Positive Reinforcement/ Structured Feedback, Errorless Learning, and Co-Treatment

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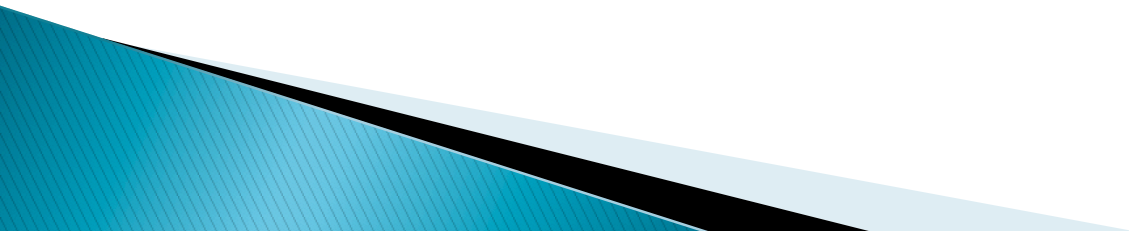# Therapy is both an art and a science

▸ "…that is, interventions/treatments can be

  ◦ Artfully implemented science

    OR

  ◦ Scientifically informed art"

Therapy is both an art and a science

- The SCIENCE part
  - Evidence-based research
  - Good assessment
  - PATIENTS GET BETTER

- The ART part
  - Leadership of a session
  - Choosing treatment activities
  - MAKING IT FUN

Therapy is a team effort

- Team rounds

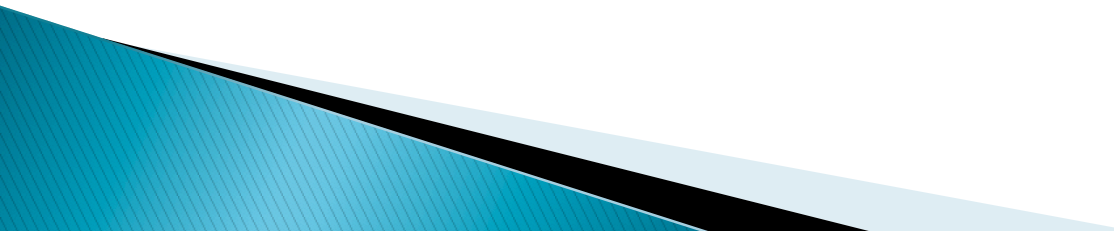- PT, OT, Speech, Vocational Therapy, and Counseling work separately AND together

Therapy teaches skills

- Neuroplasticity: The potential of the nervous system to be modified in response to stimulation and activation and it is experience dependent.

- Therapy following TBI and its ability to teach skills relies on neuroplasticity and behavioral principles.
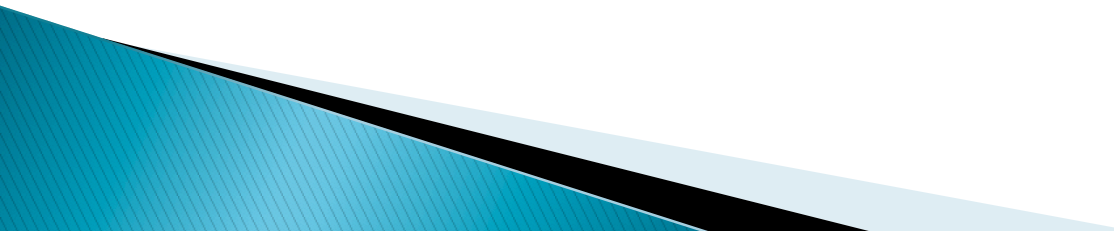
Positive Reinforcement/Structured Feedback

- positive reinforcement: Any event following a response that increases the probability of that response under similar circumstances.

  ◦ Phone rings → Pick up receiver → Friend says "hello"

- negative reinforcement: The operation of removing a stimulus following a response that increases the probability of that response under similar circumstances.

  ◦ Shark fin in water → Swim faster → Reach shore

- structured feedback: Feedback is a response following an event, especially when designed to correct a situation. Structured means there is a specific method to the feedback.

- Using structured feedback
- 1.) Positive general statement
- 2.) Overall performance-specific feedback and praise
- 3.) Review errors in teaching skills
- 4.) Describe how skills should be performed
- 5.) Solicit questions from the patient
- 6.) Preview further training plans as needed
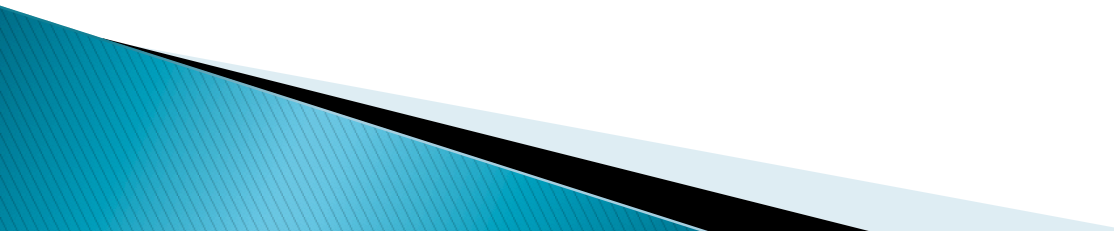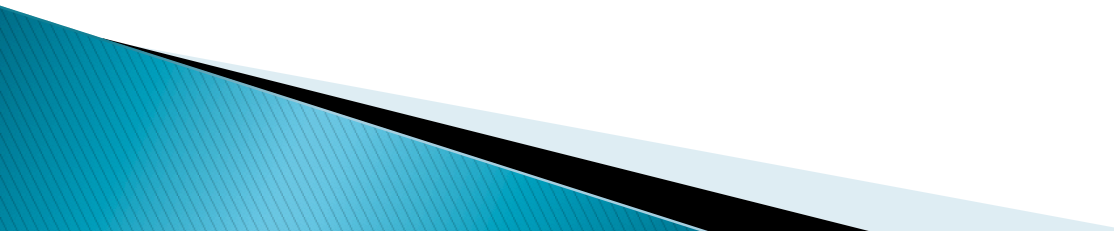- 7.) Complete session with a positive statement

- Shaping: A procedure in which differential reinforcement of successive approximations occurs. The form of an existing response is gradually changed across successive trials toward a desired target behavior by rewarding exact segments of behavior.

- Sidman's Five Pre-Requisites for Learning

- 1.) Safe environment
- 2.) Praise without cueing
- 3.) Who delivers praise
- 4.) Praise for actions following cues
- 5.) Start training

- Create a positive learning environment in therapy by

  ◦ Using mostly positive feedback

  ◦ Choosing activities the patient CAN do

- The therapist should work to set him/herself up as a positive reinforcer for the patient

- The therapist should work to build behavioral momentum

▸ Increasing the Probability of Success

▸ How to teach the skill(s) in question

  1.) Be clear in your instructions and expectations

  2.) Use a hierarchy of cues to teach the skill

  3.) Give the patient structured feedback so that shaping and learning can occur

▸ Being clear

　◦ Give direction slowly

　◦ Allow extra time

　◦ State it in a different way ONLY if you've done the first two first!

▸ Using a hierarchy of cues

Independent

Minimal to Maximal Verbal, Visual, or
Gestural Cues

Total Assist

Min to Max = Ongoing assessment

Max to Min = Errorless Learning

- Using structured feedback
- 1.) Positive general statement
  - "You did a really great job in therapy today, we got a lot done."
- 2.) Overall performance-specific feedback and praise
  - "Nice job following directions."
  - "Good job checking all your work on those math problems."
- 3.) Review errors in teaching skills
  - "I know it's really hard for you not to interrupt when you feel you have something important to say; we'll have to work on that."
- 4.) Describe how skills should be performed
  - "Be sure to keep your feet straight when you're walking."
- 5.) Solicit questions from the patient
- 6.) Preview further training plans as needed
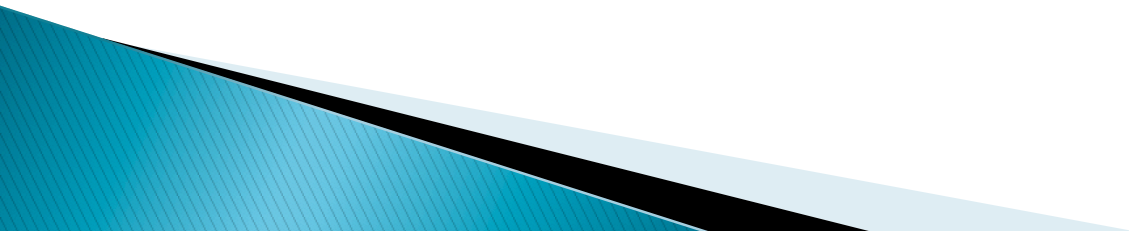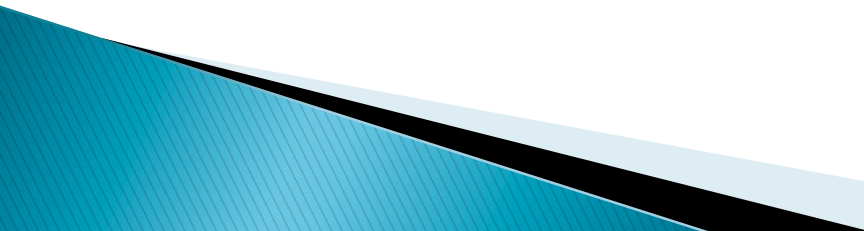- 7.) Complete session with a positive statement

Errorless Learning

▸ NO ONE LIKES TO BE WRONG!!!!

But, don't give your patient the answer.
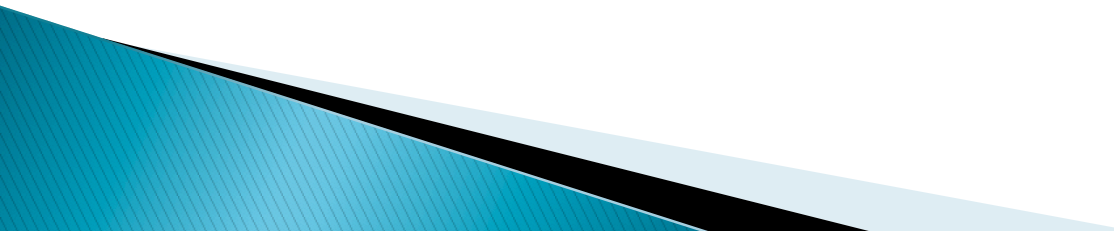
Show the patient how to get there instead.

- B.F. Skinner discussed errorless learning in the 1930s

- Errors are not necessary for learning to occur.
- Errors are a function of:
  - poor analysis of behavior
  - a poorly designed shaping program
  - moving too fast from step to step in the program
  - lack of the prerequisite behavior necessary for success in the program.

- Errorless learning reduces

  ◦ Errors

  ◦ Anxiety

  ◦ Feelings of inadequacy

  ◦ Escape and avoidance

  ◦ Aggression

Errorless learning: A teaching procedure designed by the instructor in such a way that the learner does not make mistakes. It is in contrast with trial and error learning, in which the learner attempts a task without benefit of feedback, whether the attempt was wrong or not.

- Hierarchy of cues is ongoing assessment – min to max cues

- "Error-LESS" learning is just that, no errors – max to min cues

- The trick to implementing errorless approaches in TBI is during assessment

▸ Fading: When stimulus conditions are gradually adjusted and removed while the learned behavior remains intact.

- Backward chaining: Breaking down the steps of a task and teaching them in reverse order.

  ◦ Gives the patient the experience of success

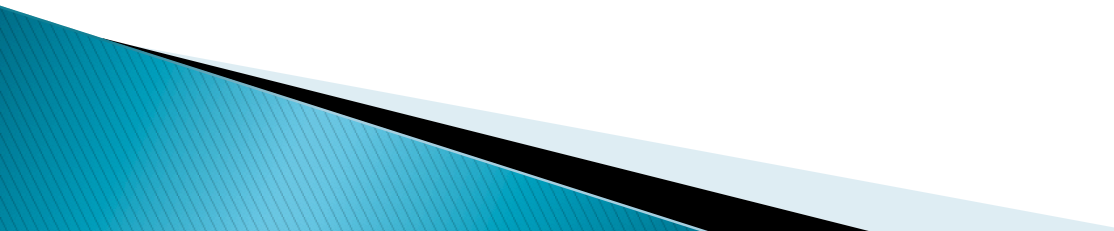 ◦ Therapist fades back as patient is successful

- Errorless techniques work with pigeons, with rats, and with my dog!

- Yes, animal models do teach us a lot about human behavior

- Examples of errorless techniques with people:
  - 1.) Teaching someone to tie shoes
  - 2.) Teaching a kid to ride a bike

- Examples of errorless techniques with people with TBI:

  ◦ 1.) Spaced Retrieval

  ◦ 2.) Correcting a "tic"

Co-Treatment

Co-treatment: When two or more therapists work together with a patient at the same time and approach learning and improvement from his/her own therapeutic perspective.

▸ Co-Treatment has many advantages
  ◦ 1.) Patient can make good progress faster
  ◦ 2.) Positive reinforcement is more constant
  ◦ 3.) Reinforcement is distributed more evenly among therapists
  ◦ 4.) Patient gets practice at different skills at shorter intervals.

Co-Treatment = QUALITY OVER QUANTITY

Possibility of better outcomes

No increase in cost

More time to provide quality therapy to other patients

Not appropriate for every patient, but it can work effectively for the right patient

THE LSNI-W REHABILITATION TEAM

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- Marcia Floom, Community Re-Entry

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