



# Measuring Change in Children who Stutter

Diane C. Games, M.A. CCC-SLP

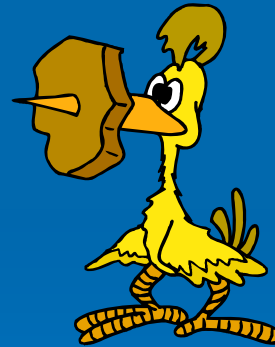
Irving Wollman, M.A. CCC-SLP

# Why Talk about Measuring Change?

- Historically, Tx has been viewed as Linear Model. The SLP is in control in the treatment room. However, results may or may not transfer into other situations.
- Currently, a perspective that accepts and nurtures multiple viewpoints and respects insight and evaluation from all involved appears to be a more satisfactory approach.

# What about Change???

- “The process of getting people unstuck and moving in a better directions may be complex and messy.” (Walt Manning, 2001)



# What should we do???.....

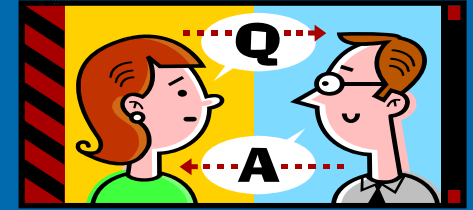
- “Lead from Behind!” SLPs have a clear direction of where treatment is going. However, we cannot control the beliefs of the other person or aspects that affect him.

- Walt Manning, 2001.





# Questions?



- A treatment approach needs to help the child/teen learn “self management” under the direction of the clinician

However, how do we measure such factors?

And, do our treatment choices have measurable outcomes?

- Stuttering is a multidimensional problem & requires a multidimensional approach to treatment.
- The nature and complexity of stuttering requires an approach that allows for variation in treatment and analysis of change or progress at frequent intervals.



# This approach requires that the clinician.....

- Shift from Labeling to Understanding:  
Identify interactive patterns and understand the relevance of a problem within a meaningful communicative context.



# In addition.....

- Shift thinking from behaviors to systems. Move from cause-effect to one that focuses on change within an integrated communication system.



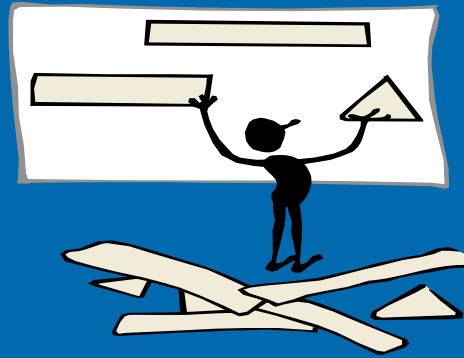
- From the work of David Shapiro, Family Construct Theory, “Stuttering Intervention”, 1999.



But despite a new way of  
thinking.....

The speech language pathologist remains  
key in managing and defining the direction  
of the change!!!

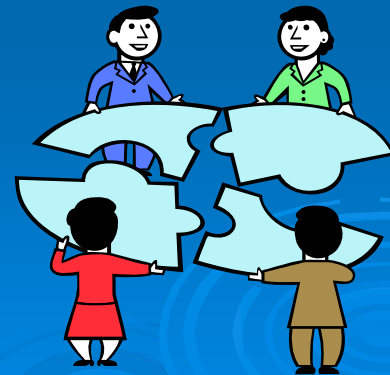




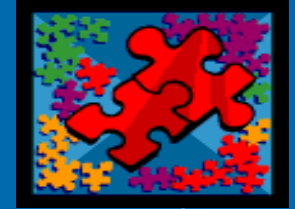
The SLP must manage the various aspects of treatment and make changes as the child matures: physically, mentally and emotionally. Treatment involves problem solving these changes with the child's capacity to meet the demands from the environment.

# Therapy is Problem Solving..

- The client's active involvement in the treatment process includes identifying, reassessing and revising his choices among the alternatives and accepting responsibility for actions.



# Therapy goals target....

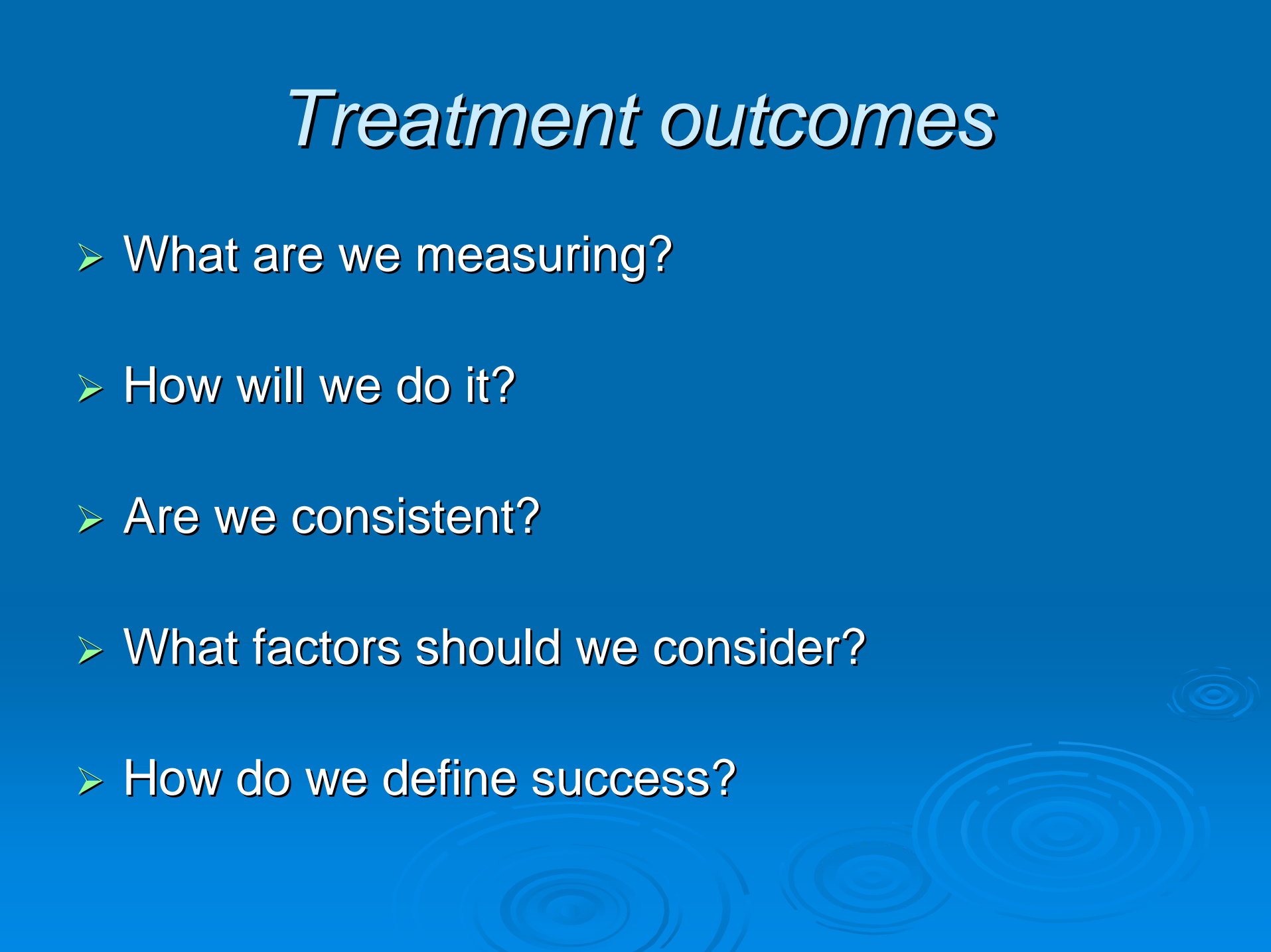


Helping the child understand the current state of affairs: learning about stuttering in general and specifically what happens to him

Guiding the child to choose a course of action from a number of alternatives and setting realistic and challenging goals...

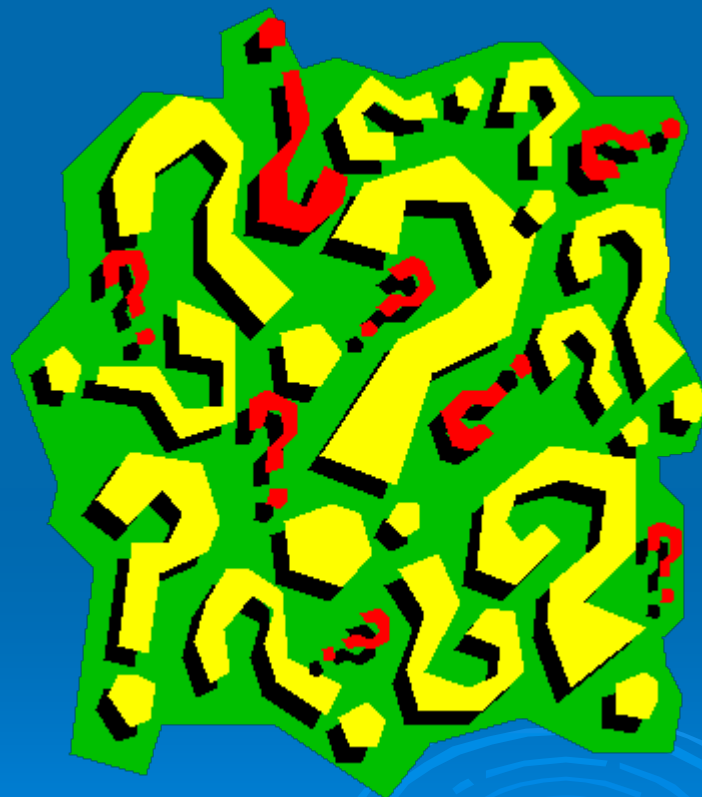
Ultimately bringing the communication under control by taking actions and planning activities that are meaningful for the continuous success of the child...

# *Treatment outcomes*

- What are we measuring?
  - How will we do it?
  - Are we consistent?
  - What factors should we consider?
  - How do we define success?
- 

# What are the client's needs?

- What is his level of fluency under various speaking conditions?
- How does the environment impact his fluency?
- What does he think and how does he feel about his talking?
- How well developed are his overall communication skills?



## *Now we can consider...*

- What the client's goals will be?
- What type of approach will be utilized?
- Who will be involved in the treatment program?
- How will we measure change in **fluency** (increased) as well as **communication** (improved)?

Determine your:  
Goals for increasing fluency

vs.

Goals for improved communication

vs.

Goals that modify attitudes and belief systems

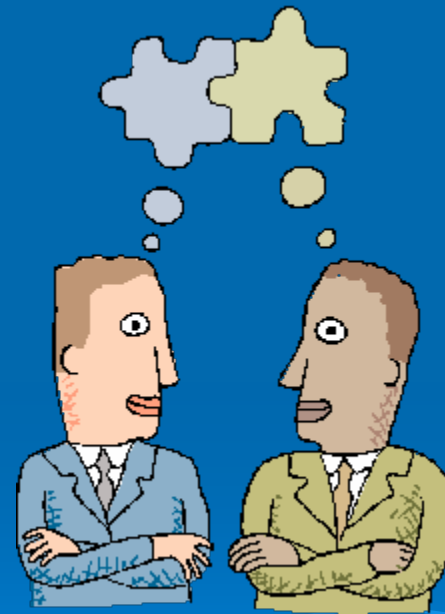
and then...

decide what protocols you will use to  
measure changes in each domain



# Increasing Fluency: Goals

- Specify clearly what your goals will be
- Set them with the child if appropriate
- Plan your treatment to match your goals
- Be flexible to change them as needed
- Share them with the child and his support system
- Understand that your measurements will be a reflection of your goals/expected outcomes



# What's the confusion?

## Maybe our treatment plan doesn't match our goal-orientation

- *Spontaneous fluency*
- *Controlled fluency*
- *Acceptable stuttering*
  
- Fluency goals might be either SF or likely a combination of CF and AC, (\*improved fluency through use of speech techniques) which will typically result in a significant degree of spontaneous fluency as well as some evidence of mild-very mild stuttering.



\*Reardon & Yaruss, 2003

# *Once goals have been determined:*

- The treatment plan can be developed
- Specific targets are determined
- Appropriate measurement protocols are selected to determine the effect of your interventions



# *Some within-clinic measures*

## What?:

- Frequency of stuttering and/or stuttering rate, under specified speaking conditions
- Changes in surface features (blocks---repetitions)
- Changes in associated non-speech behavior (if present)
- Increase in overall speech rate
- Frequency and consistency of modifications: use of target skills in any given task/environment
- Level of engagement over time (amount of talking regardless of stuttering)

## How?:

- On-line, real time analysis
- Videotape analysis
- Audiotape analysis
- Client/clinician judgments (agreement) relative to level of fluency and use of target skills, perceived level of control, and use of speech modifications.

# *Some extra-clinical measures*

- Review self-rating scales relative to level of fluency, use of target skills, level of control and, carryover of specific tasks.
- Taped samples
- Checklists – teachers/parents/others (observations/perceptions relative to both attitudinal components as well as behavioral).



# Numeric measurements

- Counting the number of stuttered words or syllables within a specific sample size - *stuttering frequency*
- Counting the number of stuttered words or syllables within a specific time frame - *stuttering rate*
- Calculating the number of *uncued modifications* the client makes/attempts during that sample or time frame
- Calculating the consistency/number of times the client uses a specific fluency skill (target) during a specified speaking task when cued.

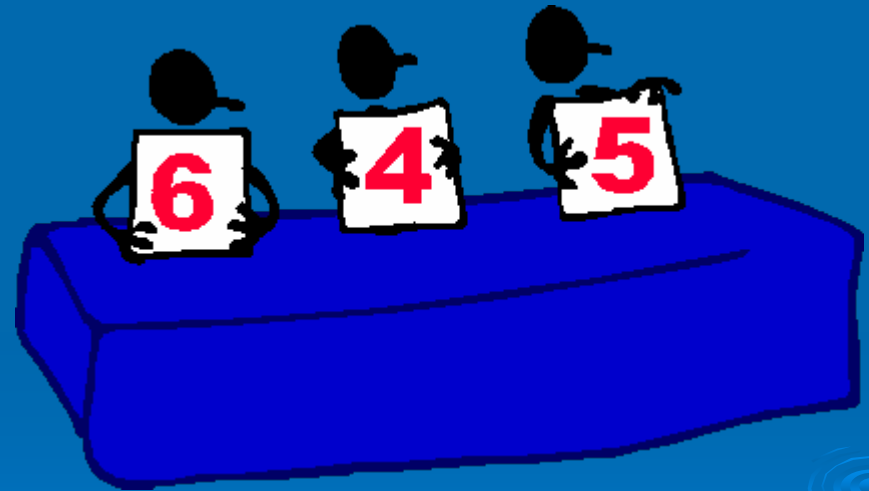
## *Measures impacting communication*

- Counting the number of filler words or avoidance behaviors that are used during a specified sample size
- Measuring overall speech rate



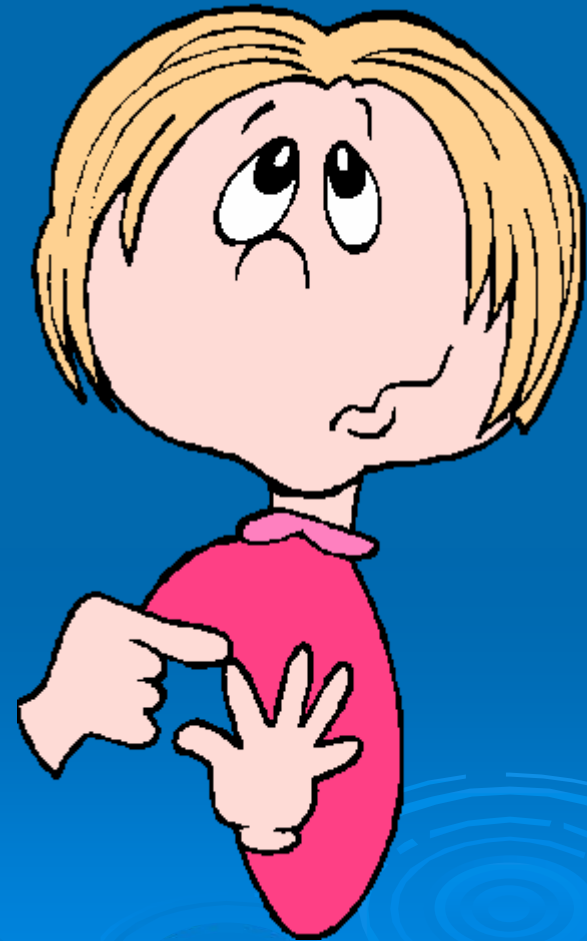
# Severity measurements

- Standardized rating scales (SSI-3; SDA)
- Perceptual rating scales that measure the level of severity after your informant (*parent, teacher, client*) has been trained and has calibrated herself with your judgments on a consistent basis: global measures or specified times (lunch/circle time/dinner)



# Methodology & Reliability

- Frequency/rate calculations
- Real time vs. transcript based
- Methodology: variety of procedures to choose from. Be consistent
- Indicate size of sample or timed length, speaking condition/s and any other situational or environmental variables that are present.
- Reliability





# Modifying Attitudes and Beliefs: Goals

- Determine need. This may not be obvious at time of initial assessment.
- Continue to probe/uncover the presence of any underlying negative attitudes/beliefs on-going during treatment.
- Change or add to the treatment plan as necessary.
- Determine how you will measure change.



# Attitudinal Measurements

## ➤ Formal

- A-19 (Andre & Guitar)
- Scale of Communication Attitudes (S-24 Andrews & Cutler)
- CAT-R (G. Brutton)

## Informal

- CALMS (Cognitive, Affective, Linguistic, Motor, Social)
- ACES (Assessment of Child's Experience of Stuttering)
- Pen and paper tasks Attitudes & Emotions (SFA)

# What are we Measuring when we look at Attitudes & Emotions?

➤ Child's (parents & teachers) viewpoint or assessment of the impact of stuttering including:

.avoidance

.self-esteem

.feelings of control

.impact of stuttering on ability to do what he/she wants to do

.desire to change



# Also.....

- . child-parent-adult dynamic
- . child-peer issue
- . child in routine activities of life  
including school, sports, etc.

# But.....

- Expect a range of attitudes & emotions from the child (and the parent)..
  - . Grief (family based)
  - . Inadequacy
  - . Frustration & Anger
  - . Confusion
  - . Denial
  - . Acceptance



# Our treatment for Attitudes/ Emotions.....

- Identifying the attitudes that may impact transfer.
- Validating emotions concerning communication
- Helping the child discover his/her belief system.
- Planning tx activities that provide discovery
- Re-visiting belief systems regularly.

# Andrew, age 7 years

- Eye twitching and associated movements 12 months ago (age 6)
- Facial grimace, shoulder movements emerged several months later
- Onset of stuttering 2 months ago, with worsening of symptoms within the last month.
- Struggle behavior – escape
- No avoidance of words, situations.
- No open discussion of stuttering or difficulty talking
- No family history
- Birth history unremarkable
- Speech and language history unremarkable
- Motor developmental history unremarkable
- Hearing within the range of normal limits



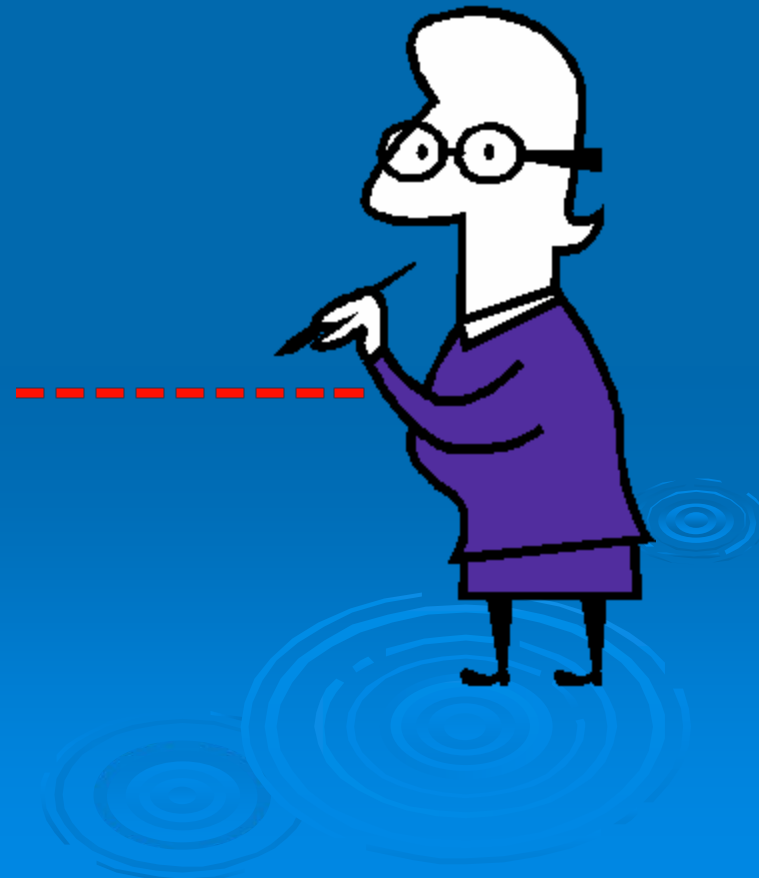
# Test results

- Total fluency failure 43% conversation.
- 28% SLD's (42% were considered fixated)
- Duration range: fleeting - 4.78 sec.
- Iteration range for repetitions: 1-6
- Struggle and forcing
- Overall speech rate: 65 spm
- 26% SLD's during a picture description.
- No obvious signs of negative feelings or attitudes based upon responses given from informal probes.



# Treatment progression and goals:

- Traditional fluency shaping: ERA/SM – Spontaneous fluency
- Operant intervention: Lidcombe Approach – 100% fluent speech in all speaking environments
- Combination fluency shaping and stuttering modification-  
increased level of overall fluency with self-correction of residual stutters as needed



# Time frame

- Traditional fluency shaping – 3 months

ss 29%

- Lidcombe – 9 months

ss 12%, duration of stutters decreasing; more consistent, extended periods of fluent speech; minimal self-correction.

- Combined (FS/SM) – 10 months

smst 1%, on-line self-corrections ~50% in treatment room.



# Measurements utilized

- Frequency counts - percentage of stuttered syllables within and beyond clinic
- Any obvious signs of easier forms of stuttering
- Perceptual severity ratings on a daily basis (family informs)
- Stutters per minute-stuttering rate
- Changes in overall speech rate
- School clinician report of severity on a daily basis.
- Obvious signs of speech modifications within the clinical setting.
- Anecdotal information elicited from the client

# Dominick

- DOB: 8/19/93 10 yrs., 6 months
- Initiated tx in school setting; came to my office March, 2004.
- History: preschool disfluency varied until K, became more consistent.
- Excellent athlete, high intelligence
- Tx at school used Fluency Shaping techniques of breath support, easy speech and light contacts. Progress observed in tx with self monitoring observed.

Initial DX: 23.5 SWM (Pledge)  
19.09 SWM (minute sample)  
31.5% (conversation)

Parent Fluency Analysis Form.

11/3/04 16.38 SWM

11/4/04 19.09 SWM; 11% (conv.)

Notes: Avoids speaking in certain situations and avoids words; uses fillers of “a” and “um” to start speaking; talks of tightness in chest area.

# Dominick cont.

- Attitudes & Emotions

CAT-R (3/08/04) Score: 14

CAT-R (11/4/04) Score: 10

What's True for You (SFA)

My Views on School (SFA)

What Pops? (SFA)

Teacher Forms

Parent Forms

- Situational Domain

- Count Me Out

- . 3/08/04: Ordering in Restaurant  
Giving Directions  
Giving Speech in Class  
Reading Out loud
- . 2/2/05: Ordering in Restaurant  
Telling a story to Mom/Dad  
Talking on the phone

# The Treatment of Speech!!

- Fluency Enhancing & Stuttering Modification (Integrated Approach)
- Stuttering Fingerprint: self analysis of characteristics of D's stuttering-from this strategies are introduced and evaluated.
- These strategies are practiced in treatment sessions and evaluated in a number of speaking situations.



# Treatment for Attitudes & Emotions

- Discussion of feelings during positive speaking tasks & negative tasks.
- Acceptance of feelings.
- Relating feelings to behavior issues..esp. tension.



# Situational Transfer



- Situational Hierarchy-  
Who, What, Where &  
When
- Circle of control-  
expanding the use of  
a strategy into  
situations of  
increasing difficulty
- Self-evaluation of  
results.



# Ongoing Changes

- Handling various speaking situations of Dominick's life...the spelling bee!!
- Periodic data collection from tx tasks and diagnostic measures.
- Collection of information from those in Dominick's life.