed upside down, concealing paper slips on which the names of reinforcing items or events are written. Each participating client or staff member (selected on the basis of having engaged in the desired target behavior) chooses one cup, thereby gaining the indicated reinforcer. This game incorporates modeling and DRA. 28

Celeration chart. See Standard celeration chart. 8, 17

Chain, behavioral. A complex behavior consisting of two or more response segments that occur in a definite order. "... a sequence of responses that are functionally linked to the same terminal reinforcer" (Kuhn, Lerman, Vorndran, & Addison, 2006, p. 263). A chain can be homogeneous or heterogeneous. Homogeneous chains consist of responses that are similar to one another, as in lifting or throwing. Heterogeneous chains consist of responses that differ from one another, as in playing football or assembling a barbecue. 14

Chaining procedure. A procedure in which intact responses are reinforced in sequence to form more complex behaviors ultimately emitted as a single cohesive performance. See also Backward chaining procedure and Forward chaining. 14

Change in level. Depicts the amount (often assessed as the average frequency, rate, accuracy or other response measure emitted within a given time-span) by which the behavior has changed; that is, whether the average (mean, median or mode) performance rate is higher, lower or remaining the same as compared to previous average performance 8

Changing criterion design. An applied behavior analytic design involving successive changes in

the criterion for delivering consequences, usually in graduated steps from baseline levels to a desired terminal goal. Experimental control is demonstrated if the behavior changes to meet or

- closely approximate each successively set criterion level. 25
- Choral responding.** Answering questions or imitating modeled statements as a group in unison. Within the process, the group leader identifies those who fail to respond appropriately and assists them afterward. Because everyone is engaged, individual students have less opportunity to misbehave. 26
- Classical conditioning.** See respondent conditioning. 2
- Client.** The person who receives the services of a behavior analyst, and/or of an agency or organization; the individual whose behavior is targeted for change. Often labeled the “participant” in an applied behavior analysis program. The terms *subjects*, *students*, *learners*, and *patients* also are used interchangeably with *clients*. 3
- Clinical significance.** The change is considered clinically significant if the pre-stated objective is obtained, and/or when the behavior change has spurred correlated (ecological) changes for the participants, and their physical and social environments. 25
- Coefficient of agreement.** See Reliability. 7
- Coercion.** Coercion occurs in two forms: 1) oppressive or aversive force and 2) disproportionately powerful incentives; often involves threats, severely punitive contingencies, or disproportionately powerful incentives for the purpose of inducing a behavioral change toward an objective unwanted by the client (or their surrogates). Coercion is said to be increasing as the value of incentives and threats increase beyond socially or personally acceptable norms and the client becomes progressively less involved in goal selection. 4
- Collateral behaviors.** Behaviors not treated directly, yet whose rates may change as another behavior is directly treated. Also, behaviors, other than those intentionally treated, that might be influenced by the treatment. (Sometimes labeled *adjunctive behaviors*.)
- Collateral measures.** Measures of variables that relate indirectly to changes in the target behavior. Included would be assessing the impact on the “bottom line” as well as the un-programmed spread of effect to other people, places or behaviors.
- Communicative stimuli.** See Verbal stimuli. 19
- Competing reinforcers.** Powerful reinforcers, such as social attention, musical toys, art materials, etc. that interfere with the reinforcing function of the problem behavior. 27
- Complete stimulus control.** See Stimulus control, strong. 16
- Component analysis.** Analysis conducted for the purpose of identifying the separate contributions of each of a combination of elements to the overall behavioral change. 25
- Computer assisted or aided instruction (CAI).** Instruction aided by computer technology, including presenting curriculum, directing student responses and providing feedback and reinforcement. It may permit responses to be analyzed immediately, and allow instructional material to branch into remedial or advanced levels depending on the learner’s performance. 18
- Concept.** One or a set of abstract critical properties shared, perhaps only in part, among a number of critical antecedent stimuli. Among the features common to dogs (with unusual minor exceptions) are that they are canines, have hair, tails, and four legs; they bark; and they are readily domesticated. That omits many creatures including rodents, raccoons, and cats, who don’t bark, and seals, who don’t have four legs, turtles, who don’t have hair and wolves, not easily domesticated. 16
- Conceptual analysis of behavior.** Verbally addresses historical, philosophical, theoretical, and methodological issues and relations among different behavioral properties. 1
- Conceptual task analysis.** See task analysis. 4, 14
- Concurrent schedules design.** See alternating treatment design. 25
- Concurrent task method of chaining.** (Also known as total or whole task method of chaining.) A simultaneous teaching method, in which all or several elements are taught concurrently, as opposed to joining or adding one link at a time, as in the serial methods of forward and backward chaining. 14
- Conditional discriminations.** See Discrimination, conditional. 16, 17
- Conditioned aversive stimulus.** See Secondary aversive stimulus 2, 4, 30
- Conditioned motivating operation (CMO):** See Motivating operations, conditioned. 15
- Conditioned respondent stimulus.** See respondent conditioning. 2
- Conditioned reinforcer (S’).** See Secondary reinforcer. 2, 6
- Conditioned respondent.** Respondents can be *conditioned*, as in Pavlov’s famous experiments with the conditioning of dogs’ salivation response to a bell. Also see respondent behavior. 2
- Confounding variables.** Uncontrolled variables that influence the outcome of an experiment to an unknown extent, making impossible the precise evaluation of the effects of the independent on the dependent variable(s). 9, 25
- Constructional approach.** An approach to changing behavior that emphasizes building behaviors rather than reducing or eliminating them. It involves (1) observing or interviewing to determine the goal; (2) identifying the current repertoires on which to build; (3) selecting change procedures to permit building on current repertoires in achievable steps; and, (4) selecting and using natural reinforcers that will maintain the goal behavior. 4
- Contact desensitization.** See Desensitization, contact. 13
- Context.** The surrounding conditions and limitations, under which the response occurs, including the setting, furnishings, materials, personnel, and so on. 4
- Contextual factors.** See Context. 3, 11, 26
- Contextual fit.** Contextual fit is the condition achieved when an appropriate intervention is selected that suits the skills, resources, schedules, and values of the contingency managers (i.e., program implementers). 3
- Contextually inappropriate behavior (CIB).** Behavior unacceptable in a particular situation. 26
- Contingencies.** The specified dependencies or relations between behavior and its antecedents and consequences. Contingencies can occur naturally or be managed intentionally by present-

- ing, withdrawing, or withholding stimuli to affect either other people's or one's own behavior. 2
- Contingency analysis.** A description of an individual's goal and/or problem behavior and the events that are noted to precede and follow those behaviors. Used to begin to identify contingencies that may be functionally related to goal and problem behaviors. 10
- Contingency contract. See Behavioral contract. 4, 11
- Contingency control.** The capability effectively to manage the functional antecedents and consequences of given responses. 10
- Contingency managers.** Individuals—parents, nurses, teachers, counselors, therapists, and/or the clients themselves—who conduct the day-to-day operation of a behavioral program by systematically applying behavioral strategies or procedures; program implementers. 3
- Contingency-shaped behavior.** Behavior learned by experiencing consequences directly. Behavior shown to be more susceptible to generally prevailing contingencies than to verbal stimuli such as instructions or rules. 18
- Contingent delay.** An extension of the timeout interval by a period of time contingent on inappropriate behavior during timeout. For example, until behavior is acceptable for at least a minute beyond the occurrence of the inappropriate behavior, the individual would not be permitted to leave the timeout setting. See Timeout (TO). 29
- Contingent effort. See Contingent exertion. 30
- Contingent exertion** (also called *contingent effort* and *contingent exercise*). Physical exertion or effort required as a consequence of misbehavior. E.g., an individual is required to perform an exercise routine such as standing up and sitting down rapidly ten times following each occurrence of the unwanted response. An aspect of overcorrection. 30
- Contingent exercise.** See contingent exertion. 30
- Contingent observation.** See Inclusion timeout. 29
- Contingent relation.** The relation between a behavior and its antecedents and/or consequences. 10
- Continuous behavior.** A response lacking a clearly discriminable beginning or end. Pouting, smiling, eye contact, and other behaviors often are treated as continuous responses because determining when the behavior begins and terminates is difficult. 7
- Continuous reinforcement (CRF).** A schedule of reinforcement in which each occurrence of a response is followed by a reinforcer. 11
- Contrast phenomenon.** See Behavioral contrast. 23
- Control condition.** Condition under which extraneous or potential confounding variables are held constant; used in applied behavior analysis for the purpose of eliminating alternative explanations for the results of an experimental analysis. 9, 10
- Control variables.** Variables held constant (that don't change) in an experiment (e.g., unless they are the subject of investigation, these are often materials, tools, setting, managers, teachers, and so on). 25
- Cooperative learning.** *Interdependent* and/or *dependent* group contingencies arranged to promote productive peer influence. Reinforcers are shared among group members 12
- Coping model.** See Model, coping. 18
- Correspondence training.** Delivering reinforcers contingent on correspondence or agreement between verbal reports (saying) and actions (doing). e.g., teacher praises Diane only after she actually has played with the crayons after previously saying she would. Because mother saw that he did actually help Jan with her math after he said he did, Mother loaned Bob the car. 21
- Criteria.** Constitute the part of the behavioral objective that states the standards used to determine its accomplishment; the specification of acceptable levels of performance to be achieved. Criteria used to evaluate the success of a given behavior analysis program are expressed as measurable behavioral dimensions (parameters like frequency, rate, acceleration, quantity and so on) that characterize particular aspects of the performance. 4
- Criterion analysis.** See Task analysis 4, 14
- Criterion level.** The level of performance to be achieved. 4
- Critical features of stimuli.** The distinctive properties of stimuli, such as size, shape, position, and color, that enable one stimulus class to be discriminated from another. Stimuli sharing a number of critical features often can be grouped to characterize a particular concept. Example: Mammals: creatures sharing these *critical features*: having fur, a backbone, and a spinal chord, and who suckle their young. Yet other critical features shared only among subsets of the stimuli, such as particular shapes, habits, genetic qualities, and so on, distinguish one subclass of stimuli from another, as with different species of mammals. 15
- Cumulative records.** A display of the rates of a behavior in the form of changes in the slope or curve of the response patterns (number of responses /a specific time period) generated as a function of conditions in effect. The steeper the line, the more rapid the response rate. The cumulative record also permits one to view at a glance the total number of responses accumulated during recording periods, as each new measure is added onto the previous total. 8
- Cusp.** See Behavioral cusp. 4
- Daily report card.** An arrangement among educational personnel, students, and their families; designed to coordinate the contingencies across settings. In one setting (e.g., the school), each day, the teacher reports the presence or absence of the target behavior and sends it to the other setting (usually the home), where a delayed consequence is presented. 11
- Data.** The numerical results of measuring some quantifiable aspect of behavior from which conclusions are often drawn. 7, 8, 9
- Datum.** The singular form of data. 7, 8, 9
- Dead man's test.** Used in goal selection. If a "dead man" can do it, the goal is not acceptable and needs to be changed into something constructive. 28

Delayed matching-to-sample. See Matching to sample, delayed. 16

Delayed prompting. A procedure, sometimes referred to as *time-delayed prompting* or *delayed cuing*, designed to teach a behavior by interposing a time delay between the presentation of the natural and an artificial prompt. When the natural antecedent stimulus (Sⁿ) fails to evoke a given response, an artificial S^p (prompt), usually a portion of or even the full correct answer, is inserted to occasion the behavior and thereby permitting it to be reinforced. Initially, the natural discriminative stimulus is presented concurrently with an effective artificial S^p, or prompt, to evoke and reinforce the appropriate response. Teaching using *progressive* or *graduated delayed prompting* usually progresses by gradually extending the time between the Sⁿ (e.g., a math problem) and the prompt (the answer), until the client emits the correct response reliably in advance of the prompt. *See also* Transfer of stimulus control. 20

Delay of gratification. Time between the response and its contingent reinforcer(s). 11

Dependent group contingency. A contingency arrangement in which the performance of an individual or several members of a group forms the basis for the group's access to reinforcement. For example, when the average of the lowest three student scores improve, everyone in the class receives reinforcers. 12

Dependent variable. A variable that changes systematically, as a direct function of a change in another variable (the *independent variable*). When systematic changes in the independent variable are reliably accompanied by changes in the dependent variable, we say the two are *functionally relate*—that the level or value of the dependent variable is in fact *dependent* on the level or value of the independent variable. In applied behavior analysis, the dependent variable usually is some behavioral measure; the independent variable, some condition or treatment that may affect a parameter (e.g., level, trend, variability) of that behavior. 9

Deprivation. The absence or reduction of a reinforcer for a period of time. Deprivation is a motivating operation that increases the effectiveness of the reinforcer and the rate of behavior. 6

Descriptive assessments. Involves observing the setting events, direct antecedents and the consequences that appear to correlate with the behavior of concern to predict its function. Descriptive assessments are often the initial step toward true functional (i.e., a cause and effect) relations between the behavior of concern and the events controlling its emission; The more closely given antecedents, behaviors, and consequences relate, the higher the probability that a functional relationship exists. 10

Desensitization, contact. Based on shaping, an intervention, that involves differentially reinforcing closer and closer approximations toward approaching an object the client fears or avoids, while the participant continues to relax. 13, 18, 30

Determinism. Doctrine that acts of will, occurrences in nature, or social or psychological phenomena are causally determined by preceding events or natural laws. 1

Differential observing responses (DOR). The DOR method is designed to gain the client's attention and to teach him or her to discriminate the defining characteristics, or critical features, of each sample stimulus, prior to the matching-to-sample task. For example, the client could be required to distinguish the distinctive letters (e.g., n, t, r) of the word ("enter" as opposed to "other"), immediately prior to having him match the whole words. 17

Differential reinforcement (DR). Consists of reinforcing particular behavior(s) of a given class (or form, pattern or topography) while placing those same behaviors on extinction and/or punishing them when they fail to match performance standards or when they occur under inappropriate stimulus conditions. Also., 15, 16, 27, 28

Differential reinforcement of alternative behavior (DRA). A reinforcement procedure usually designed to reduce a given behavior by reinforcing alternative behavior while withholding

reinforcement (e.g., using extinction and/or punishment) for the unwanted response. A procedure used for developing stimulus control. 28

Differential reinforcement of diminishing rates (DRD). A schedule according to which *reinforcement is delivered "when the number of responses in a specified period of time is less than, or equal to, a prescribed limit"* (Deitz & Repp, 1973, p. 457). Also see Progressive DRD. 28

Differential reinforcement of high rates (DRH). A schedule specifying that reinforcers are delivered only after several responses occur in rapid succession at or above a pre-established rate. Increasingly higher rates of the behavior are differentially reinforced until they reach a specific criterion level. 23

Differential reinforcement of incompatible behaviors (DRI). A sub-class of DRA, with a further restriction: the alternative behavior cannot be emitted simultaneously with the unwanted behavior. (E.g., reinforcing completion of work reduces those forms of disruption that are incompatible with working.) 23, 28

Differential reinforcement of low rates (DRL). A behavior is reinforced only if it occurs following a specific period of time during which it did not occur, or since the last time it occurred. *Example:* A teacher only compliments and calls on a student who waits for at least 3 minutes before participating again. 23, 28

Differential reinforcement of other behaviors (DRO). The differential reinforcement of the absence, omission or non-occurrence of a (particular) behavior. The reinforcement operation may strengthen whatever other behavior(s) the individual is emitting at the time; and, this explains why it is called differential reinforcement of other behavior. Sometimes called *omission training*, or *differential reinforcement of zero occurrences*. *See also* Momentary, Whole interval and Progressive DROs. [When a particular "other behavior" is identified as the one to be reinforced, the preferred term is DRA (differential reinforcement of an alternative behavior).] 28

Differential reinforcement of paced responding (DRP) is characterized by reinforcement arranged to occur contingent only on response rates emitted within set upper and lower limits. 23

Differential reinforcement of rate schedules. Under these schedules, various response sequences are differentially reinforced, depending on their rates: slowly, at an intermediate or paced rate, or faster. These include DRD, DRH, DRL and DRP (described above). 23

Direct instruction. A teaching method that involves using a prepared curriculum (i.e., DISTAR™) consisting of: (1) following a very carefully organized and detailed sequence of instruction; (2) teaching skillfully in small groups when appropriate; (3) evoking unison responses; (4) using signals to encourage all students to participate; (5) pacing presentations quickly; (6) applying specific techniques for correcting and preventing errors; and (7) using praise. 18

Direct observational recording. A method, sometimes called *observational recording*, in which human observers objectively record ongoing (or video-recordings of ongoing) behavior. Event and time sampling are both direct observational recording methods. 7, 8

Direct replication. See Replicate. 25

Discrete behavior. A behavior, such as a lever press, sneeze, hit, or a correct answer to an addition problem, that has a clearly discriminable beginning and end. The frequencies of discrete behaviors can be easily counted. 7

Discrete trial. See Discrete trial training. 18

Discrete trial training. Here, tasks are broken down into short, simple trials. A *discrete trial* is a single cycle of behaviorally-based instructional routine consisting of four or five parts: (1) Presenting, if necessary, the S^D or S^- -- a short, clear instruction or cue to which the client is to respond. (2) Providing a *temporary* prompt, if necessary, such as *showing* (or *telling* or *guiding*) the client's correct responding. (3) Waiting for the skill or instructional target behavior to occur. (4) Providing the reinforcer, such as positive feedback, praise or a high

preference item, designed to motivate the client to continue responding correctly contingent on the behavior. (5) Ending with an inter-trial interval consisting of a brief pause between consecutive trials. The trial is called *discrete* because it has a definite beginning and end. 18

Discriminated operant. A response operating under stimulus control. The response occurs only when the particular S^D is present. Discrete Trial Training (DTT) is an example of a method based on the use of discriminated operants. 15

Discrimination, conditional. A form of complex stimulus control in which the role of one discriminative stimulus is conditional on the presence of other discriminative stimuli (sometimes a *motivating operation*). Conditional discriminations involve a four term rather than a three-term contingency: conditional stimuli, antecedent stimuli, responses (behaviors), and consequences. In contrast with simple discriminations, each antecedent stimulus is discriminative for reinforcement, or not, conditional on the presence of another particular antecedent (e.g., a figure to match, as in matching to sample). Also, different contexts can change the effects of discriminative stimuli on behavior. For example, if bad weather causes a school closing, then the student may ignore the due date for a term-paper and immerse himself in his favorite video-game. Also see stimulus control, complex, and matching-to-sample. 16, 17

Discrimination, simple. An antecedent evokes or abates (inhibits) the behavior. Three elements, or a three term contingency, are involved: A discriminative stimulus, behavior (response), and consequence. Also see stimulus control, simple. 16

Discrimination, stimulus. A form of tight stimulus control in which responding is restricted to certain stimulus situations: those in which the response has been reinforced, and not to those in which it has not been reinforced. The ability to identify under which conditions, a behavior will lead to reinforcement, or not. Stimulus discriminations may be established by *differentially reinforcing* responding in one stimulus situation and extinguishing or punish-

ing that response in other situations, and/or by reinforcing other behavior in the other situations. 2, 16, 21

Discriminative control. When an individual responds consistently in the presence of a particular antecedent stimulus or stimuli, the response is said to be under the *control* of that stimulus or those stimuli. 15

Discrimination learning. Discrimination learning is demonstrated when, under specific conditions, the individual reliably (consistently) emits a particular behavior often leading to reinforcement and does not emit that behavior under other conditions -- those under which the response does not lead to reinforcement. 15

Discriminative stimuli (S^D s). Stimuli are said to be discriminative when they control behavior differentially, after having been present reliably when a response either has been reinforced, placed on extinction, or punished. Their presence or absence systematically alters the probability of the rate of response. Discriminative stimuli are antecedents that influence given subsequent behavior. They either evoke (trigger or set the occasion for) or abate (inhibit) the occurrence of the behavior. There are several types of discriminative stimuli. These include: 2, 15

S^{Drs} —An antecedent stimulus in the presence of which a given response is likely to be reinforced. It is discriminative for reinforcement due to its having preceded, or accompanied, the behavior-reinforcer combination. An S^{Dr} tends to occasion or evoke a particular response because reinforcement has tended to follow it in the past. 2, 15

S^D s (S-deltas)—An antecedent stimulus in the presence of which a given response is not likely to be reinforced. An S^D abates (inhibits or suppresses) the response, in that the response is not likely to be reinforced in its presence (i.e., extinction is the likely consequence). 2, 15

S^{Dps} — An antecedent stimulus that has been repeatedly paired with punishment. An antecedent stimulus in the presence of which a given response is likely to produce aversive consequences, such as punishment, timeout, or response cost. 2, 15

- Discriminative stimulus, natural.** See Natural discriminative stimulus. 15
- DISTAR™.** See Direct Instruction. 18
- DOR method.** See Differential observing responses. 17
- DR.** See Differential reinforcement. 15, 16, 27, 28
- DRA.** See Differential reinforcement of alternative behaviors. 28
- DRD.** See Differential reinforcement of diminishing rates. 28
- DRH.** See Differential reinforcement of high rates. 23
- DRI.** See Differential reinforcement of incompatible behaviors. 28
- DRL.** See Differential reinforcement of low rates. 23
- DRO.** See Differential reinforcement of other behaviors. 28
- DROP.** See Progressive DRO. 28
- DRP.** See Differential reinforcement of paced responding. 23
- DTT.** See discrete trial training. 18
- Duplic.** “When the controlling variable is a verbal stimulus and the response has point-to-point correspondence (the beginning, middle, and end of the stimulus matches the beginning, middle and end of the response) with formal similarity (when the controlling antecedent stimulus and the response share the same mode and physically resemble each other) we may label the response duplic behavior” (Michael 1982, p. 3). The duplicated stimulus can be a spoken word, a sign, a gesture, a matching image, or a written stimulus. Also, see echoics and imitation -- types of duplic behavior. 19
- Duration.** The length of time that passes from onset to offset of a behavior or a stimulus. 4, 7
- Duration recording.** Recording the time that elapses from the onset to the offset of a response (e.g., the length of time a person spends talking on the phone). 7
- Echoics.** A type of duplic behavior in which another person’s verbal behavior is repeated, as in parroting what another has said. 19
- Ecobehavioral assessment.** Examining behavior in relation to its context—ongoing and previous contingencies. Ecobehavioral assessment considers how a behavior change may affect and be affected by contextual conditions including changes in the social and physical environment. 10
- Edible reinforcer.** Consumable items - like milk and snacks that serve a reinforcing function. 6
- Educational significance.** The extent to which the change has contributed toward the educational progress of the student. 25
- Elicit.** In respondent or classical conditioning of reflexes, a verb used to denote the effect of an antecedent conditioned or unconditioned stimulus on a conditioned or unconditioned response. In describing the salivary reflex of a dog, we would say that the unconditioned stimulus, meat, *elicits* salivation. Following conditioning, another stimulus, such as a tone, also might elicit salivation. See also Respondent behavior. 2, 15
- Emit.** A verb that describes the occurrence of an operant behavior. In this text, familiar verbs, such as express, perform, respond, and behave are used as equivalents. See also Operant behavior. 5
- Empirical.** Derived from or guided by experience or experiment. 1
- Empirical task analysis.** See Task analysis. 14
- Environment.** The context in which the behavior occurs. 2
- Episodic severity (ES).** A measure of the intensity or gravity of a response. 7
- Equal interval graphs.** Line graphs, bar graphs, and cumulative graphs generally are labeled equal interval graphs because the units on the y- and x-axis are spaced equally, as opposed to those in standard celeration charting, which uses logarithmic units. 8
- Equivalence class.** Complex behavior that consists of three defining relations of reflexivity, symmetry, and transitivity. Reflexivity refers to identity matching (e.g., Daddy is a specific man, 9 is always nine regardless of size, color, etc.); *symmetry* refers to functional reversibility (e.g., given a picture of a dog, select the word dog, and given the word dog, the picture of the dog is selected); and, *transitivity*, which refers an action with a direct object that can be recombined into classes having the same function. If $A=B$ and $B=C$, then $A=C$ (or visa versa). 16
- Errorless learning.** Instructional methods specifically designed to prevent or substantially minimize any learner errors are used to teach particular discriminations. Most-to-least prompting and fading methods are especially suitable for teaching new skills errorlessly. For example, sequences of artificial discriminative stimuli are arranged carefully and faded slowly and systematically so that control eventually shifts to the natural stimuli identified ultimately to evoke the response. Also, using *within stimulus prompts*, *stimulus equalization* and *response delay can facilitate errorless learning*. 20
- Escape behavior.** Behavior that reduces or removes aversive stimulation, thereby producing negative reinforcement. See also Negative reinforcement. 5, 29, 30
- Escape extinction.** Escape responses no longer provide reinforcement as a result of escape attempts being blocked. 28
- Establishing operation.** See motivating operations. 2, 15
- Establishing stimulus (S^E).** A stimulus that, having been paired with an establishing operation, and having evoked a given response, now becomes a conditioned stimulus for that operation. It cues or prompts the occurrence of the establishing operation. In this text, this term is replaced by the term *motivating stimulus (S^M)*. 15
- Ethics.** Operating according to ethical precepts: providing for voluntariness and/or informed consent by clients or advocates; arranging the least intrusive or restrictive and most benign yet effective procedures; being accountable; obtaining, maintaining, and continuing development of competence, and others. 31
- Event measure.** The number of times the response occurs. Also called frequency. 7
- Event recording.** An observational recording procedure in which the number of occurrences of a given discrete behavior—number of times correct answers are given, blows delivered, and so on—are counted over a specified period of time—within an inter-

val, session, class period, day, week, month, or observation period. Also known as Frequency recording. 7

Evidence-based practices. Practices, programs, or procedures scientifically demonstrated to be effective with like populations. 9

Evoke. To increase the likelihood of the emission of a response by arranging prior stimulus conditions. Also used as an action verb in reference to operant behavior, wherein the response bears a probabilistic relationship (not a one-to-one relationship, as with *elicit*) to the occurrence of the S^D. The terms *set the occasion for*, *occasion*, *promote*, *cue*, and *signal* often are used as synonyms. 2, 15

Exchangeable reinforcers. See Token Reinforcers. 12

Exclusionary timeout. This version of timeout involves relocating the individual from a reinforcing to a non-reinforcing environment or separating the reinforcing environment from the individual. With exclusion timeout, the person is not physically prevented from leaving the timeout area. It is not locked, nor is the individual blocked from leaving. However, it does deny the individual the opportunity to observe and/or hear what is occurring in the original setting. *Facial screening* is a variant of exclusionary timeout. It involves the contingent application of a face cover (e.g., a terry-cloth bib, a blindfold or the contingency manager's hands). The visual input is contingently blocked for about 5 to 15 seconds following each occurrence of the unwanted behavior. The use of facial screening, though mild, is not legal in some settings, such as in the California schools. 29

Exemplars. Examples containing the critical stimulus or response features. For example, the critical features of a bus are that it transports more than six people on the ground, has wheels and an engine. Exemplars would include public busses, school busses and airport busses. Non-exemplars would be pedal boats, airplanes and horse drawn single-seated wagons.

Experimental analysis of behavior. A scientific method designed to discover the functional relation between behavior and the variables that control it.

Also called functional analysis assessment. 2, 7, 9, 10, 25

Experimental design. An aspect of an experiment directed toward unambiguously establishing experimental control; in behavior analysis, to demonstrate a functional relation between response patterns and interventions. Experimental designs control for extraneous influences such as placebo and Hawthorne effects, passage of time, and other subject, task and environmental potentially confounding variables. See also Withdrawal design, Multiple baseline design, Alternating-treatment design, and other specific design strategies. 9, 25

Experimental relation. See Functional relation. 9, 10

Experimental significance. Experimental significance is determined by asking what the behavioral pattern of concern would be if the experimental intervention had not occurred and comparing it with that achieved via the behavioral intervention. Simply stated, "Did the treatment result in a meaningful change in the behavior?" 25

Experimental variable. See Independent variable. 25

External validity. The correctness or validity of conclusions about the generalizability of a functional or causal relationship, to and across other people, settings, or times. 25

Extinction. The phenomenon of extinction (or "extinction *process*") is the diminished rate (or eventual total absence) of a behavior, resulting from the discontinuation of reinforcement contingent on a particular target behavior. An extinction *procedure* is one in which the reinforcement of a previously reinforced behavior is discontinued, usually by withholding all sources of reinforcement contingent on the occurrence of the behavior. 2, 27

Extinction burst. A predictable, temporary increase in the rate, variability, and intensity of an array of (presumably previously reinforced) responses. These often consist of the behavior targeted for reduction, along with aggression, and crying) and occur immediately after the cessation of reinforcement or the introduction of extinction. Also see Extinction-induced aggression. 27

Extinction-induced aggression.

Describes the temporary increase in aggression that often accompanies extinction in its early phases, in the absence of any other identifiable precipitating events. Also see Extinction burst. 27

Extraneous variables. See Confounding variables. 9

Extra-stimulus prompts. These prompts are not naturally inherent in the stimulus, as are *within-stimulus prompts*. They are provided as external supplements to the stimulus. Examples include *imitative prompts*, *gestures*, *response delay*, and *graduated guidance*. 20

Extrinsic aversive stimuli. Aversive stimuli external to the behavior that may be delivered by an outside agent.

Facial screening. See Inclusion timeout. 29

Fading. The systematic, gradual removal of usually artificial or intrusive prompts, or discriminative stimuli, such as physical guidance, imitative prompts, directions, and other cues. Fading is a maximal to minimal prompting procedure used to foster independence from supplemental prompts, and/or to shift control to the stimuli designated to evoke the response. 20

Feedback. Information transmitted back to the responder following a particular performance in a form that may influence behavior: seeing or hearing about specific features of the results. Feedback may function as a reinforcer or punisher; and/or may serve a discriminative function. Feedback can be natural, unintentional, or carefully managed. Its form can vary too, from a subtle facial expression or gesture, to a set of general spoken comments (e.g., "Nice job!" "Good going!" "Ah hah!" "That was awful or awesome!"), to precise quantitative measures (e.g., "Your praise has increased from a baseline of about 3-times an hour to 6-times an hour. That's really great!" "That was the tenth time in a row you came back late from your break!") 24

FERG. See Functional goals. 4

Fidelity of implementation. Also known as *treatment integrity*, *treatment*

- fidelity, or procedural fidelity.** Implementation fidelity refers to the accuracy with which the intervention or treatment is implemented. Fidelity of implementation affects intervention outcomes: Generally, given a well-designed plan of intervention, the higher the treatment integrity, the more effective the intervention. Some researchers use the label “process research,” to describe the integrity with which the procedure is implemented, as opposed to “outcome research,” which seeks to determine client behavior change. 3, 7
- Fixed interval (FI).** *See* Interval schedules of reinforcement. 23
- Fixed ratio (FR).** *See* Ratio schedules of reinforcement. 22
- Fixed time (FT) schedule.** *See* Time schedules of reinforcement. 23, 27
- Fluency.** *See* Response fluency. 17, 21
- Forward chaining.** Effecting the development of a chain of responses by training the first response or link in the chain initially; the second next; and so on; then joining the series of links together, until the entire chain is emitted as a single complex behavior. 14
- Four-term contingency.** A four-term contingency includes the following elements: 1) motivating or establishing operations, 2) antecedent stimuli (discriminative stimuli), 3) responses (behaviors), and 4) consequences. The phrase communicates the interrelationship among those four elements. 16
- Frame.** A finely graded instructional step. Part of a teaching segment in programmed instruction. Confirmation for responding correctly to each step is assumed to furnish reinforcement. *See also* Programmed instruction. 13
- Free operant.** A free operant is a response that is emitted without any constraints or prompts, thereby leaving the individual in a position “freely” to emit the next identical or similar response (Catania, 2007). Within an instructional or training situation, the participant’s free-operant behavior is not dependent on an instruction, prompt, or any supportive discriminative stimulus provided by another individual. Whatever discriminative control is present is natural to the environment. Examples include, running aimlessly and pushing a lever in the absence of any instructions or cues. 18
- Frequency.** The number of times a behavior occurs. Often expressed as rate—that is, in relation to a given period of time. Also called event. 4, 7
- Frequency recording.** *See* Event recording. 7
- Freeze technique.** Instructing individuals to become immobile while maintaining their current behavioral topography. Used to teach people to discriminate positive and negative examples of particular motor forms. (Think, a ballet or gymnastic position).
- Function.** The term functional, or function, implies the lawful manner in which the rate, form or other pattern with which the behavior is repeated relates to the way its consequences have influenced it in the past. When we say that behavior occurs because it is functional, we are saying it occurs because it has a history of producing particular reinforcing events.
- Functional analysis or functional analysis assessment.** *See* Experimental analysis of behavior. 9, 10, 25
- Functional assessment.** *See* Functional behavioral assessment. 10
- Functional behavior.** Behavior that results in functional consequences that gains the individual what s/he is seeking. Also *see* replacement behavior and functional goals. 10
- Functional behavioral assessment.** Also called functional assessment. A method of inquiring about why a person repeats particular behaviors, such as simple behaviors like raising one’s hand to especially puzzling, dangerous or disruptive behaviors. A method of determining the function of a particular behavior. 10
- Functional Communication Training (FCT).** FCT is based on DRA (differential reinforcement of alternative behavior). Once the function of a problem behavior is determined, that function, or reinforcer, is provided for more socially appropriate behavior. 19
- Functional consequences.** Consequences that are effective positive reinforcers or that rid the client of aversive stimuli (i.e., what is not wanted at that moment). 10
- Functional equivalence.** “When changes in the contingencies controlled by one pair of stimuli are sufficient to change the subject’s behavior with respect to other pairs” (Sidman et al, 1989, p. 272). “Physically dissimilar stimuli come to be treated as equivalent to, or substitutable for, one another in certain contexts” (Green, 2001, p. 79). For example, a picture of a dog, the written and/or spoken word dog, and an actual dog are functionally equivalent. Without functional equivalence, we could not read. Also *see* Equivalence class. 16
- Functional goals.** Functional goals are behaviors that produce functional reinforcers. Based on the findings of a functional assessment, they focus on teaching clients how to obtain their reinforcers in socially acceptable ways. For example, if a client yells out for attention, he might be taught to raise his hand or to speak in a quiet voice to obtain attention. Also called Functionally equivalent replacement goals (FERGs). 4
- Functionally equivalent replacement goals (FERGs).** *See* Functional goals. 4
- Functional relation.** A lawful relation between values of two variables. In behavior analysis, a *dependent variable* (treated behavior) and a given *independent variable* (intervention or treatment procedure) are *functionally related* if the behavior changes systematically with changes in the value of the independent variable or treatment. For example, the more intense an aversive stimulus, the stronger the response suppression. Experimental research designs also prevent people from attributing the behavior change to non-related or extraneous causes. 9, 10, 22
- Functional skill.** *See* replacement behavior. A substitute skill that enables the individual to obtain reinforcement. Usually it is age, or at least developmentally appropriate, socially significant, and likely to be reinforced or supported by the natural environment in both the short *and* long run. 4
- Functional utility** refers to the person obtaining what s/he wants (particular reinforcers). A behavior is functional

when it permits individuals to get what they seek. 19

Generalization. See Generalization, response and Generalization, stimulus. 21

Generalization, response. (Also called *response induction*) The spread of effects to other classes of behavior, when one class of behavior is modified by reinforcement, extinction, and so on. The shift in the form or topography of a behavior. For instance, the way a particular letter is shaped or formed may vary in ways that are similar but not identical to the formation of the letter as it was originally reinforced. 21

Generalization, stimulus. The occurrences of the response in the presence of antecedent stimuli sharing certain characteristics with those previously correlated with reinforcement; a broadening of the range of stimuli or S^Ds (objects, sounds, times, places, other people, and so on) that “set the occasion for” or evoke particular behaviors. Generalization occurs when stimulus control is absent, incomplete, or when responding occurs in the presence of stimuli sharing certain characteristics with those previously associated with reinforcement. The child who calls all quadrupeds “doggie” is generalizing (we often refer to this type of behavior as “over-generalizing”), as you are when you say “What’s up?” to both your friend April as well as to Julie whenever you see them. Stimulus generalization, then, is the repetition of the same response at other times, in other places, or in the presence of other people. 2, 21

Generalization training. A method designed to occasion a behavior emitted in one stimulus situation in another (usually novel) stimulus situation; programming for stimulus generalization. For instance, students who have learned a set of skills in one setting (i.e., the resource room) may be taught to apply those skills in other settings (i.e., the classroom). 21

Generalized imitation. As a response class, using the imitation skill not only in response to familiar examples, but with novel examples as well. Duplicating modeled behavior in novel

instances, beyond those explicitly taught. 18

Generalized reinforcer. A conditioned reinforcer effective for a wide range of behaviors as a result of having been paired with a variety of previously established reinforcers (primary and conditioned). Due to this history, the effectiveness of a generalized reinforcer tends not to depend on any one state of deprivation, and is only minimally affected by satiation. Money is a prime example of a generalized reinforcer. It has been associated with and can be exchanged for a variety of other reinforcers. 6, 11

Generative learning. The class of learning of new material resulting from previous learning. Training to fluency helps to promote generative learning as does teaching behavioral cusps. 13

Goal. The intended broad or abstract purpose of an intervention. Also see behavioral goals, functional goals, and alternative goals. 4

Goal levels. A goal level refers to a preset value of performance to be reached at a given time. *See also* Goal-setting. 24

Goal, outcome. A specification of the end product or behavior sought as a result of the treatment program. Examples include decreases in vandalism cost or reductions in the number of absences. 4

Goal, process (or treatment). A target, the accomplishment of which enables the achievement of an outcome goal. For example, increasing a teacher’s rates of giving approval might be a *process goal* enabling the *outcome goal* of improving students’ scholastic achievement. 4, 9

Goal-setting. Specifying a performance quality and/or level to be attained, often by a particular time. A goal might be set to attain a certain number of accomplishments, level of quality, percentage of correct answers, and so forth. A term often used in organizational management. 17

Good behavior game. A group management package in which the group is divided into two or more teams and rules are specified. In its original form, a team was penalized by being assigned a check-mark against it if a member violated one of the rules.

Reinforcers were provided to each team with fewer than the criterion number of marks or for the team with the fewest marks at the end of a preset period. More currently it frequently involves reinforcing consequences as well as punishment, such as periodically providing points exchangeable for reinforcers for a team when its members act according to the rules. 28

Graduated guidance. The combined use of physical guidance and fading, resulting in a systematic gradual reduction of the intensity of physical guidance. To use this procedure, begin while the client is being cooperative, using the minimal amount of physical guidance necessary to evoke the correct response; then gradually fade out the physical guidance. 20

Graduated delayed prompting. See Delayed prompting. 20

Graduated prompting. A stimulus control method, also called *minimum to maximum prompting* or increasing assistance, that begins with the natural S⁺ and progresses from the least-to-most artificial or restrictive prompts until the desired behavior occurs. An example would be shifting from gestural to spoken, to imitative, to physically guided prompts. 20

Graph. A diagram displaying data in the form of one or more points, lines, line segments, curves, or areas, representing the variation of a variable in comparison with that of one or more other variables. (See Line graphs and Bar graphs.) 8

Group contingencies. Arrangements in which consequences are delivered to some or all members of a group as a function of the performance of one, several, or all of its members. *See also* Interdependent, dependent, and independent group contingencies. 12

Guiding. See Physical guidance. 20

Habit reversal. An intervention package for reducing annoying habits, consisting of awareness training, DRI, imagery training, social support and contingency awareness.

Habituation. Refers to reductions in the responding *elicited* by a stimulus over repeated presentations (as when the startle response to a loud noise diminishes with repeated presentations). The

- term habituation is primarily used in respondent or classical conditioning. 11, 16
- High probability requests.** See Behavioral momentum. 26
- Imitation.** Matching the behavior of a model, or engaging in a behavior similar to that observed. A type of duplicit behavior in which the point to point correspondence of the physical action of another, such as producing a communicative sign, is duplicated. 18, 19
- Imitative prompt.** A discriminative stimulus consisting of a behavior that is modeled in order to occasion an imitative response. 18
- Incidental teaching.** Teaching toward specific, predetermined objectives, by capitalizing on natural unplanned opportunities, as in temporarily blocking a child's access to an item until particular adjectives are used to request the object. 19, 21
- Inclusion timeout.** The least intrusive/aversive and the most commonly used form of timeout. The individual may be moved to an area where he or she can hear and see what is happening (or may even stay put), but for a brief period of time (e.g., 3-5 minutes) is not responded to nor allowed to participate. Examples include: a) *withdrawal of materials* (removing reinforcing materials from and ignoring an individual contingent him or her for a brief period of time upon committing the infraction, , b) *planned ignoring* (withholding any attention, physical contact, and/or verbal interactions with the individual for a short duration contingent upon the occurrence of the unwanted behavior—(NOT equivalent to an extinction procedure because it is intentionally temporary and reinforcement is withheld from a number of behaviors, not just the target behavior), c) *contingent observation* (contingent on the occurrence of a rule violation, the client is relocated to an area in which s/he can observe what is going on but not participate in the activities). May also include removing a *ribbon* for X, usually 3, minutes or longer if necessary, contingent on each occurrence of an infraction., (Only students wearing the ribbon-ties receive periodic treats and praise). 29
- Incompatible behavior.** A specific alternative response class (DRA) incapable of being emitted simultaneously with another behavior; behavior that interferes with another specific behavior. 28
- Incomplete stimulus control.** See Stimulus control, weak. 16
- Increasing assistance.** See Graduated prompting. 20
- Independent group contingency** Applying the same consequences to the same or to a different behavior of each member of a group. The reinforcement of one member's behavior does not depend upon the performance of others. For example, "Each assembly line worker who meets the production quota will earn a bonus;" "Each student must have 9 out of 10 math problems correct to earn their two tokens." 12
- Independent variable.** The experimental variable that is managed or manipulated. In behavior analysis, the independent variable often is a behavioral procedure, package, or other intervention or treatment program. 9, 25
- Indirect assessment.** Indirect assessments are used initially to gather background information about the behaviors of interest. Tools include client self-reports, recalled anecdotes supplied by those significant in the person's life (e.g., parents, teachers, spouses, co-workers). Generally, information is obtained about the circumstances under which the behavior is said to or not to occur, with an emphasis on ecological variables. Often interviews, along with instruments such as checklists, rating scales and client records (e.g., previous incident reports, Individual Education Plans – IEPs, psychological evaluations, medical reports and so on) are used to help provide a more detailed picture of the client's behavioral patterns and the stimuli that appear to relate to those. 10
- Induction.** See Generalization, response. 21
- Informed consent.** Clients (or their advocates) and/or parents and caretakers have the right to be informed about problem behaviors, previously attempted interventions, proposed experimental or programmatic outcomes and methods, as well as alternative interventions, including the procedures' advantages and disadvantages, methods of data collection, Assuming consent or rejection is to be considered "informed," they also are to be invited to participate in the selection or rejection of specific goals and procedures. This information must be communicated at a level that will be understood by the clients and/or their advocates. 11, 29
- Instructional demand.** In an experiment, an unintended alteration in behavior occurring as a function of variations in the way instructions are delivered. 7, 18
- Instructional objective.** See Behavioral objective. 4
- Intensity.** The strength or force with which a stimulus is delivered or a behavior expressed. Sounds, lights, and physical blows can vary in intensity. Similar to *magnitude*. 4, 7
- Intensive designs.** See Single-subject experimental designs. 9, 25
- Interdependent group contingencies.** Contingency arrangement in which members of the group are treated as if they were a single behaving individual. The group's performance determines the reinforcer each member receives. For example, "If the group averages 90% on the test, everyone will have free time." 12
- Intermittent reinforcement.** A schedule of reinforcement in which some, but not all, of the occurrences of a response are reinforced. 11, 22, 23
- Internal validity.** A feature that describes how correct or valid conclusions are about the functionality of the relationship between two variables, such as an intervention procedure and changes in behavior. Internal validity, then, addresses the validity of the answer to the question, "Did the treatment, and not some other factor, bring about the behavior change?" 25
- Interobserver agreement assessment (IOA).** Also, called assessment of interobserver reliability. A method for estimating the reliability of a behavioral observation system. A coefficient of agreement is calculated by comparing scores obtained by two or more independent observers and determining the number of times they agreed and/or disagreed in proportion

to the number of observations scored. Depending on the observational method used, there are several methods of calculating IOA. To calculate IOA for: 1) **permanent product recording**, use the formula: the number of agreements divided by the number of agreements plus disagreements, then multiply the fraction by one hundred. 2) **event or frequency recording**: the smaller total number of agreements is divided by the larger total of agreements plus disagreements. A more accurate method is the *block by block method*: the observation session is broken further into intervals, and events or frequencies are recorded per interval. Scores are compared on an interval by interval basis to obtain an IOA score. Intervals in which both observers agree exactly receive a score of 1; those for which they do not agree are assigned a zero and a coefficient of agreement is calculated by dividing the smaller total by the larger. Next, those separate coefficients are summed and divided by the total number of intervals. 3) For **duration and IRT recording**, the formula: shorter duration/ longer duration X 100 is used. 4) For **time sampling observational recordings**, formula: # of intervals agreed/ # of intervals agreed + # of interval disagreed X 100 is used. If the behavior occurs at low rates, the more conservative calculation is based on scored intervals while for behavior that occurs at high rates, unscored intervals are more conservative. *See also* Reliability. 7

Interreinforcement interval. The time scheduled between reinforcements. 23

Interresponse time (IRT). IRT is measured by recording the duration of elapsed time from the offset of one response to the onset of the next response. 7

Interval spoilage. *See* Partial interval time sampling. 7

Interval schedules of reinforcement. A schedule according to which reinforcers are presented contingent on the first response emitted after the termination of a given interval of time: (a) *Fixed interval (FI)* schedule—following a constant time period; (b) *Variable interval (VI)* schedule—similar, but reinforcement is delivered following

the completion of intervals averaging that time period. 23

Interval time-sampling. *See* Time sampling. 7

Intervention. *See* Treatment. 9

Intraverbals. Verbal stimuli controlled by verbal stimuli without point-to-point correspondence or formal similarity and are reinforced by nonspecific reinforcers (Skinner, 1957). Intraverbal behavior can assume many forms, such as social interchanges (e.g., “You’re welcome,” when someone says “Thank you”), word associations (e.g., “black” when someone says “white”), and translations from one language to another. 19

Intrinsic aversive stimuli. Aversive properties integral or natural to particular acts, such as fatigue or muscle strain inherent to excessive exercise, or to remaining totally inactive, or repeating the same movement excessively. 30

Intrinsic motivation. An inferred state based on observing an individual expressing a particular behavior at high rates in the absence of any identifiable external reinforcing consequences. Emitting the behavior itself is assumed, in and of itself, to be reinforcing; behavior that actually may be under the control of a very thin schedule of subtle reinforcers. 11

IOA. *See* Interobserver agreement assessment. 7

Ipsative data. Data based on the behavior of an individual; used as the basis for demonstrating functional relations. Because ipsative data are derived from the behavior of a particular individual rather than from group norms, they can be used to investigate what conditions lawfully affect the behavior of the individual, rather than that of a group in general. 9

IRT. *See* Interresponse time. 7

Isolation. *See* Timeout. 29

Job analysis. *See* Task analysis. 14

Labeled praise. *See* Specific praise. 11

Latency. The elapsed time from the presentation of an antecedent stimulus (cue, prompt, signal) and the response. 4, 7

Learned reinforcer. *See* Conditioned reinforcer. 6

Learning. Any enduring change in behavior produced as a function of the interaction between the behavior and the environment. Or, learning = change in behavior. Often used to describe motor or cognitive skills, but term also may refer to social, affective, personal, and other classes of operant behavior. 2

Learning history. The sum of an individual’s behaviors that have been conditioned or modified as a function of his or her interaction with environmental events. *See* Behavioral repertoire. 5

Level. *See* Change in level. 8, 9

Limited hold. A restriction placed on an interval schedule requiring that to be eligible for reinforcement, the *primed response* (the first response following termination of the required interval) must occur within a specific span of time following that interval. 23

Line graphs. A graphic display of data scaled along some dimension, such as time or the order of responses in a sequence. Lines connect data points within a phase. In ABA, line graphs generally are used to display relations among sets of variables across units of time. *See* Chapter 8 for illustrations. 8

Link. An intact response, or performance, that combined with others form a behavioral chain; small teachable units that may configure a series of sequentially ordered links within more complex behavioral chains. 14

Magnitude. Greatness of size, volume, or extent (i.e., of a response or a stimulus). 7 **Maintenance procedures.** Strategies used to promote the persistence of behaviors under natural environmental conditions, such as alterations in reinforcing contingencies, fading prompts, and teaching self-management. 20, 22, 23, 24

Mands. A verbal response consisting of a “request” for some object or action (i.e., a specific reinforcer). The “requesting” (or demanding) is controlled by a specific relation between the motivating antecedent and the reinforcer. People use mands to request a reinforcing object or event. Being able to mand heightens individuals’ likelihood of getting what they want when they want it. 19

Masochism. The appearance of seeking out or inflicting “punishment” upon one’s self. 30

Matching law. A description of a phenomenon according to which organisms match or distribute their responses according to the proportion of payoff during choice situations (i.e., if a behavior is reinforced about 60% of the time in one situation and 40% in another, that behavior tends to occur about 60% of the time in the first situation, and 40% in the second). Sometimes called matching theory. 23

Matching theory. See Matching law. 23

Matching-to-sample. A form of *conditional discrimination*. Matching-to-sample entails an individual selecting from two or more alternatives (e.g., objects, figures, letters, or sounds) the stimulus that matches or corresponds to a standard or sample. Matching-to-sample can occur simultaneously or following a delay. Also see “Matching-to-sample, simultaneous” and “Matching-to-sample, delayed.” 16

Matching-to-sample, delayed. A type of matching-to-sample in which the sample picture or item is removed prior to the presentation of choices. 16

Matching-to-sample, simultaneous. A type of matching-to-sample in which the sample item, often an image or printed word though sometimes a three dimensional object, may be presented while the choices remain exposed. Both the sample and choices are present at the same time. 16

Maximum-to-minimum prompting. Begins with a prompt known reliably to evoke the behavior and gradually shifts to less intrusive, more natural prompts. (Most to least.) A prompting method that is used to promote *errorless learning*. 17

Measurement complexity. Refers to the complexity or the number of behaviors observed. Observers are more likely accurately to assess three or four behaviors than eight or nine. 7

Minimum-to-maximum prompting. Also called *graduated prompting*. or increasing assistance. Prompting begins with minimal cues, that gradually increase in level of assistance, only as necessary, until the behavior occurs (e.g., prompts may

include requests, modeling, physical guidance, gestures and so on). (Least to most prompting.) 17

Mission. An organization’s fundamental purpose for existing. 4

MO. See Motivating operation. 2, 10, 15, 27

Model. A person whose behavior is (or is to be) imitated. 18

Model, coping. A model known previously to have experienced difficulty with the behavior to be imitated, but who now is capable of demonstrating that skill.

Modeling procedure. A stimulus control procedure that uses demonstrations to prompt an imitative response; colloquially, a *show or demonstration procedure*. 18, 26

Modeling, video. Video demonstrations of a behavior, generally used for the purpose of cueing an imitative response. 18

Momentary DRO. A variation of the DRO procedure. Reinforcers are delivered at particular preset moments, contingent of the absence of (a) particular behavior(s) at the time. 28

Momentary time-sampling. A time-sampling procedure in which a response is recorded only if it is occurring at the specific point in time when the interval terminates. E.g., a timer goes off at the end of a 10-minute interval, and the observer checks to see whether the youngster has his thumb in his mouth *at that moment*. 7

Moment of transfer. In *delayed prompting* the point at which the person begins to “anticipate,” or respond in advance of the presentation of the prompt. 20

Motivating event. See Motivating operations. 2, 15

Motivating operations (MOs). MOs (sometimes called establishing operations – EOs, or setting events – SEs) are antecedent events that (a) change the value of the consequence, or, (b) along with the immediate discriminative stimulus (S^D), may alter the behavior. The value altering effect consists of either (a) an increase in the reinforcing or punitive effectiveness of some stimulus, or (b) a decrease in reinforcing or punitive effectiveness.

With respect to the behavior altering effect, it either (a) increases the current frequency of the behavior that has been reinforced by some stimulus--an evocative effect or (b) decreases the current frequency of behavior, an abative effect. Or, said more parsimoniously, an event that alters the reinforcing or punishing value of a stimulus, and increases or decreases the rates of behaviors that produce that consequence. MOs occasion (evoke) and abate responding by changing the discriminative strength of the antecedent and the reinforcing value of the consequence. MOs usually are present prior to and/or concurrent with the presentation of the S^D . Examples: Having just eaten a large meal will diminish the effectiveness of edible reinforcers, while food deprivation will increase the effectiveness of edible reinforcers. A history of recent punishment when attempting a task is more likely to evoke aggression the next time the task is presented. 2, 10, 15

Motivating operation, conditioned (CMO): A learned relation between the nature and value of an antecedent stimulus and the nature of a response. 15

Motivating operation, conditioned-transitive: “An environmental variable that establishes (or abolishes) the reinforcing effectiveness of another stimulus and evokes (or abates) the behavior that has been reinforced by that other stimulus” (Michael, 2007, p. 391). E.g., food deprivation establishes food and the stimuli associated with food, such as eating utensils, as reinforcers. Also see Motivating stimulus.

Motivating operation, reflexive: A conditioned reflexive MO that acquires its MO effectiveness by preceding particular improving or worsening situations (Michael, 2007). E.g., repeated failure has been shown to lead to an escape reaction (e.g., aggression, self-injury, leaving the situation, etc.) A history of failure, then, becomes a reflexive MO. Alternatively, gradually approaching one’s goal may function as an MO to encourage continued performance. 15

Motivating operation, surrogate: A surrogate MO “is a stimulus that acquires its MO effectiveness by being paired with another MO, and has the same

value-altering and behavior-altering effects as the MO with which it was paired” (Michael, 2007, p. 390). 15

Motivating operation, unconditioned (UMO): The antecedent value-altering effect of a unconditioned motivating operation that does not depend on one’s learning history. 15

Motivating stimulus (S^M). Also called conditioned-transitive motivating operation. A stimulus that must be present to allow the individual to engage in the behavior. A stimulus (e.g., car keys) that the individual has learned (conditioned) must be present to allow him or her to engage in the behavior (driving the car). Its absence evokes seeking it out. A stimulus upon which reinforcement of an S^D-R relation depends. Also see Establishing stimulus. 15

Movement suppression timeout. Preventing movement during timeout by means of physical restraint and/or verbal instructions. Often used in combination with other reductive procedures to manage violent and/or self-destructive behavior. 29

Multielement design. See Alternating treatment design. In the multi-element design distinctive discriminative stimuli are paired with each treatment condition. 25

Multiple-baseline designs. A single-subject or intensive experimental design that attempts to replicate the effects of a procedure (treatment or intervention) across (1) different subjects, (2) different settings, or (3) different classes of behavior. Intervention introduced independently to each subject (or setting or class of behavior) in succession across baselines of differing lengths to control for such time-dependent extraneous variables as history, maturation, reaction to being measured for longer or shorter periods, seasonal influences, and so on. See *also* Across-behaviors multiple-baseline; Across-subjects multiple-baseline; Across-situations multiple-baseline; Within-subject experimental design. 9

Multiple probes. Measuring untreated responses intermittently to assess any variations in those responses due to generalization or unidentified conditions; also used to enable learners (or others) to ascertain whether the

untreated skills actually were being acquired or just varying randomly. See also Probe. 9, 25

Multiple-schedule design. See Alternating treatment design. 25

Multiple-treatment interference. A condition in which the participant’s treatment *history* (inside or outside the experiment) influences performance under a subsequent treatment. Observed changes in the dependent variable (the behavior receiving treatment) then would be confounded by the prior treatment, rather than being a function of the designated independent variable. 25

Narrative recording. A written description of behavior in progress. The recorded events then can be ordered into a *sequence analysis* that specifies a behavior, its antecedents, and its consequences. 10

Natural discriminative stimulus. A discriminative stimulus indigenous to the natural environment; not one artificially introduced. The printed word is a natural S^D for reading the word; a hint is not. The hour that marks the beginning of the work day is a natural S^D for starting to work. 15

Natural reinforcer. A reinforcer indigenous to the natural environment. A good mark is usually a natural reinforcer in a school setting as is pay for a worker. 5, 6

Needs assessment. A systematic method for identifying goals to target for programmatic change. Needs assessment may include observations, tests, interviews, questionnaires, and other sources of input.

Negative behavioral contrast. See Behavioral contrast. 23, 27

Negative discriminative stimuli. See Discriminative stimuli, S^{Dp}. 2

Negative practice. A punishment procedure that requires the client repeatedly to practice the target behavior for a predetermined time period, contingent on the occurrence of the unwanted behavior. Negative practice often transforms the response (conditioned) into an aversive stimulus to be avoided. 30

Negative punishment. The removal or reduction of positive reinforcers as a consequence of a response, result-

ing in the reduction in the rate of that response. (The descriptor “negative” merely means the removal or subtraction of a stimulus and is not intended to imply that the procedure is harmful or destructive.) Two major types of negative punishment include Timeout and Response cost. 2, 29

Negative reinforcement. A behavior has been negatively reinforced if it increases or is maintained as a function of the contingent removal or reduction of a stimulus. In the negative reinforcement *procedure*, the change agent intentionally removes, reduces, subtracts, or postpones an aversive stimulus (negative reinforcer) as a consequence of a response, for the purpose of strengthening that response. Sometimes referred to as escape conditioning. 2, 5

Negative reinforcer. An aversive stimulus; a stimulus that, when removed, reduced, or postponed as a consequence of a response, results in an *increase in or maintenance of* that response. See *also* Aversive stimulus. 5

Neutral stimulus. An object or event that is neutral with respect to some property that it later may acquire. A neutral stimulus does not affect behavior reliably in a particular context until it has been paired sufficiently often with some event that does have controlling properties (i.e., it has not yet evolved into an S^D, reinforcer, and so on). 2

Noncontingent reinforcement (NCR). In NCR the reinforcer is presented on a fixed-time (FT) or variable-time (VT) schedule of reinforcement, regardless of the client’s actions at the time. NCR enriches environments by making reinforcing stimuli freely available.. Often used as an antecedent to prevent unwanted behavior. 27

Normative data. Data based on group behavior, such as group averages. One may compare the data recorded on an individual’s behavior to those from a norm group, to a sample group, or the data based on one group’s average performance to another’s. See how this differs from *Ipsative data*.

Objective measurement. Publicly verifiable measures free of feelings, interpretations, or inferences. The

- operationalized behavior is clearly observable and measurable. 7
- Observational recording.** See Direct observational recording. 7
- Observer awareness of being assessed.** When observers are aware that their own scoring is being monitored. This often results in more accurate observers data. 7
- Observer bias.** A situation in which the data recordings may have been influenced by the observer(s)' expectation of change in a particular direction. 7
- Observer drift.** A phenomenon in which observational data move away from the true (valid) measures. In many cases indexes of agreement between observers begin to diverge from or coalesce toward one another over time, irrespective of the "true" value of the measure. 7
- Occasion** (verb). To increase the likelihood of the emission of a response by arranging prior stimulus conditions; used as an action verb in relation to operant behavior, wherein the response bears a probabilistic relationship (not a one-to-one relationship, as with *elicit*) to the occurrence of the S^D. The terms *set the occasion for*, *evoked*, *promote*, *cue*, and *signal* may serve as synonyms. 2, 15
- Omission training.** See Differential reinforcement of other behaviors (DRO). 28
- Operant behavior.** That class of behavior primarily controlled by its consequences, and often, following a given learning history by particular antecedent stimuli. 2
- Operant class.** See Response class. 2
- Operant learning.** The basic process by which "voluntary" learning occurs. Operant learning can be encouraged through the use of various teaching strategies, including reinforcement, differential reinforcement, stimulus change, or shaping or discouraged via extinction, differential reinforcement and various other reductive methods. (Sometimes called operant conditioning.) 2
- Operant level.** The strength (e.g., rate or duration) of behavior prior to any known or designed conditioning. (*Baseline*, which subsumes operant level, refers to the strength of behavior prior to the introduction of an experimental variable but does not preclude earlier conditioning.) 8
- Operation.** An act or behavior that affects the environment. 4
- Operationally defined.** Terms (often colloquial psychological) that are broken down into observable and measurable components. 4
- Operational definition or statement.** The product of breaking down a broad concept, such as "aggressiveness," into its *observable* and reliably *measurable* component behaviors (frequency of hitting or biting others, duration of scream, and so on). Sometimes referred to as a *pinpointed* or *targeted behavior*. 4, 8
- Ordinate.** The y value, on the y-axis of a graph, usually expressed in numerals such as frequency, number or percentage. 8
- Outcome goal.** See Goal, outcome. 4
- Outcome recording.** See Permanent product recording. 7
- Outcome variables.** Those "bottom line" measurable factors that characterize the outcome goal, such as annual profit, and improved academic and social performance. 25
- Overcorrection.** A reductive procedure composed of a relevant and educative form of contingent exertion. Overcorrection consists of one or both of two basic components: (1) *Restitutive training* (or restitutive overcorrection), which requires the individual to restore the environment to a state substantially improved from that which existed prior to the act; and (2) *positive-practice* (or positive-practice overcorrection), which requires the individual repeatedly to practice a positive alternative behavior. When no environmental disruption occurs, only the positive-practice procedure is used. *Simple correction*, just requiring the learner to restore the environment to its previous state, is often sufficient to treat unintentional, infrequent, mildly undesirable behaviors. 30
- Overdependence.** Sometimes called *prompt dependence*, describes a condition in which a response becomes dependent on artificial or irrelevant prompts. Overdependence can be minimized by avoiding unnecessary prompts (over-prompting), as in using least-to-most prompting. Also see Stimulus overselectivity. 17
- Overgeneralization.** Emitting a response appropriate to some contexts in an inappropriate context. For example, calling all men "dada." An inappropriate generalization. 21
- Overselectivity.** Stimulus overselectivity refers to behavior under the control of a single feature of complex stimulus, as in only calling apples "red" if they are red. Or calling tomatoes "apples" because they are red. 17
- Pacing schedules.** These schedules are defined as those in which the upper and lower limits on reinforceable response rates are set. 23
- Package.** See Behavioral package. 24
- Parameter.** Any of a set of physical properties whose values determine the characteristics of a behavior, such as schedule and quantity or quality of reinforcers. Differences in parametric values may influence how rapidly, effectively, safely, constructively, durably, and so on, a given behavior changes. 5
- Parametric analyses.** When one parameter is held constant while other variables, within a family of functions change to help determine their relative effects. 25
- Parsimony.** The simplest theory that fits the facts of a problem is the one that should be selected. 1
- Partial-interval time-sampling.** A time-sampling procedure whereby a response is recorded if it occurs at any time(s)—even momentarily—during the interval, and not necessarily throughout the interval, as in *whole-interval* time-sampling; sometimes called *interval spoilage*, because any instance of the behavior (especially an unwanted behavior) "spoils" the interval. 7
- PBST.** See positive behavior support team. 3
- PECS.** See Picture exchange communication system. 19
- Peer influence strategies.** Arrangements of group contingencies that promote peer influence (e.g., peer tutoring and peer reinforcement). Illustrative are cooperative learning structures that

rely on *dependent* and *interdependent* group contingencies in which group members share reinforcers. 12

Peer-mediated strategy. Involving trained, supervised, and monitored peers as direct service providers (e.g., contingency managers, co-therapists, or tutors). 12

Peer review. A panel of unbiased professional colleagues who review issues and methods related to programs under review, and recommend any changes to enhance the quality of care and treatment of clients. 31

Percentage of opportunities. Frequency/opportunities x 100. 7

Performance feedback. See Feedback. 24

Permanent products. A tangible outcome produced by the behavior that exists for a period of time so observers need not be present at the exact moment the behavior occurs. 7

Permanent product recording. A behavioral recording method in which durable products of a behavior—such as the number of windows broken, widgets produced, homework problems handed in, rejects, percentage of test questions correct, and so on—are assessed. Sometimes called outcome recording or behavioral product recording. Not suited to measuring *transitory behaviors*. 7

Personalized system of instruction (PSI). *PSI* resembles programmed instruction, in that goals are clearly defined, step sizes relatively small, study questions prompt correct responses, and feedback and reinforcement delivered consistently and with minimal delay. *PSI* is characterized by self-pacing, use of proctors, unit mastery, emphasis on the written word, and occasional motivational lectures and demonstrations; also known as the “Keller Plan,” after Fred Keller, its originator. 15

Phase change lines. Vertical lines on a graph indicating a change in the “treatment” or independent variable. E.g., the vertical line between the last baseline session and the first treatment session. 8

Phase label. The phase label describes, or names, the condition(s) in place (e.g., baseline, treatment, follow-up, etc.). 8

Physical guidance. A form of response priming, or prompting, in which the coach or trainer physically guides the participant to perform the proper motion. E.g., a swimming coach guiding the movement of a youth’s arm to demonstrate the proper stroke. 18

Picture Exchange Communication System (PECS). An augmentative verbal communication system that uses images rather than spoken or written words as the communicative medium. 3, 19

Pivotal behavior. Behaviors, that as learned, produce change in other adaptive untrained behavior. Similar to Behavioral cusp. 4

PLA-Check (Planned activity check). An observational recording system in which, according to a preset schedule, the observer counts the number of individuals engaged in the assigned task at that moment and compares that to the total number present. (The total engaged is divided by the total number of individuals assigned to the activity.) See also Momentary time sampling. 7

Planned ignoring. See Inclusion timeout. 29

Positive behavior support team (PBST). The PBST includes representative stakeholders and focuses most heavily on primary prevention programs; responsible for examining contextual factors, or motivational operations (e.g., histories of student failure, an over-reliance on punitive methods of control and an under-reliance of positive reinforcement by personnel) and designing programs with the aim of preventing problem behaviors in the first place. 3

Positive behavioral interventions. Designed to reduce aberrant behavior by reinforcing alternative, rather than punishing unwanted behaviors. (Carr & Sidener, 2002). 26

Positive behavioral contrast. See Behavioral contrast. 23

Positive practice (overcorrection). See Overcorrection. 30

Positive punishment. An event in which a stimulus (typically unpleasant) occurs contingent on a response, resulting in a decrease in the future probability of that response. 2, 30

Positive punishment procedure.

Intentionally *reducing* the rate of a response by presenting an aversive stimulus contingent on the (unwanted) response. Punishment can be said to have occurred only if the individual’s rate of emitting the treated behavior has been demonstrably reduced. Like reinforcement, a punishment procedure is defined solely by its effect on behavior. 30

Positive reinforcement process: Inferred when the rate of a response maintains or increases as a function of contingent consequences (positive reinforcers). 2, 5

Positive reinforcement procedure. The planned application of a positively reinforcing stimulus for the purpose of increasing or maintaining the rate of a response. A carefully planned reinforcement program designed with maximal effectiveness, whereby the rate of a response maintains or increases as a function of the contingent presentation of a stimulus (a positive reinforcer) following the response. 5

Positive reinforcer. A stimulus, such as an object or event, that follows or is presented as a consequence of a response and results in the rate of that response increasing or maintaining. Food, praise, attention, recognition of achievement and effort, special events, and activities often serve as positive reinforcers. Nontechnical terms for positive reinforcers include *incentives*, *rewards*, and *strokes*. 5

Positive scanning. Focusing one’s attention on desirable rather than unwanted behavior, often abetted by recording it. Positive scanners tend to “notice” and hence reinforce positive behaviors more and negative behaviors less often. 28

Positive discriminative stimuli. See Discriminative stimuli, S^{Dr}.

Praise. See Positive reinforcer; Specific praise. 5

Precision Teaching. A formal, individualized instructional method that emphasizes rate building (fluency), charting of performance (celeration charting), designing and implementing teaching, and that reinforces the emission of each specific behavior under all the

conditions in which it is expected to occur. 8, 17

Premack principle. Statement that contingent access to higher-probability behavior (“preferred activities”) reinforces lower-probability behavior. See also Response deprivation hypothesis. 6

Primacy effect. The tendency to return to previously highly successful though perhaps currently ineffective behavioral patterns. 27

Primed response. The first response following termination of the required interval (in interval schedules of reinforcement). Also see Limited hold.

Principles of behavior. See Behavioral principles. 2

Primary aversive stimulus (S^p). A stimulus (object, or event) that functions aversively in the absence of any prior learning history (a painful electric shock, a bee sting, or a sudden loud noise) resulting in a decrease in the rate of the behavior it follows. Its cessation (e.g., of physical discomfort, hunger pangs, and unpleasant noises) is reinforcing, regardless of prior learning or conditioning (i.e., negative reinforcement). (Sometimes called unconditioned aversive stimulus.) 6, 30

Primary prevention. Addressing factors contributing to problem behavior among all clients in the setting, (e.g., punitive environments), to prevent the occurrence of problem behaviors. 3

Primary positive reinforcer (S^R). A stimulus, such as food, water, or sexual activity, that usually is reinforcing in the absence of any prior learning history; often used interchangeably with primary reinforcer. Primary reinforcers function as reinforcers the very first time they occur under given circumstances (e.g., deprivation, discomfort), leading to an increase or maintenance of the rate of the response. (Sometimes called unconditioned reinforcer.) 6

Probe. A brief *withdrawal* phase in a behavior analytic investigation, designed to examine the behavioral effect of a given intervention. 9

Procedural fidelity. See “fidelity of implementation.” 3

Procedural package. See Treatment. 9

Procedure. See “behavioral procedures.” 2

Process goal. See Goal, process. 4, 9

Program integrity. See Fidelity of implementation. 3, 7

Programmed instruction. An educational application based on shaping, characterized by contingencies managed in such a way that the student progresses successfully in steps from one level of difficulty to the next. Confirmation of correct responses is assumed to provide a reinforcing function. 13

Progressive delay prompting. Gradually extending the length of time between the presentation of a discriminative stimulus and the intended response; designed to serve as a device for promoting eventual prompt independence. See Delayed prompting. 20

See Ratio schedules of reinforcement

Progressive DRO (DROP). Presenting reinforcers, perhaps in increasing quantity, to some pre-set maximum, in tandem with expanding the length of time during which the unwanted behavior is absent. 28

Progressive ratio (PR) schedule. “A schedule in which requirements change progressively with each reinforcer” (Catania, 2007). 22

Prompt. A functional but irrelevant discriminative stimulus, such as a “hint” or “reminder,” designed to set the occasion for a desired response. Prompts usually are faded before the terminal goal is judged to have been achieved. (For example, the “f” sound serves as a prompt in “2 + 2 are f_____” The “f” sound must be faded completely to conclude that the student has achieved the goal of knowing how to add 2 + 2.) 17

Prompting. Prompting denotes applying a functional but irrelevant or contrived discriminative stimulus that sets the occasion for the desired response. 17

Prompt dependence. See Overdependence. 17

Prompting, delayed. See Delayed prompting. 20

Proprioceptive cues. The stimuli or sensations that arise from within one’s own body. 18

PSI. See Personalized system of instruction (PSI). 15

Punisher. A stimulus that, when presented immediately following a response, effects a *reduction* in the rate of the response. This text uses the term *aversive stimulus* interchangeably with *punisher* or *punishing stimulus*. 5, 29, 30

Punishment. An event occurring contingent on a response that decreases the future probability of the response. Like reinforcement, punishment can be broken into two separate categories: See positive punishment and negative punishment. 2, 29, 30

Qualitative praise. See Specific praise. 11

Rate. The average frequency of behavior emitted during a standard unit of time. Formula: Number of responses divided by the number of time units. For example, if 20 responses occur in 5 minutes, the rate is 4 responses per minute. 4, 7

Rate of criterion level. Before shifting over to a maintenance mode by thinning out reinforcer delivery, we must ask ourselves “How consistently, often and/or over what period of time the criterion level should be sustained before we will conclude that the behavior is sufficiently established in the person’s repertoire?” In other words this measure of rate can provide a guide as to when to begin maintenance. 4

Rational task analysis. See Task analysis. 14

Ratio schedules of reinforcement. A schedule in which reinforcement is delivered contingent on the last of a *number* of responses: (a) *Fixed ratio (FR) schedule*—A reinforcement schedule in which a constant number of responses must occur prior to the reinforced response. (b) *Variable ratio (VR) schedule*—A schedule in which a variable number of responses must occur prior to the reinforced response. The number of responses usually varies around a specified average. (c) *Progressive ratio (PR) or adjusting schedule*—a schedule in which the response requirement gradually

- increases within a session as a function of performance and time until responding no longer occurs for some time period (the “break point”). A schedule that increases or decreases gradually according to the client’s performance. 22
- Ratio strain.** A disruption in performance when ratio requirements are very high or are raised abruptly. An individual is said to be suffering from “ratio strain” when previously high rates of responding disintegrate. 22
- Reactivity.** An artificial effect produced by the process of conducting the assessment or as a result of experimental activities other than the selected independent (treatment) variable. It is the influence of the assessment procedures themselves (not any treatment or intervention) on the client’s behavior pattern, compromising, thereby, the validity of the data. 7
- Recalibrate.** Retraining observers to achieve interobserver agreement scores at acceptable levels of accuracy. 7
- Recording products of behavior.** See Permanent product recording. 7
- Recovery.** The reemergence of the baseline rate of a recently punished or extinguished response.
- Redirection.** Interrupting a person’s inappropriate behavior and reinforcing a more acceptable alternative behavior. 26
- Reductive procedure.** A procedure, such as *DRA*, *DRL*, *punishment*, *response cost*, and *timeout*, used to reduce the rate of a behavior. 26-30
- Reflexive motivating operation:** See Motivating operation, reflexive. 15
- Reinforced positive practice.** A positive practice procedure in which the positive practice activity is reinforced. See also Overcorrection. 30
- Reinforcement.** A process in which a behavior is strengthened (i.e., the behavior’s frequency, rate, duration, intensity, or other dimensions increase or persist) as a function of an event that occurs as a consequence of, or contingent on, the response; a natural process or managed procedure that increases the rate or supports the maintenance of a given response. Both *positive reinforcement* and *negative reinforcement* increase or maintain behavior. Also see Reinforcement procedure. 2, 5
- Reinforcement density.** Frequency or rate at which responses are reinforced or the quantity of reinforcers delivered per presentation. The lower the ratio or shorter the interval required by a given reinforcement schedule, the *denser* the reinforcement. 22, 23
- Reinforcer, natural.** See Natural reinforcer. 6, 7, 11
- Reinforcement procedure.** The carefully planned presentation of positive reinforcers, or removal of negative reinforcers or aversive stimuli, as a function of a given response for the explicit purpose of increasing the future rate of that response under similar circumstances. Systematically planned, goal-directed applications of principles of effective reinforcement. 5
- Reinforcement reserve.** The unconsumed quantity of reinforcers in the possession of an individual or group. Often used to refer to a number of tokens or other exchangeable reinforcers. 12
- Reinforcement schedule.** See Schedule of reinforcement. 11, 29, 30
- Reinforcer.** A specific behavioral consequence, the addition of which functions, to increase or maintain the rate of a behavior. A reinforcer is defined solely by its function – that is, by demonstrating an increase or by maintaining the strength (rate, duration, and so on) of the behavior on which it is contingent. See also Positive; Negative; Conditioned; Edible; Tangible; Unconditioned; and other classes of reinforcers. 5
- Reinforcer menu.** An array of possible reinforcers from which respondents may select as a consequence of given (or set of) behavior(s). 6
- Reinforcer preference assessments (RPAs)** Repeatedly presenting to an individual several items at a time, in counterbalanced order to determine which items s/he repeatedly (1) approaches, (2) selects, and/or (3) with which s/he spends the most time. Results inform reinforcer-selection for a particular intervention program. 6
- Reinforcer sampling.** Enabling an individual to come in contact with a potential reinforcer to experience the positive characteristics of the stimulus. Used to develop new reinforcing consequences for particular individuals. 6
- Reinforcer survey.** A set of questions designed to help identify an array of reinforcers effective for a particular individual. 6
- Reliable measurement.** Measurement that remains consistent regardless of who conducts it and what conditions prevail. See also Reliability. 7
- Reliability of Measurement.** Consistency of measurement across time, observers and conditions. Also see Interobserver agreement assessment. 7
- Repeated measures experimental designs.** See Single subject experimental designs. 9, 25
- Repertoire, behavioral.** See Behavioral repertoire. 5
- Replacement behavior.** Behavior chosen to yield reinforcers equivalent to or greater than those previously yielded by the problem behaviors. 10
- Replicate.** To repeat or duplicate an experimental procedure, usually to demonstrate its reliability by reproducing the results. See also Systematic replication. 25
- Required relaxation.** See also Seclusion timeout. 29
- Respondent behavior.** A response that is lawfully elicited by antecedent stimuli. Also, *reflexive behavior*. *Unconditioned respondent behavior* is an autonomic response that requires no previous learning, like a startle response or knee jerk. Other respondent behavior may be *conditioned*, as in Pavlov’s famous experiments with the conditioning of dogs’ salivation. See also *Elicit*, and *Conditioned* and *Unconditioned respondent behavior*. 2
- Respondent conditioning** (also referred to as **classical conditioning**) is said to take place when a neutral stimulus (NS), (one that does not automatically elicit an unconditioned response – an UR), is paired with an unconditioned stimulus (US), producing, thereby, an UR. As those pairings continue, the formerly neutral stimulus gradually gains the eliciting properties of the US, eventually evolving into a conditioned stimulus (CS) capable of eliciting a response almost identical to the UR, the conditioned response (CR). 2

- Response.** A directly measurable behavior. Used interchangeably in this book with *behavior* and *performance*. 1, 2
- Response class.** The composite set of behaviors controlled by a particular reinforcing or punishing event, (e.g., yelling, crying, or throwing things, are each specific behaviors; yet if they equally gain a child access to a desired toy, yelling, crying and throwing are said to be members of the same response class. 2
- Response cost.** A reductive procedure in which a specified quantity of available reinforcers are contingently withdrawn following the response, resulting in a decrease in the rate of the response. Usually these reinforcers are withdrawn from the client's reserve, as with loss of points, yardage, or fines. In *bonus response cost*, reinforcers are subtracted from a reserved pool of potential bonus reinforcers. 29
- Response delay.** A procedure designed to prevent the client from responding too quickly ("impulsively") by requiring a preset time delay between the S⁺ or S^D and the response. 20
- Response deprivation hypothesis (RDH).** A hypothesis stating that when access to an activity is restricted to below baseline levels, the person will engage in the targeted activity at a level exceeding baseline rates. Restricting access to below baseline levels, then, serves as a motivating operation. 6
- Response effort.** The amount of force, exertion, or time required to engage in a response. Other factors being equal, problematic reactions may be prevented or minimized by temporarily reducing the level of the demand or effort in the task. By contrast, increasing the requisite response effort may serve a punishing function. 26
- Response fluency.** A state achieved when a participant's targeted behavior occurs smoothly, rapidly, and with little apparent effort; a condition that facilitates generalization and maintenance and helps prevent relapse. 17, 21
- Response generalization.** See Generalization, response. 21
- Response induction.** See Generalization, response. 21
- Restitutional training.** See Overcorrection. 30
- Restrained timeout.** See Seclusion timeout. 29
- Resurgence.** *The recurrence of previously reinforced behavior when a target, or dominant, behavior is placed on extinction.* Resurgence contributes variability of responding during extinction. 27
- Return to baseline experimental design.** This design incorporates the withdrawal and its several variations, including the reversal design. 9
- Reversal phase.** A return to baseline phase in which reinforcers are delivered contingent on the occurrence of the undesired, instead of the desired behavior. The A₂ experimental phase. Also see withdrawal phase. 9
- Reversal design.** An experimental design in which the effects of the *independent variable* are tested by introducing a phase (e.g., a DRA or DRO treatment phase) during which the direction of the change reverses (i.e., reinforcement of being out-of-seat instead of in-seat). A reversal design, then, requires an intervention crafted for the purpose of turning behavior around in the opposite direction, as in intervening to *promote* the unwanted behavior. 9
- Reward.** A reward is an arbitrarily selected item or event assumed to motivate an individual to repeat a given behavior. A reward is not a reinforcer unless it has demonstrated its effectiveness as a contingent stimulus that increases or sustains a person's behavior under given (setting, establishing) conditions. 5
- Role-playing.** Performance of a sequence of responses to simulate the action of another individual or the same individual under other circumstances. A method of *behavioral rehearsal*. 18
- Rule-governed behavior.** See Verbally controlled behavior. 18
- S.** See Stimulus. 15
- S⁺.** A neutral stimulus designated to become discriminative for reinforcement (i.e., to become an S^{Dr}.) 15
- S⁻.** A neutral stimulus designated to become discriminative for punishment: (i.e., to become an S^{Dp}.) 15
- S⁰.** A neutral stimulus designated to become discriminative for non-reinforcement: (i.e., to become an S-delta or S^Δ.)
- S^D.** See *Discriminative stimuli*. 2, 15
- S^Δ (S-delta).** See *Discriminative stimuli*. 2, 15
- S^{Dr}.** See *Discriminative stimuli*. 2, 15
- S^{Dp}.** See *Discriminative stimuli*. 2, 15
- S^E.** See *Establishing stimulus*. 15
- S^M.** See *Motivating stimulus*. 15
- Satiation.** The reduction in performance or reinforcer effectiveness that occurs after the participant has received a large amount of a particular reinforcer usually within a short time period following the behavior. 11
- Scatter plot.** A graphic depiction of recorded instances of the behavior of concern. Those instances are plotted according to when (and by implication where) they are emitted. *Time of day* is plotted on the ordinate (y-axis); *days* on the abscissa (x-axis). Used to reveal elusive environmental stimuli that may be influencing the behavior. 16
- Schedule of reinforcement.** The rule followed by the environment that determines which among the many occurrences of a response will be reinforced. See *also* Interval schedules, Fixed and Variable time, Ratio schedules of reinforcement, Limited hold, Differential reinforcement of high rates (DRH), and Adjusting schedules. 11, 22, 23
- Scientific method.** A method of research in which a problem is identified, relevant data are gathered, a hypothesis or question is formulated from the gathered data, and the hypothesis or experimental question is empirically tested. 1
- Seclusion timeout.** The most restrictive form of timeout: For a set time-period, removing the individual from the environment and, for a brief period of time, placing him or her alone in a room or other environment designated for this purpose; also, if necessary, preventing him or her from leaving (i.e., locking or blocking the door) until the end of the timeout period. This restrictive form of timeout is used mainly to contain violent behavior and/or to

protect either individuals themselves or others. And, like facial screening, some states in the U.S. restrict its use. Variations of seclusion timeout include: a) *required relaxation*, which requires that the individual lie down, usually on a bed; b) *restrained timeout*, often referred to as either 1) *movement suppression* or 2) *therapeutic holding/restraining*. Physically restraining or therapeutic holding is the more severe of the two variations, but these often are combined to reduce seriously dangerous behaviors, such as ingesting non-edible objects like rocks, poking one's eyes, or hitting one's head against the wall. 29

Secondary aversive stimulus (S^p). A stimulus that initially has no aversive properties but acquires them as a result of its having repeatedly been accompanied by or of occurring just prior to (1) the withdrawal or absence of reinforcers, or (2) the delivery of primary or other learned aversive stimuli. Also called conditioned aversive stimulus. 6, 30

Secondary prevention. Using strategies like small-group social skills training and tutoring, with clients who are at-risk for failure and/or behavioral problems. 3

Secondary reinforcer (S^r). A stimulus that initially lacked reinforcing properties, but has acquired those by being paired with primary or strong secondary reinforcers. Also called *conditioned* or *learned reinforcer*. 6

Self-control. Choosing more valuable but delayed, over a smaller more immediate reinforcers. (e.g., completing a work assignment instead of watching TV, visiting friends on the weekend rather than during the work-week, to complete assignments and thereby avoid the pressure of a last-minute rush.) Sometimes referred to as *self-management*. 11

Self-injurious behavior inhibiting system (SIBIS). An apparatus designed to reduce severe self-injury by delivering electric shock as punishment. It is activated by severe self-blows to the head, delivering response-contingent electric shock to the client's arm or leg, while automatically recording the stimulus delivery. 30

Self-instruction. Guiding one's own learning, usually by reciting a sequence of verbal prompts or using other prompting, fading, and reinforcement strategies. 11

Self-management. A procedure in which individuals change some aspect of their own behavior. One or more of five major components are generally involved: (1) Self-selection of goals; (2) monitoring one's own behavior; (3) self-selection of procedures; (4) implementation of procedures, including reinforcing one's own behavior; and, (5) self-evaluating, including monitoring and determining the effectiveness of the procedures. 11

Self-modeling, video. A form of video modeling in which trainees are shown videotaped segments of the best samples of their own behavior, while external prompts and flawed examples are edited out. Self-modeling is designed to prompt imitation of one's own exemplary performance. 18

Self-monitoring. Observing and recording one's own behavior. 11

Sensitive measure of behavior. A measure that reflects subtle changes in the the response of interest. E.g., using using a watch that displays tenths of a second, not just minutes to measure how fast someone runs the 50 yard dash. 7

Sequence analysis. A description of an individual's behaviors and the events observed to precede and follow those behaviors. Used to provide clues about the possible functional properties of various antecedent and consequential stimuli. 10

Sequence effects. (Also called carryover or alternation effects.) A situation in which one experimental treatment phase *within the experiment* influences subsequent performance during another treatment phase. 25

Sequencing method. A method for identifying antecedent stimuli controlling a response -- by trying first one, then combining two, three, (and so on) potential S^ps to determine which one or combination evokes or abates the behavior. 16

Sequential withdrawal design. An experimental design in which first one element of the treatment is withdrawn,

then a second, and so on, until all elements have been withdrawn; particularly well suited to assessing behavior for maintenance.

Setting events. See "motivating operations." 2, 15

Shaping. Teaching new behaviors by differentially reinforcing *successive approximations* toward the behavioral objective. Sometimes PSI or individualized instruction is referred to as *shaping*. 13

"Show" procedure. See Modeling procedure. 18

SIBIS. See Self-injurious behavior inhibiting system. 30

Significant others. Individuals with substantial knowledge of, contact with, and/or control over many of the client's contingencies, such as family members, teachers, and close friends. 6

Simple correction A single corrective action as opposed to *Overcorrection*. 30

Simple discrimination contingency. This contingency consists of an antecedent stimulus, A (or S^p), a behavior, B (or response, R), and the consequence C (or reinforcer, S^r). 16

Simple stimulus control. See Stimulus control, simple. 16

Simultaneous matching to sample. See Matching to sample, simultaneous. 16

Simultaneous treatment design. Two or more baseline and/or treatment options are simultaneously in place and the participant's performance under each condition is assessed separately. See Alternating treatment design. 25

Single-subject experimental designs. Used to evaluate unambiguously the effects of the independent variable on the behavior. Demonstrates the relation between the experimental manipulation of a specific independent variable, or treatment, on the change in behavior (the dependent variable). Behavioral research designs based on repeated measurement of a behavior under the same and under different conditions of the independent variable (phases). During each phase, sufficient data are collected to depict a convincingly valid representation of the behavior under that condition. Sometimes referred to as intensive designs, single

- case designs, *repeated measures*, *time-series experimental designs* or within-subject designs. *See also* Experimental design; Alternating treatment design; Multiple baseline design; Reversal design; Withdrawal design. 9, 25
- Single-case designs.** *See* Single-subject experimental designs. 9, 25
- Skill card.** A *task analysis* of a social skill often printed on a 3x5 card. Skill cards can serve as S^Ds to prompt the client's actions. 14
- Skills analysis.** *See* Task analysis. 14
- Social facilitation.** Said to occur when rates of responding are influenced by the performance patterns of others. 23
- Socially mediated reinforcers.** Reinforcers delivered by another person. 6
- Social reinforcer.** An interpersonal act that serves a reinforcing function. Reinforcers mediated by other people, such as recognition, compliments ("What a good boy!"), or peer approval. 6
- Social stories.** A specific individualized stimulus control strategy designed to suit a child's specific situation, ability, and environment; designed to prompt children to follow a particular social protocol that addresses the *who*, *what*, *when*, *where*, and *why* of a given social situation, along with the likely reactions of others. 26
- Social validity.** A feature of measured results that includes (1) the social significance or importance of the goals, (2) the social appropriateness of the procedures, and (3) the social importance of the effects. 25
- Specific praise.** Involves specifying the particular target behavior, providing the reason or rationale for its delivery, providing eye contact, and speaking in a sincere, enthusiastic tone of voice. Designed to reinforce a given behavior *and* assist the learner to discriminate the conditions under which the response is to be emitted. Often called *labeled* or *qualitative praise*. 11
- Spontaneous recovery.** The reappearance of a presumably "extinguished" response *at the beginning of a new session or under new conditions*, despite no resumption of reinforcement. 27
- S^R.** *See* Conditioned reinforcer; Positive reinforcer; Reinforcement. 5, 6, 15
- S^R.** *See* Unconditioned reinforcer (S^R). 5, 6, 15
- Standard celeration chart.** A variation of a semi-logarithmic chart, which shows proportional or relative changes in behavior. Because the units on the y-axis in standard celeration charting are not equally distanced from each other, but rather represent a proportional increase, it is not considered an equal interval graph. Precision Teaching relies on using standard celeration charts. 8, 17
- Strategic planning.** "Strategic planning determines where an organization is going over the next year or more, how it's going to get there and how it'll know if it got there or not" (McNamara, 2008). 4
- Step size.** The number of new responses in a subset, or the extensiveness of the change in topography that constitutes a *successive approximation* in a specific shaping procedure. 14
- Stereotypy.** The persistent and inappropriate repetition of phrases, gestures, or acts. 5
- Stimulus (S).** A specific or combination of physical objects or events, (stimuli), which affect the behavior of an individual. Stimuli may be internal (e.g., pressure, pain, covert statements) or external to the person. Stimuli frequently arranged in behavior analysis programs include reinforcing, aversive, and discriminative stimuli. 2, 15
- Stimulus change.** The presentation or removal of motivational operations or discriminative stimuli that evoke or abate [inhibit] behavior. 16, 26
- Stimulus class:** A group of antecedent stimuli that have a common effect on an operant class. Group members tend to evoke or abate the same behavior or response class, yet may vary across physical dimensions. 2
- Stimulus control.** The process (when it takes place naturally) or procedure (when intentionally programmed) that enables an antecedent stimulus to gain control over one or more particular behaviors as a function of the individual's experience of response-consequence correlation in the presence of that antecedent. The relation between a discriminative stimulus and a response that is correlated with a consequence. A term used to describe responding governed by stimuli that precede a given behavior. Depending on circumstances, these antecedent stimuli may be labeled *discriminative stimuli* (S^Ds). *See also* Discriminative stimuli. 2, 15
- Stimulus control, simple.** A reliable relation between an antecedent stimulus and a response, in the sense that a given discriminative stimulus (S^D) dependably evokes or abates a particular behavior. *Also see* Discrimination, simple and Simple discrimination contingency. 16
- Stimulus control, strong.** Sometimes called tight, complete, or powerful stimulus control, particularly when a given response occurs at a much higher or a much lower frequency depending on the presence or absence of the identified discriminative stimulus. 16
- Stimulus control, weak.** Sometimes called incomplete stimulus control. Inferred when a particular behavior occurs irregularly or diminishes in the presence of a given discriminative stimulus; that the antecedent stimulus does not consistently regulate the behavior; that the behavior does not reliably occur or fail to occur, respectively, in response to the presence or absence of the stimulus). 16
- Stimulus delay procedure.** *See* Delayed prompting and Time delay procedure. 20
- Stimulus discrimination.** *See* Discrimination, stimulus 2, 21
- Stimulus equalization.** An error reduction procedure in which the complexity of a set of stimulus dimensions is abruptly, but temporarily reduced by eliminating irrelevant dimensions. 20
- Stimulus equivalence.** *See* Functional equivalence. 16
- Stimulus fading.** *See* fading. 20
- Stimulus generalization.** *See* Generalization, stimulus. 2, 21
- Stimulus property.** An attribute or parameter of the stimulus such as topography, texture, volume, size, color, position, and intensity. *See also* Parameter.
- Stimulus overselectivity.** A form of prompt overdependence in which

responding is controlled by one or more non-relevant stimuli are among the full array of stimuli. For example, child with autism will respond to request to touch his nose only when table and chair are present from therapy room. 17

Strategic planning. A organizational method that includes determining goals, how their attainment will be evaluated and what are to be scheduled to accomplish the goals. 4

Strong stimulus control. See Stimulus control, strong. 17

Student success team (SST). A group organized within a school for the purpose of identifying, addressing and preventing problems exhibited by the 10 - 20% specific individual students who have not responded satisfactorily to the programs implemented by the positive behavior support team (PBST) and/or who remain *at-risk* for severe academic or behavioral problems. 3

Sub-goals. Short-term goals, usually expressed in numerical quantities designating particular accomplishments to be attained toward the purpose of achieving the end goal. 17

Subjective measures. Non-publically verifiable measures; measures that cannot be repeated by others. 7

Subset of behavior. The group of simpler response components that may combine to form a more complex behavior. 14

Successive approximations. The gradual changes in the form or shape or other features of a behavior as it increasingly approaches its intended topography. 13

Supplementary reinforcers. Reinforcers used to augment the natural reinforcers to help bridge the time gap before the natural reinforcer is delivered. They are designed to signal that a stronger reinforcer is apt to be forthcoming. 11

Surrogate motivating operation. See Motivating operation, surrogate. 15

Systematic replication. A method designed to repeat or duplicate experimental findings by applying the core features of an experimental investigation, despite variations in a number of conditions, such as task, setting or other parameters of the basic procedures. 25

Tacts. Verbal operants under the functional control of nonverbal discriminative stimuli, whose emission is reinforced by generalized conditioned reinforcement. Tacting includes saying a word in the *presence* of an object, an event, or a feature of an abstract stimulus class. (Notice that we cannot tact things that are not present. Naming things not present is simply called naming.) 19

Tangible reinforcers. Tangible items (magazines, jewelry, toys, cars, and so on) the contingent delivery of which increases or maintains a behavior. 6

Target behavior. The behavior to be changed. In this book, we often use the term interchangeably with *pinpoint*, *dependent variable*, or *wanted* or *unwanted behavior*. 4

Task analysis. Breaking down a complex skill, job or behavioral chain into its component behaviors, sub-skills, or subtasks. Components are listed in its order of occurrence and are designed to set the occasion for the occurrence of the next behavior. Task analyses are particularly useful in planning specific stimulus control and chaining procedures.

Task analysis, empirical. Task analysis based on systematically observing performers in action. Also see Chain. 14

Task analysis, rational. Components of a task analysis derived from studying the subject matter and specifying the process or procedure that is presumed to be involved in performing the task.

Teaching. Promoting learning, by any or a combination of various means: showing, telling, guiding, and differentially reinforcing accuracy and rate and/or otherwise arranging matters so that reinforcement follows a reasonable proportion of those efforts directed towards meeting behavioral objectives. 2

Tell procedure. An instructional or stimulus-control procedure that uses oral, written, signed, or other instructions or rules to prompt the emission of a correct response under appropriate conditions, thereby enabling it to become eligible for reinforcement. 18

Terminal behavior. The behavior ultimately to be achieved as the outcome of a behavior analysis program;

described according to all its relevant behavioral dimensions or parameters. Usually it is assigned a criterion or standard level of performance by which its acceptability is to be judged. Often used interchangeably with *behavioral* or *instructional objective*, *goal behavior*; and *target behavior*; occasionally denoted by the noun *pinpoint*.

Tertiary prevention. Individualized strategies (e.g., functional behavior assessments and individualized behavior plans, including positive behavior interventions) designed to assist clients who regularly exhibit severe social and/or academic problem behaviors. 3

Therapeutic holding/restraining. See Seclusion timeout. 29

Three-term contingency. A phrase used to describe the interdependency among antecedents, behavior and consequences: A-B-C's. Example: When a given behavior (B) occurs under specific stimulus conditions (the antecedents—A), it is to be reinforced (the consequences—C). 2, 15

Tiered or level token economies. Economies in which participants are able (or required) to move up (or down) a hierarchy of levels, contingent upon their improved (or worsening) behavior by meeting set criteria. The higher the level attained, the greater their access to various back-up reinforcers. 12

Time delay prompting. See Delayed prompting. 20

Timeout. A procedure in which access to varied sources of reinforcement is removed or reduced for a particular time period contingent on an unwanted response, for the purpose of reducing the rate of the response. Access to reinforcement is contingently removed for a specified time either by contingently removing the behaving individual from the reinforcing environment, or the reinforcing environment is contingently removed for some stipulated duration. There are several levels of timeout. See *Inclusion timeout*, *Exclusionary timeout*, and *Seclusion timeout*. 29

Timeout ribbon. See Inclusion timeout. 29

Timeout room. A physical space arranged to minimize the reinforcement that an

individual is apt to receive during a given time period, sometimes referred to as *timeout booth* or *quiet place*. Procedures for using such facilities must conform to ethical and legal standards. 29

Time-sampling. A direct observational procedure in which the presence or absence of specific behaviors is recorded within short uniform time intervals. (E.g., an observer observes for 10 seconds and records the occurrence or nonoccurrence of a behavior during the following 5 seconds.) This procedure may continue for a specific time period each day. Time-sampling variations include: (1) Whole-interval time-sampling, (2) partial-interval time-sampling, and (3) momentary time-sampling. 7

Time schedules of reinforcement.

Reinforcement is contingent on the passage of time, regardless of ongoing behavior (a) *Fixed time schedule (FT)* – a schedule of reinforcement in which reinforcers are delivered following the passage of a specific amount of time and not dependent on a particular response. (b) *Variable time schedule (VT)* – A schedule in which reinforcement is delivered contingent on the passage of a variable time interval, not upon the occurrence of a particular response. 27, 23

Time series experimental designs. See Single subject experimental designs. 9, 25

Token. A conditioned reinforcer in the form of a ticket, voucher, checkmark, or other symbolic item, which is exchangeable at a later time for a coveted reinforcing item or event (the *back-up reinforcer*). The extent to which tokens serve as reinforcers depends on the individual's experience with them and the available back-up items. 6, 12

Token economy. A contingency package. Tokens (exchangeable reinforcers) are given as soon as possible following the emission of a target response. The recipient later exchanges the tokens for a reinforcing object or event. Also called token system. 12

Token system. See Token economy. 12

Topography of response. The configuration, form, appearance, or shape of a response. The correct topography of

a behavior can be determined by photographing an expert performing the behavior. 4, 7

Total task method of chaining. See Concurrent task method of teaching. 14

Transfer of stimulus control. A process by which a new antecedent stimulus begins to evoke a response in place of a previous antecedent stimulus. In applied behavior analysis this is often deliberately arranged by using *fading* or *delayed prompting*. 20

Transitive motivating operation. See Motivating operation, transitive. 15

Transitory behavior. A behavior that does not leave an enduring product or outcome (e.g., smiling, paying attention, or teasing). Such a behavior needs to be observed and recorded as it occurs or preserved by means of audio/video recording. See the various recording methods: Event, Duration, Latency, IRT, and various Interval time sampling methods. 7

Treasure box. A motivational tool used in schools and homes. Toys, games, and arts and crafts materials are contained in colorful boxes and used as reinforcers for young people. Items within a box will vary from time to time or, if used in a school, boxes can be exchanged periodically among classrooms to increase novelty. 11

Treatment. The behavioral procedures, intervention program, or independent variable(s) being applied. May be referred to as a *treatment-* or *contingency-package* when specific behavioral procedures are combined into a cohesive treatment. 9

Treatment drift. A term used to describe the application of the intervention veering off course from its originally intended path, thereby violating the fidelity of the implementation or treatment. 7

Treatment fidelity. See Fidelity of implementation. 3, 7

Treatment integrity. See Fidelity of implementation. 3, 7

Treatment phase. The period of time during which the intervention is in effect. 9

Treatment utility of assessment. The degree to which assessment is dem-

onstrated to contribute to desired or beneficial treatment outcomes. 7

Trend. The general direction and rate of increase or decrease in which data move over time. 8, 9

Trendline. A standard of reference line derived by examining measures of central tendency of a series of data setst over time; used to determine the rate and direction of change (trend); that is, whether the rate of the behavior is accelerating or decelerating. 8, 9

Trials to criterion. The number of responses for the participant has emitted in order to meet the criterion or standard set for success. 7

Unchaining. Sometimes called “disrupting” or “unlinking” a chain; a method designed to lessen behavior by unlinking one element of the chain from the next so that one link no longer serves as a discriminative stimulus for the next link, nor as the reinforcer for the prior link. This sometimes may be accomplished by reinforcing the last response in a chain, despite its occurring in the absence of the other responses in the chain. 14

Unconditioned aversive stimulus (S^p). See primary aversive stimulus. 15, 30

Unconditioned motivating operation. See Motivating operation, unconditioned. 15

Unconditioned reinforcer (S^R). See primary reinforcer. 2, 6

Unconditioned respondent behavior. Behaviors reliably elicited by stimuli that precede those behaviors (i.e., unconditioned antecedent stimuli), despite any prior learning. Unconditioned respondent behaviors are also known as reflexes and generally are thought of as behaviors with which the individual was endowed at birth. 2

Unconditioned stimuli (USs). Particular preceding stimuli that directly produce (“elicit”) respondent behaviors. A familiar US is, a bright light shined into the eyes causing the pupils to contract (UR). 2

Valid measures. The extent to which measures actually measure what they are purported to measure. 7

Variability. The degree to which the rate of the behavior varies (sometimes

from the measure of central tendency) from one assessment to another. 8

Variable(s). Any behavior or condition in the individual's internal or external environment that may assume any one of a set of values (e.g., number, size, shape, intensity). *See also* Control variable, Dependent variable; Experimental variable, Independent variable. 9, 25

Variable interval (VI) schedule. *See* Interval schedules of reinforcement. 23

Variable ratio (VR) schedule of reinforcement. *See* Ratio schedules of reinforcement. 22

Variable time schedule. *See* Time schedules. 23, 27

Verbal behavior. Behavior reinforced through the mediation of other persons. Included are spoken or non-spoken forms of communication that help people get what they want and avoid what they don't want, faster and more efficiently. Included under the rubric of verbal behavior are speaking, gestures, writing, typing, touching, and so on. There is no specific one form, mode or medium. Verbal behavior, then, refers to a particular class of behavior that serves as a vehicle or mediator for allowing organisms to obtain reinforcers. 19

Verbally-controlled behavior. Behavior under the control of as rules and instructions, rather than behavior shaped by reinforcing or aversive consequences. Because it covers a broader array of verbal stimuli, the term "rule-governed behavior" generally has been replaced by the term "verbally-controlled behavior." 18

Verbal stimuli. Words, gestures, and other symbolic stimuli that serve to mediate reinforcement. 19

Vertical phase change lines. *See* Phase change lines. 8

Video modeling. *See* modeling, video. Also see Self-modeling. 18

Video self-modeling. *See* self-modeling, video. 18

Voluntary. The client's voicing agreement with the terms of the behavior-change program under non-coercive circumstances. Behavior is assumed to be voluntary when the individual chooses and/or initiates action toward a goal, in the absence of threats or highly intrusive, unusually powerful, incentives. 4

Weak stimulus control. *See* Stimulus control, weak. 16

Whole-interval DRO. A reinforcer is delivered following a period of time during which the individual has not engaged in a given behavior. 28

Whole-interval time-sampling. A time-sampling procedure, often referred to simply as interval recording, that requires the response to be emitted throughout the entire interval for its presence to be scored. *See also* Time-sampling. 7

Whole task. *See* Concurrent task method of teaching. 14

Withdrawal design. An experimental (design that involves the removal of the intervention in order to test its effect. For example, one frequently used withdrawal design involves: (1) Obtaining a base rate measure of the target behavior; (2) repeatedly applying the intervention or procedure; (3) withdrawing the intervention for a time, under the same conditions as those that were in effect during the baseline period; and (4) reapplying the intervention. This design is used to determine whether the effect of the intervention can be reproduced. (Often abbreviated as ABAB design.) Also see Reversal design. 9

Withdrawal of treatment phase. The phase in the return-to-baseline design in which the intervention is temporarily removed to demonstrate experimental control. The A₂ phase. 9

Within-stimulus prompts. Increases errorless learning by altering "the physical characteristics of the stimuli to be discriminated to increase the likelihood that correct responses will occur early in training" (Green, 2001, p. 78). 20

Within-subjects experimental designs. *See* Single subject experimental designs. 9

X-axis. The horizontal line on the graph. The x axis displays the label for the observational sessions. These may be composed of specific observational sessions (usually described in more detail in the accompanying narrative) or standard units of time, such as hours, days, weeks or months. 8

Y-axis. The vertical line on a graph.. The y axis, usually is used to depict a measure of the dependent variable (the behavior), often is assigned a label such as "Frequency," "Number," "Percentage" etc.), and contains the axis scales or numerals. 8

Zone system. An observational system similar to partial-interval time-sampling in which not time but space—such as the school yard—is divided into specific pre-designated areas. Each area, or zone, is relatively small and provides equivalent opportunities for the target behavior to occur in it. The observer watches and counts the presence or absence of the behavior, or the frequency or results of a given behavior within a particular area. Sometimes the design is planned to function on an interval spoilage basis—that one or more scored instances of the targeted behavior recorded within that zone during the observational interval (e.g., 10 seconds, a day) indicate the occurrence of the behavior or result. Alternatively, the observer may score behavior within 1 zone over several time intervals, before moving on to the next. 7