

SPHSC 500

UW SPHSC Glossary of Basic Clinic Terms

(A compilation of terms from Drs. Dowden, Olswang, Stone-Goldman and Sargent)
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Antecedent or stimulus (plural = stimuli): Event that elicits a response. What is done to elicit a specific response. This should include the modality (visual, verbal, or tactile) and whether there is a model (direct, delayed, embedded, simultaneous and direct). Be careful not to confuse the instructions for starting a new task with the antecedents that immediately precede (and elicit) each and every behavior.

Assessment: “A set of clinical procedures with which information is obtained on a client’s ...communicative behaviors, communicative problems, and potential factors associated with these problems; the information is evaluated to understand and treat the problems. Also defined as measurement of client’s behaviors (Hegde, 1998, p. 299)

- **Static Assessment:** Measures designed to sample performance without facilitating cues, to determine the client's current level of performance for the specified behavior.
- **Dynamic Assessment (Stimulability):** Measures constructed to sample a specific behavior with varying degrees of cues from the clinician.
- **Standardized Assessment:** Assessment that is administered and scored in exactly the same way for all individuals. Standardized measures allow for comparison of a child's performance to peers' to determine whether behavior is within normal limits.
- **Non-standardized Assessment:** Not part of a standardized test, so it does not yield a score for comparison to a normative group. May be called “informal” but this should not imply “haphazard”

Baseline: Rates of responses in the absence of planned intervention.” (Hegde, 1998, p. 299.)
Clinician’s use baseline performance (or base rate of performance) to describe the habitual state of a behavior prior to the introduction of treatment.

Behaviors/Responses: Target behaviors are the focus of treatment and are, therefore, expected to change as a result of treatment. Target behaviors can be at the structures/functions, activity-participation, environmental levels (WHO model).

Note Hegde discusses different levels of response throughout intervention:

- Immediate or initial response: “The first simplified component of a target response used in shaping.” (Hegde, 1998, p. 302)
- Intermediate response: “Responses other than the initial and final that are used in shaping.” (Hegde, 1998, p. 302)
- Final or terminal response: The response that means the objective was met, so a particular treatment can be discontinued.
- Response class: Hegde, p. 62: “[Related behaviors] produced under the same stimulus conditions” For example, different types of protests, or different versions of past tense verbs, or distinctive features.

Coding System: A system for operationally defining behaviors so that they can be observed and measured (often called a “**behavioral taxonomy**” or “operational definitions” (Hegde, 1998, p. 303)

Consequence: What occurs immediately following the client's response. What the clinician does when the client's response is correct and when incorrect. It could be some kind of reinforcement or a punishment, although the latter is rare in our field.

Punishment: To be defined later

Reinforcement: “Events that follow behaviors and thereby increase [NEVER decrease] the future probability of those behaviors.” (Hegde, 1998, p. 305) The clinician can provide reinforcement in many different **modalities**.

- **Schedule of reinforcement:** The frequency with which consequences are given. Hegde describes a variety of schedules: It could be at a **fixed ratio schedule**, for example 1:1, meaning that reinforcement is given for every response, or it could be 1:2 or 1:5, etc. Or it could be at a **fixed interval schedule**, meaning that reinforcement is given at certain time intervals, regardless of the number of responses. Or it could be more intermittent, on a **variable ratio schedule** or **variable interval schedule**. Some people refer to reinforcement that is 1:1 as continuous and anything that is not 1:1 as intermittent.
- **Primary vs secondary reinforcement: Primary reinforcers** are “unconditioned reinforcers whose effects do not depend upon past learning [in this context]” for example food (Hegde, 1998, p. 304). **Secondary reinforcers** are “Conditioned reinforcers whose effects depend on past learning” (Hegde, 1998, p. 305) for example tokens, stickers, praise, etc. Automatic reinforcers are “sensory consequences of responses that may reinforce those responses” for example the click of a switch for a child learning to use a voice output device. Another example would be kinesthetic feedback with articulatory productions.
- **Positive vs negative reinforcement vs punishment: Positive reinforcements** are “Events that, when presented immediately after a response is made, increase the future probability of that response” (Hegde, 1998, p. 304) for example, you might praise a child for producing a phoneme. **Negative reinforcements** are “Aversive events (stimuli) that are removed, reduced, postponed, or prevented ...” and thereby increase the frequency of the target behavior (Hegde, 1998, p. 303). For example, when a child with autism activates a switch to request a break from a challenging activity and you give him that break, you are using the end of the activity as a negative reinforcer to increase the use of the switch for communication. Note that BOTH types of reinforcers (positive and negative) serve to increase the target behavior because you want to increase a desirable behavior. Do NOT confuse negative reinforcement with punishment. **Punishment** is reducing a behavior (an undesirable behavior) by giving an unpleasant consequence (e.g. harsh criticism) or by withdrawing something pleasant (e.g. taking away a token).
- **Feedback** Information given to the client about target behavior. **Informative feedback** is information about what was correct about client’s response. **Corrective feedback** is telling the client why a response was incorrect in order to help him/her correct it next time. Technically, corrective feedback such as “You did not use your voice for the /z/” could be considered a form of punishment because it should decrease the likelihood that the client will make that error again.
- **Natural vs unnatural/contrived reinforcers: Natural** reinforcement in communication is simply to respond to the meaning in the speech. For example, you are teaching nouns in a game of “Go Fish” and when the child conveys the noun clearly enough for you to understand it, you simply tell him whether you have it or not. Praise such as “good job” or “You said it” or “Nice /r/ sound” are as **unnatural** as tokens or stickers. Both natural and unnatural may be necessary at different points in the program, but your hope is to use natural reinforcers whenever possible.

Criterion: “Rules to make various clinical judgments including when to model, when to stop modeling, and when a behavior is [considered] trained” (Hegde, 1998, p. 300) Minimal acceptance of success for each step. How many correct responses you would expect before changing your program. Often, this is a percent correct within a certain number of opportunities or across sessions. However, there are many other ways to express criterion, for example, a frequency count in a given time frame.

Client Characteristics: detailed description of the individual who is being treated. This information should include at least the following: age, gender, etiology, age of onset or months post onset, speech diagnosis, language diagnosis, other relevant characteristics.

Context: Treatment can be conducted in a variety of situations and settings, and by different people.

Contingency: interdependent relationship between events or factors. In treatment, a clinician manipulates contingencies (independent variables) in order to effect change in client behaviors (dependent variables).

Continuum of Naturalness:

- **Naturalistic:** This type of therapy activity and/or data collection reflects a milieu approach; data are collected in situations/settings/activities that are closest to the individual's daily life experiences.
- **Contrived (or Highly Structured):** This type of therapy activity and/or data collection reflects a highly structured approach; data are collected in a controlled situation/activity, perhaps even a laboratory setting.

Cue: See **prompt** below.

Data:

- **Quantitative Data:** These data are "...overt, countable, operationally defined and reliable." (Olswang & Bain, 2001, p. 450). This includes data that are observable, countable, or behavioral as well as data that may not be observable and countable but can be sampled via inventories or scales. *Quantitative data "...begin with a theoretically based hypothesis and collect previously established categories of data to test the viability of that hypothesis"* (UW College of Urban Planning, 2005) [Note: Some subjective data can be quantitative for example a well done opinion poll. What is important is that the methodology for collecting the data be objective.]
- **Qualitative Data:** These data are "...descriptive in context, complex and interwoven and interpretive." (Olswang & Bain, 2001, p. 450) Data that reflect interpretation. Data that form a description of the client in context, often includes *someone's* view/perspective. Descriptive, interpretative data. *"...collect data with neither a theoretical base nor a hypothesis and use the data to generate categories as well as statements of relationships"* (UW College of Urban Planning, 2005) [Note: qualitative is not synonymous with subjective.]
- **Treatment Data:** Data gathered while treatment is being conducted. These data generally reflect performance when the client is supported by prompts and cues, as occurs during treatment.
- **Probe Data:** "...data gathered 'outside' of the teaching paradigm. In other words, one or more elements have been changed from the way treatment is currently delivered to this individual. It is important to note that specific reinforcement/feedback is not given for probes, only general reinforcement for participation. If specific Rf/feedback about performance were given, then this is indistinguishable from intervention. See "Probe Measures" and "Probes" below.
- **Control Data:** Data taken regarding behaviors that should not change as a result of treatment. For example: If you are treating /l/ you would not expect generalization to "sh". So, you can measure "sh" as an untreated control. If it changes along with /l/ then both changes may be due to outside causes (e.g. maturation) rather than to the treatment itself.

Discrimination training: “A behavioral process of establishing different responses to different stimuli.” (Hegde, 1998, p. 301)

Effects/Effectiveness/Efficacy/Efficiency: With the exception of “efficiency” there is no consensus in our field about these terms. The following definitions reflect how Dr. Dowden and Dr. Olswang will be using these terms for teaching as of January, 2008.

- **Treatment Efficiency:** “A comparison of at least two effective interventions in terms of one or more criteria such as time, cost, and error rate, and so forth.” (Schlosser, 2003, p. 15). Evidence that addresses these questions: a) whether treatment is cost effective, b) whether all parts of the treatment are necessary, and c) whether change could happen more rapidly with different treatment plan. (Olswang notes, 2004)
- **Treatment Effects:** Appearance of a link or correlation between intervention and behavior change (based on Schlosser, 2003, p. 20). Typically, this evidence addresses these questions: a) how does the client change in relationship to treatment, b) what is the breadth and depth of change, c) is the client/stakeholder satisfied with treatment? (Olswang notes, 2004). Treatment effects are not proven to be caused by treatment.
- **Treatment Efficacy:** Evidence that a treatment causes the desired change in behavior, demonstrated under ideal conditions. “Evidence concerning the impact of a treatment that is administered under well-controlled and therefore necessarily somewhat artificial experimental conditions. (Dollaghan, 2007, p. 60 and Robey, R quoted in ASHA Leader, 4/11/2006, p. 28)
- **Treatment Effectiveness:** Evidence that a specific treatment causes the desired change in behavior, when given under the less-than-ideal conditions typical of clinical practice. “...evidence concerning the impact of a treatment as it is actually administered in the far less controlled ‘real world’ of clinical practice.” (Dollaghan, 2007, p. 60 and Robey, R quoted in ASHA Leader, 4/11/2006, p. 28)

Note: Dollaghan and many physicians use the expression “bench-to-bedside” to highlight the difference between proof of efficacy under ideal conditions (at the research bench or lab) and proof of effectiveness under real world conditions (at the patient’s bedside).

Directions/instructions for a task: What you tell or show the client before you begin an intervention activity, giving general information about that activity. For example, you might tell him that he will pick up a card and have to say what’s on it using his good /r/ sound or you might tell him how to play a game. Note: redirection may be necessary to guide the client in the task or activity. Be careful to distinguish instructions for the activity as a whole from the antecedent/stimulus or elicitation procedures that precede every production.

Elicitation Procedures: Techniques used by the clinician to get the client to produce the target behavior. See **modeling** and also **modeling vs eliciting** below. An example of an elicitation procedure that does not involve a model is the **Cloze** procedure, for example “You sleep in a _____”

Evidence-Based Practice: Three kinds of evidence (Dollaghan, 2007) – “conscientious, explicit, and judicious integration of 1) best available external evidence from systematic research, 2) best available evidence internal to clinical practice, and 3) best available evidence concerning the preferences of a fully informed patient”

- External evidence: Clinically relevant research re.”accuracy and precision of diagnostic tests (including the clinical examination), the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens.” (Sackett, D.L. et al., 1996)
- Internal evidence: Clinicians “knowledge acquired through formal education and training, general experience accumulated from daily practice, and specific experience gained from an individual clinician-patient relationship.” (Porzolt, 2003) “Internal evidence includes local, systematically obtained assessment,

planning, performance, and outcome data..." (Stetler, 2001) Note: There is reason to consider internal evidence as being of two types: one type is known or investigated before you decide to begin treatment (clinician training, expertise) the other is accumulated during treatment (evidence of effects and effectiveness of the treatment)

- Client preference: fully informed client who then selects a treatment option

Fading: "A method of reducing the controlling power of a stimulus [the prompts or cues] while still maintaining the [desired] response." (Hegde, 1998, p. 301)

Feedback: See consequence/reinforcement above.

Generalization: Occurrence of relevant behaviors under different, non-training conditions.

- **Stimulus Generalization:** "Production of a newly learned response to stimuli not used in training." (Hegde, 1998, p. 306). When the relevant behavior occurs even when presented with new materials, new people or new settings. (Olswang & Bain, 1994, p.57) For example, when a child produces the target phoneme even with a different person (mom) or in a new setting (at home) or with new materials (different toys). It is important to note that this type of generalization involves the trained behaviors, not any untrained behaviors, occurring with (i.e. generalizing to) a new set of **stimuli**. Note that the stimuli would have to be untrained or novel stimuli.
- **Response Generalization:** When effects of learning a particular behavior during treatment spread to other, related (but untrained) behaviors of the learner (e.g. treating /s/ generalizes to /z/ OR treating "agent + action" generalizes to "action + object"). Trained behaviors generalizing to untrained behaviors; it is the individual's **response** (i.e., behavior) that is generalizing. "Production of unreinforced new (untrained) responses." (Hegde, 1998, p. 305)

IEPs or Individualized Educational Plans: Intervention and educational "...plans for children with disabilities or special needs" (Hegde, 1998, p. 302)

IFSP or Individualized Family Service Plans: Intervention "...plans for infants and toddlers [with disabilities or special needs] and their family members" (Hegde, 1998, p. 302)

Maintenance: The ability to continue to perform a behavior over time, even after formal training or instruction has ended. [<http://www.lehigh.edu/projectreach/assets/pdf/glossary.pdf>] Note that we (and many others) disagree with Hegde's definition of maintenance ("extension of treatment to the natural setting" p. 303) because that is our definition of generalization!!!!

Mastery hierarchy: Short-hand for how successfully the client is producing the target behavior.

- **Absent:** The target behavior does not occur at all (0%)
- **Developing:** The target behavior occurs 1% - 79% of the time. Some clinicians break this category down further into emerging and customary.
- **Mastered/consistent:** The target behavior occurs 80% - 100% of the time.

Measures:

- **Treatment measures:** Measures that are made during actual treatment, while treatment is being conducted. Therefore, these measures reflect performance when the client is supported by prompts and cues, as occurs during treatment. The data collected in treatment measures are called treatment data.
- **Probe measures:** Measures that are made outside of the treatment paradigm, under conditions that are different from treatment in one or more respects. Can be structured or unstructured, non-standardized probes, designed to compare over time in "repeated measures". Measures that are made in a way that is different from the current level of

treatment outlined in that day's lesson plan, including: probes with unpracticed materials, probes at a more complex level of communication, probes with fewer cues, probes in a different location or with a different partner. It is important to note that specific reinforcement/feedback is not given for probes, only general reinforcement for participation. If specific Rf/feedback about performance were given, then this would be indistinguishable from intervention. (See discussion of "dynamic probes" below under "Probes".)

- **Repeated Measures:** Measures that are taken repeatedly and periodically over time to determine the nature of the behavior change relative to when treatment is introduced and withdrawn.
- **Pre- and Post-Measures:** Measures that are taken one or more times, prior to and following treatment

Modality/mode/channels (Mode of response): The way in which information is conveyed. In AAC, we talk about a **communication modality**, such as speech, sign, writing, AAC device, etc. In treatment we talk about the **response modality**, the way in which the response is made, whether through speech, sign, writing, gesture, etc. We also talk about the modality of the stimulus as visual, auditory, verbal or tactile; see *stimulus* below.

Modeling: "The clinician's production of the target response the client is expected to learn; used to teach imitation." (Hegde, 1998, p. 303) There are several different types of models

- **Direct model:** Clinician gives client an example of the target response (client expected to respond immediately); also called an immediate model (e.g. "Say cow")
- **Delayed model:** Clinician gives client a model but inserts something to create a delay before client responds (e.g. "This is a cow....[wait] What is it?")
- **Embedded model:** Clinician uses the target behavior within a more complex utterance without calling attention to it. (e.g. "The cow is chewing grass in the field."). This is sometimes called an **indirect model**.
- **Partial model:** This can only be done with some types of target behaviors. The clinician gives the client a model of the target behavior but not the entire production. For example, to elicit /b/ in "bed" the clinician might say /b/ while showing a picture of a bed. Do not confuse this type of model with the **cloze procedure** (See **elicitation** above.) The crucial difference is that the target has to be modeled if you give a partial model, whereas in the cloze procedure, you do not actually produce the target, you only elicit it.
- **Simultaneous model:** The clinician produces the target along with the client. This is only used in some treatments, for example, in Integral Stimulation with adults with apraxia of speech.

Modeling vs eliciting:

- **Eliciting (evoking):** clinician's actions designed to get a client to give a response. Some clinicians use this word to mean procedures that do not include a model, making these two terms mutually exclusive. Others consider "elicitation procedures" to include modeling as well. (Type of antecedent/stimulus)
- **Modeling:** "The clinician's production of the target response the client is expected to learn; used to teach imitation." (Hegde, 1998, p. 303) See details under modeling just above. (Type of antecedent/stimulus)=

Norms: "Averaged (mean) performance of a typical group of persons on a selected test or measure." (Hegde, 1998, p. 303)

Objectives:

- **Immediate objective:** The goals of the current stage of treatment in a sequential treatment plan.
- **Intermediate objective:** A logical resting point at which to re-evaluate treatment.

- **Benchmark objective:** Major success by the client that indicates it is time to change or re-evaluate therapy.
- **Terminal/ultimate objective:** The point at which the client has reached the goal of intervention and is ready for discharge.

Operational definition: “Scientific [or objective] definitions that describe how what is defined is measured.” (Hegde, 1998, p. 303) (Sometimes called a “**coding system**” – see above)

Opportunity vs Trial for a Behavior: A “trial” is each time a client is expected to produce a behavior in a structured activity in treatment. An “opportunity” is each time a client could produce a behavior in an unstructured, natural activity or context. For example, if a child attempts to produce the /l/ sound in words when shown 10 picture cards, there have been 10 trials. In unstructured activities, we tend to call them simply opportunities. For example, if you are monitoring /l/ and you ask the child to tell a story with a set of 5 words that begin with /l/, then you will count the number of times he used any of those words, let’s say 12 times, and consider that your set of opportunities. We often express data in terms of percent correct out of the number of total trials ($\frac{X}{10}$ in the first example) or, in unstructured treatment, the number of total opportunities ($\frac{X}{12}$ in the second example).

Outcomes: Results that are meaningful to consumers or stakeholders, particularly the immediate and extended community. Typically believed to be due to treatment, but not necessarily proven to be so. Outcomes are changes that happen, whether tightly linked to treatment or not.

Phases: (Defined as they are applied to a specific treatment target behavior)

- **Baseline phase:** The period of time prior to the introduction of treatment for a specific target; usually consists of at least three measurement points so as to verify the consistency or reliability of the performance being measured. Often referred to as the baserate level of performance; performance as it occurs without treatment influences. Baseline performance allows you to describe behavior(s) prior to treatment and predict how performance would continue if treatment were NOT introduced. Also called the “baseline period”.
- **Treatment phase:** The period of time when treatment is implemented on a specific target behavior. [Note: data taken or displayed during the *treatment phase* may be *treatment OR probe* data. Treatment phase only implies that during this time period treatment is being administered. Data that are displayed correspond to data – any type – collected during this period of time.]
- **Withdrawal phase:** The period of time following treatment, when there is NO treatment being administered on the particular target behavior. .

Posttests: “Measures of behaviors established after completing an experimental teaching program.” (Hegde, 1998, p. 304)

Pretests: “Measures of behaviors established before starting an experimental teaching program.” (Hegde, 1998, p. 304)

Probes: “...data gathered ‘outside’ of the teaching paradigm.” In other words, one or more elements have been changed from the way treatment is currently delivered to this individual. It is important to note that specific reinforcement/feedback is not given for probes, only general reinforcement for participation. If specific Rf/feedback about performance were given, then this would be indistinguishable from intervention. Here are examples of probes:

- **Unpracticed/untreated probes:** using stimuli that were not used in treatment
- **Out-of-clinic probes:** data collected out of the clinic room
- **Static probes:** no prompts or cues are provided to the client to elicit improved responses while measures are taken. (This does NOT mean there is no stimulus provided.)

- **Note re: Dynamic probes:** You may or may not hear this term. It had been used by some to describe a type of probe in which therapeutic cues are provided, modifications to the task to see how the client responds. However, by definition, a probe does NOT involve specific reinforcement or feedback about performance. In place of this term, others use “trial treatment” or “stimulability” or “dynamic assessment.”
- **Pure probes:** A short hand way of saying that the probes are all unpracticed probes, using new stimuli. (This term may not be used)
- **Intermixed probes:** A short hand way of saying that some probes are trained (practiced) items and some are untrained (unpracticed) items although all are given without feedback or reinforcement. (This term may not be used)

Prompt/Cue: “Special stimuli that increase the probability of a [correct] response” (Hegde, p. 304) A hint or assist of some sort (but not a direct model) designed to help the client produce a target response. Prompts may be verbal or non-verbal. We hope to **fade** prompts and cues over time, even if we still have to have some kind of stimulus to elicit a behavior.

Quantitative Measurement Techniques (*See definition above under “data”.*)

- **Behavioral Measurements:** recording observable events
 - Event Recording
 - Duration Recording
 - Interval Recording
- **Subjective Measurements:** soliciting opinions from stakeholders (usually on some type of scale that can be rated – thus quantified)
 - Self-Monitoring:
 - Assessment of others:

Qualitative Measurement Techniques (*See definition above under “data”.*)

- **Observation - Fieldnotes:** “The written account of what the researcher hears, sees, experiences and thinks in the course of collecting and reflecting on the data in a qualitative study.” (Bogdan & Biklen, 1992, p. 107).
- **Interview**
- **Personal documents**
- **Official documents**
- **Photographs**

Reasoning:

- **Inductive**
- **Deductive**

Reinforcement: See Consequences above.

Response Class: See Behaviors/Responses above.

Response Level: The verbal context of the response, for example, single word, phrase, sentence. [Note: Hegde uses this term completely differently. Use our definition.]

Research Methodologies:

- **Case Report:** "...a preliminary report that describes an aspect of an individual..." (Reilly, Douglas & Oates, 2004, p. 29) This is not an experimental design; it is considered *non-experimental* in fact.
- **Single Subject Design:** This is a controlled, experimental design that can demonstrate that treatment caused the change in the client’s behavior, by ruling out other factors such as maturation.. Also called a "multiple baseline", "single case" or "n of 1 trial". "...teaching new skills and changing behaviors under controlled conditions to show that the methods used are indeed effective.” (Hegde, 1993, p. 35-36.)

- **Group Design:** Between group comparison **Randomized Control Trial (RCT):** A research methodology in which participants are randomly assigned to two or more groups, used to compare two different interventions or to compare an intervention against no treatment.
- **Systematic Review:** "...a summary of all published randomized controlled trials on the topic of interest." (Reilly, Douglas & Oates, 2004, p. 27)

Sequential Teaching Program (STP): A description of how a clinician will work with a client to help the client learn the targeted behavior. It is comprised of a series of steps that lead progressively towards the behavioral objective. These steps typically begin with relatively easy steps (near the client's present abilities) and gradually introduce harder steps to teach a new behavior. Sometimes called "programmatically treatment." The plan should include the following elements:

- **Antecedent (Stimulus)** (see definition above) You need to indicate the modality of the antecedent and give an example.
- **Behavior (Response)** (see definition above) You need to be very specific about the exact behavior you are targeting.
- **Consequence/Reinforcement** (see definition above) You need to give the schedule and an example of the reinforcement that you will give for a correct AND an incorrect response.
- **Criterion:** You need to indicate any level of performance that will trigger a change in the treatment and whether the treatment will change in a forward direction (the next step in the program) or go backwards (a previous step in the program).

Stakeholders; Consumers (Schwartz):

- **Direct:** The individual receiving treatment (e.g. client, spouse or parent in partner training, peer in peer tutoring.) (Olswang notes, 2004)
- **Indirect:** Purchaser of treatment or person affected by treatment – e.g. family member, physician or teacher who makes referral, even the therapist.
- **Immediate Community:** People who interact with direct or indirect consumer regularly – e.g. teachers, co-workers, grandparents
- **Extended Community:** Members of same community, but do not know consumer

Stimulus (plural = stimuli) or Antecedent: Event that elicits a response. What is done to elicit a specific response. This should include the modality (visual, verbal, or tactile) and whether there is a model (direct, delayed, embedded). Be careful not to confuse the **instructions** for starting a new task with the antecedents that immediately precede (and elicit) each and every behavior. Note that there are several different **stimulus modalities:**

- **Visual stimuli** are when the antecedents are shown, for example a picture or a word, or even a sign made by the clinician.
- **Auditory or verbal stimuli** are when the antecedents are audible, for example a spoken word is both an auditory stimulus and also a verbal stimulus; a beeping sound used in some standardized tests are just auditory stimuli but not verbal ones.
- **Tactile stimuli** are when the antecedents are felt, for example a tongue depressor on the tongue or a hand on the face.

Stimulability: The degree to which you can elicit a correct production with cues and prompts. This is not a measure over time, but during a session of explicit trials. The ability to produce a correct (or improved) production of a target behavior, usually but not necessarily a speech sound. For some clinicians, this term is used only in articulation treatment; in other types of interventions, they may use the term **dynamic assessment** – see above.

Target behavior vs target response: (These terms might be used synonymously)

- **Target behavior:** the general form of communicative act being treated or probed, e.g. <agent + action> in language intervention.
- **Target response:** what a client is expected to say or do after a stimulus for a particular trial, e.g. “girl run”

Treatment target: The behaviors the client is being taught. (Hegde, 1998 p. 306)

Treatment Target selection strategy: How decisions are made regarding targets of intervention.

There are several strategies:

- **Normative strategy:** “A method of selecting target behaviors for clients based on age-based norms.” (Hegde, 1998, p. 303)
- **Client specific strategy:** “A method of selecting target behaviors that are relevant and useful for the individual client.” (Hegde, 1998, p. 299)

Teaching or treatment paradigm: The components of treatment, including specifics about the target behavior, the antecedents, the consequences, the linguistic and environmental context, who is doing the treatment, etc. *Note: this term is most important for understanding probes which Dr. Olswang defines as a “...data gathered ‘outside’ of the teaching paradigm.” In other words, one or more elements have been changed from the way treatment is currently delivered to this individual.*

Treatment structure continuum: There is a continuum of treatment procedures that range from very high structure to very low structure, also called informal or natural procedures.

- **High Structure:** In the purest sense, high structure activities are artificial, “drill-like” treatment in an activity that has no meaningful context, typically working on a small “piece” of speech or language.
- **Hybrid:** Teaching that has elements of high and low structure.
- **Naturalistic (Low Structure):** “Loosely structured treatment that mirrors real-life activities; the clinician manages the antecedents, behaviors and consequences in a planned but less obvious manner to move the client towards objectives.” Teaching that takes place within a meaningful context, involves repeated brief interactions between the clinician and the child, uses natural feedback or consequences. Variations include incidental teaching, Naturalistic time delay, Mand-model and Models and expansions

Treatment Focus: “...who or what the clinician is trying to change.” May be that the focus is on the client, e.g. changing client articulation or language. Or the focus could be on the client’s environment, attempting to change the support for communication from others in the environment.

Trial: *See opportunity vs trial above*

Tokens: “Objects that are earned during treatment and exchanged later for backup reinforcers.” (Hegde, 1998, p. 306). Tokens are never natural reinforcers.

Types of Change (Gottlieb)

- **Facilitation** – environmental conditions (i.e., treatment) trigger change in behavior that would have eventually changed on its own. Typically this refers to an increase in behavior. The end point of change (ultimate performance) is no different than what would have occurred without treatment (i.e., maturation); thus treatment serves to facilitate, trigger, or start a change. Can apply to behaviors that are emerging or not present at the beginning of treatment. (e.g., treatment of morphology to children with SLI)
- **Induction** – environmental conditions (i.e., treatment) bring about change that would not have occurred on its own. Typically this refers to an increase in behavior. Treatment is necessary to reach the end point (ultimate performance); thus treatment serves to teach

- new behaviors/skills that would not otherwise occur. Can apply to behaviors that are emerging or not present at the beginning of treatment. (e.g., AAC treatment; formal treatment of sign language)
- **Maintenance** – environmental conditions (i.e., treatment) preserve behaviors that might otherwise deteriorate. Typically this refers to preventing a decrease in behavior. Treatment is necessary to sustain a desired performance. Without treatment, behaviors would decline over time. (e.g., treatment of individuals with degenerative disease)

Validity/Reliability: Olswang & Bain, 1994, p. 57

- **Validity:** “...the truthfulness of the data...do the data accurately measure the phenomenon of interest.” This requires adequate amounts of data, adequate evidence to demonstrate plausibility
 - **Internal Validity:** “The degree to which obtained results are valid within the context of a particular study... internal validity evaluates the extent to which changes in the dependent variable can be attributed to the independent variable rather than to extraneous variables” such as maturation/history, order or carryover effects, measurement errors of dependent variable, treatment integrity, instrumentation, regression, novelty effects (Schlosser, p. 28)
 - **External Validity:** “...whether a given intervention will be equally effective under different circumstances such as an intervention delivered by other clinicians in other settings [to other clients]” (Schlosser, p. 35). Threats to external validity include differences in the subjects/clients, differences in the treatment or treatment conditions.
- **Reliability:** “...the trustworthiness of the data” as a reflection of what is true for the client rather than what is in the clinician’s mind.
 - With quantitative data: independent observers sample the same data and results are compared.
 - With qualitative data: different sources of data result in the same conclusions. (aka “credibility”)

Variables:

- **Independent variable:** The conditions that are manipulated to produce change, e.g. treatment (Olswang notes, 2004)
- **Dependent variables:** Behaviors that are measured; performance that is monitored. (Olswang notes, 2004)

WHO Model: (Source: WHO web site www.who.int/classification/icf unless otherwise noted)

1. Body Functions and Structures:

- **Body Functions** are physiological functions of body systems (including psychological functions).
- **Body Structures** are anatomical parts of the body such as organs, limbs and their components.

2. Activities and Participation

- **Activity** is the execution of a task or action by an individual.
 - **Activity Limitations** are difficulties an individual may have in executing activities (Source: WHO web site www.who.int/classification/icf) “This dimension deals with the individual’s actual performance in activities of everyday life, daily tasks, asking the question “How does the person actually do the activity?” Performance in these activities may be limited in any of these ways: nature, duration and quality. (Olswang & Bain, 2001, p. 43)
- **Participation** is involvement in a life situation.
 - **Participation Restrictions** are problems an individual may experience in involvement in life situations (WHO web site www.who.int/classification/icf)

“...deals with societal phenomena and represents the consequences of health conditions at the societal level...[in the] context in which the person lives.” Participation in society may be limited in any of these ways: nature, duration and quality. (Olswang & Bain, 2001, p. 43)

3. Environmental Factors

- **Environmental Factors** make up the physical, social and attitudinal environment in which people live and conduct their lives.

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