

VSM: Video Self-Modeling for Children with Autism/PDD

***Brought to you by: Siskin Children's Institute's
Outreach and Research Center and the Center for Child
and Family Studies.***

Dr. Tom Buggey
Siskin Chair of Excellence in Early
Childhood Special Education
UT-Chattanooga
Siskin Children's Institute

Definitions

- ❖ **Self-Observation:** Viewing oneself performing at present levels – **good, bad, ugly** – e.g. watching game films.
- ❖ **Self-Modeling:** Allowing people to view themselves performing a skill or task that is slightly beyond their present ability. = **All positive.**

Two Forms of Self-Modeling

Dowrick, 1977

- ❖ **Positive Self-Review:** Reinforcing already known skills to improve performance/ fluency.



- √ **Feedforward:** Video of skills not yet learned. Introducing a new skill or behavior.




Two Prerequisites


Maybe

- ❖ **Self-recognition**
- ❖ **Attention to video**





How to Capture Footage for Feedforward Videos

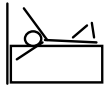
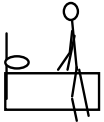
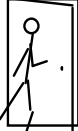
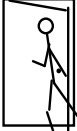


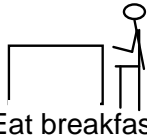
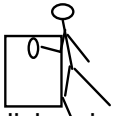







- ❖ **Imitation** – Great for language. Have children imitate advance language skills.
 - ❖ **Role Play** – Fun! Act out behaviors in full Hollywood fashion.
 - √ **Capture Rare Behaviors** –Used with children who are not responsive.
- 

Planning: Storyboarding

- ❖ Identify the target/replacement behavior.
- ❖ Determine best method for capturing the behavior.
- ❖ Determine video scenes.
 - Task-analyze the target or replacement behavior.
 - Each step becomes a scene.

Sample Storyboard

Morning Routine

<p>Scene 1 - bedroom</p>  <p>Wake up</p>  <p>Make bed</p>	<p>Scene 2 - bathroom</p> <p>bathroom time</p>  <p>"Time to go to the bathroom"</p>  <p>"I have to get dressed now"</p>	<p>Scene 3 - bedroom</p>  <p>Dressing = pull shirt down</p>  <p>"There. Now downstairs."</p>
<p>Scene 4 - kitchen</p>  <p>Eat breakfast</p>  <p>Put dishes in dishwasher</p>  <p>Feed dog</p>  <p>Back upstairs</p>	<p>Scene 5 - bathroom</p>  <p>Brush teeth</p>  <p>Back downstairs</p>	<p>Scene 6 - kitchen</p>  <p>Get books, backpack and jacket</p>  <p>Hugs goodbye</p>  <p>Out to catch the bus</p>

Editing:

VCR to Camcorder Arrangement

- ❖ Make a copy of the original tape and save it. Do all editing from the copy.
 - ❖ Edit out all occurrences of children's errors. Use only best examples.
1. Plug camcorder into VCR. Push "record" then "pause" on VCR. (Leave 5-10 seconds on the front end if you want to record a lead-in: See below.)
 2. Push "play" on the camcorder and watch the video. When you see a behavior you want to capture, rewind to just before the part you want to record. Press "play" on the camcorder and release "pause" on the VCR. When the scene is complete, press "pause" on the VCR once more and search for the next scene on the camera. Keep repeating this process until you have the desired 2-3 minute tape.
 3. If you want to add an intro and ending (recommended), you can just state the behavior ("Let's listen to John talking nicely!") while covering the lens. Add this to the front of the tape as above. You can also prepare a poster stating the behavior and/or praising the observer, e.g. "John is a Super Star!" "Here's John talking nicely!!" Just talk while taping the poster.

*It is very important to use **"pause" instead of "stop."** This will give you smooth transitions. If you press stop, it creates a second or so of static between segments.

Camcorder to Computer



iMovie

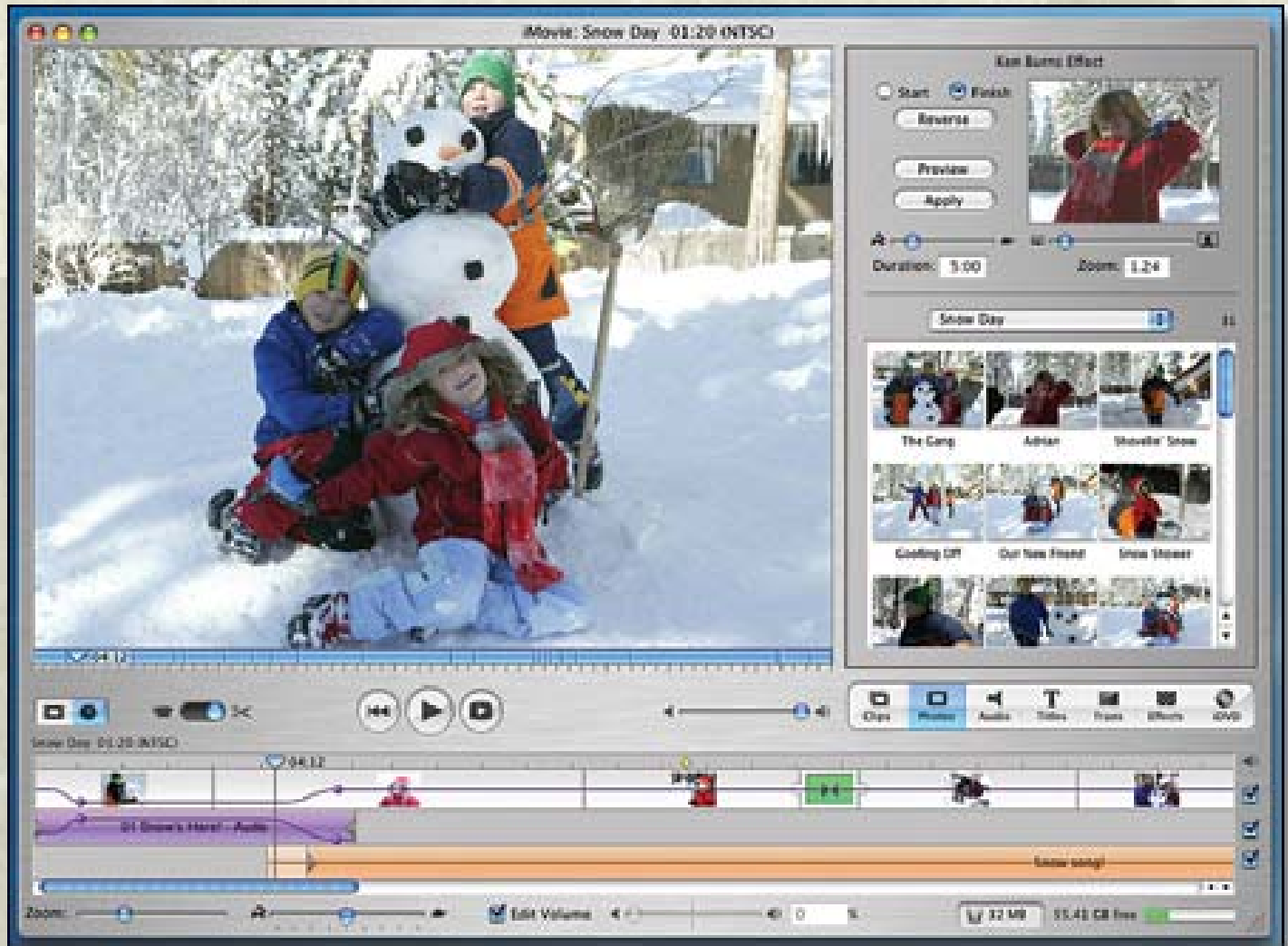


iMovie HD



MovieMaker

Editing is now just download, cut and paste, & click and drag.



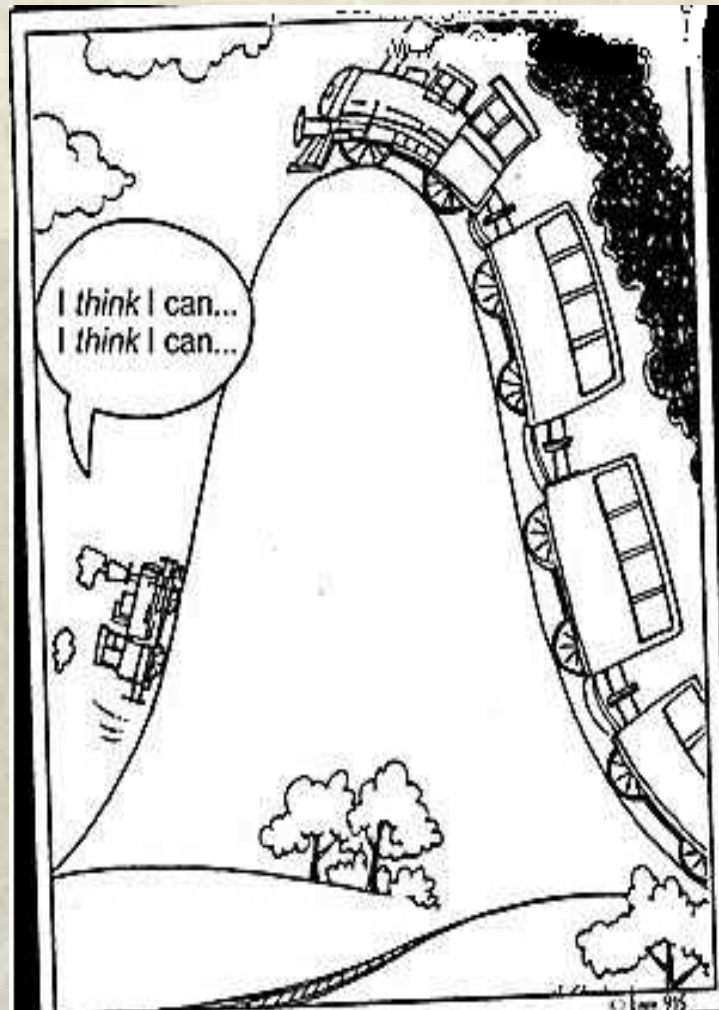
VSM - Autism

Why VSM?

Albert Bandura's modeling research:

- ❖ Most effective peers are those closest to attributes and abilities of observer - including ability (Bandura).
- ❖ **Self-Efficacy** = If you think you can, you are more likely to succeed

Bandura- self-efficacy



I know I can: I saw myself do it.

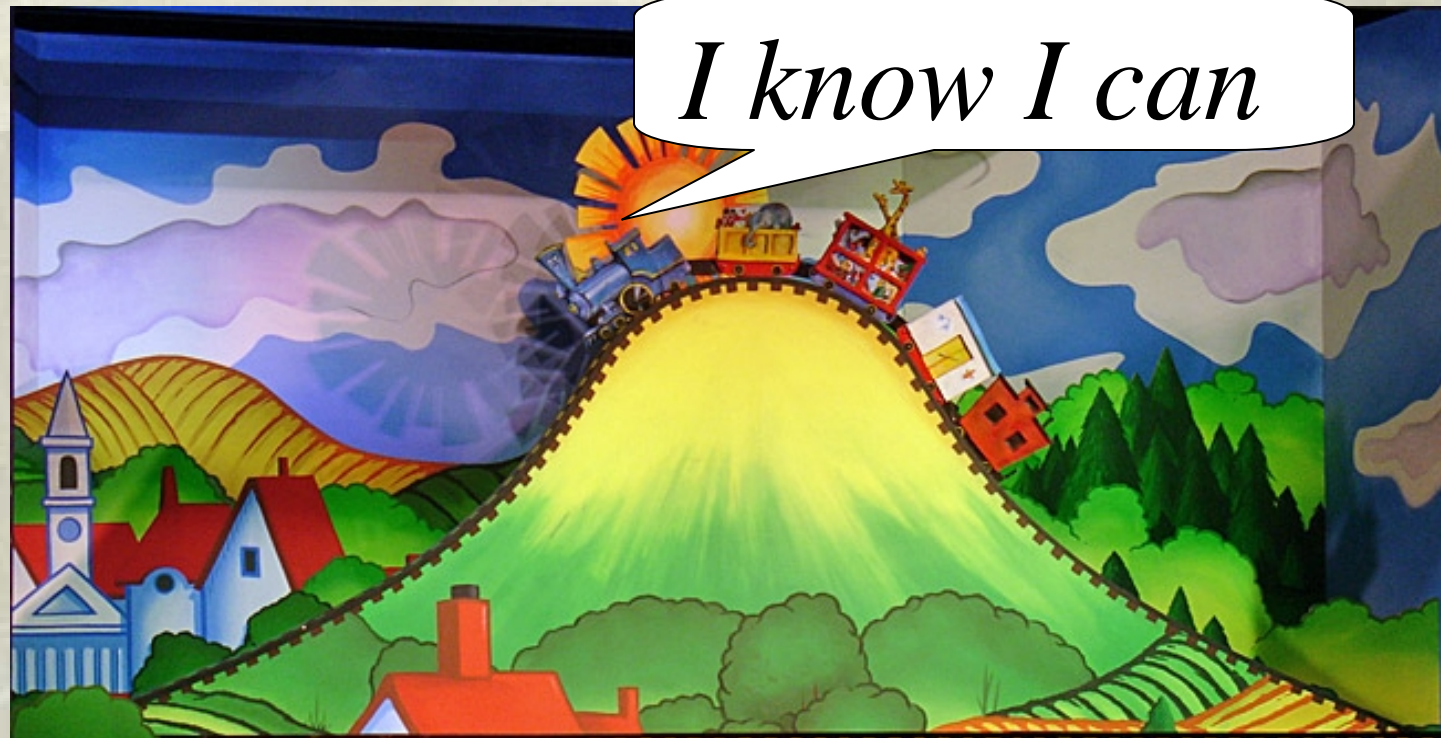
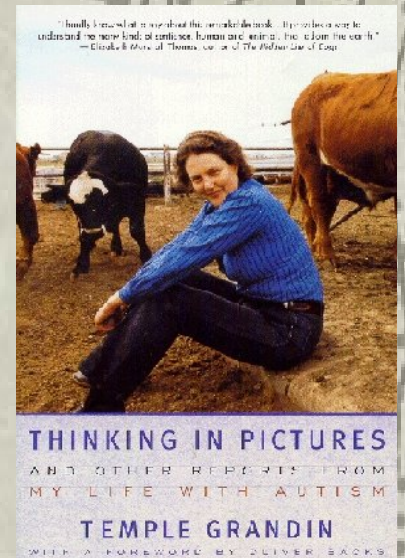


Photo: Dollywood

“I THINK IN PICTURES. Words are like a second language to me. I translate both spoken and written words into full-color movies, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures. Language-based thinkers often find this phenomenon difficult to understand, but in my job as an equipment designer for the livestock industry, visual thinking is a tremendous advantage. Visual thinking has enabled me to build entire systems in my imagination.”

Temple Grandin - from *Thinking in Pictures*



Why so effective with children with PDD?

Bandura - Self-Efficacy = I know I can.

Bandura - The best models are those most similar to the viewer in all attributes.

No Social Obligations.

Limits distractions.

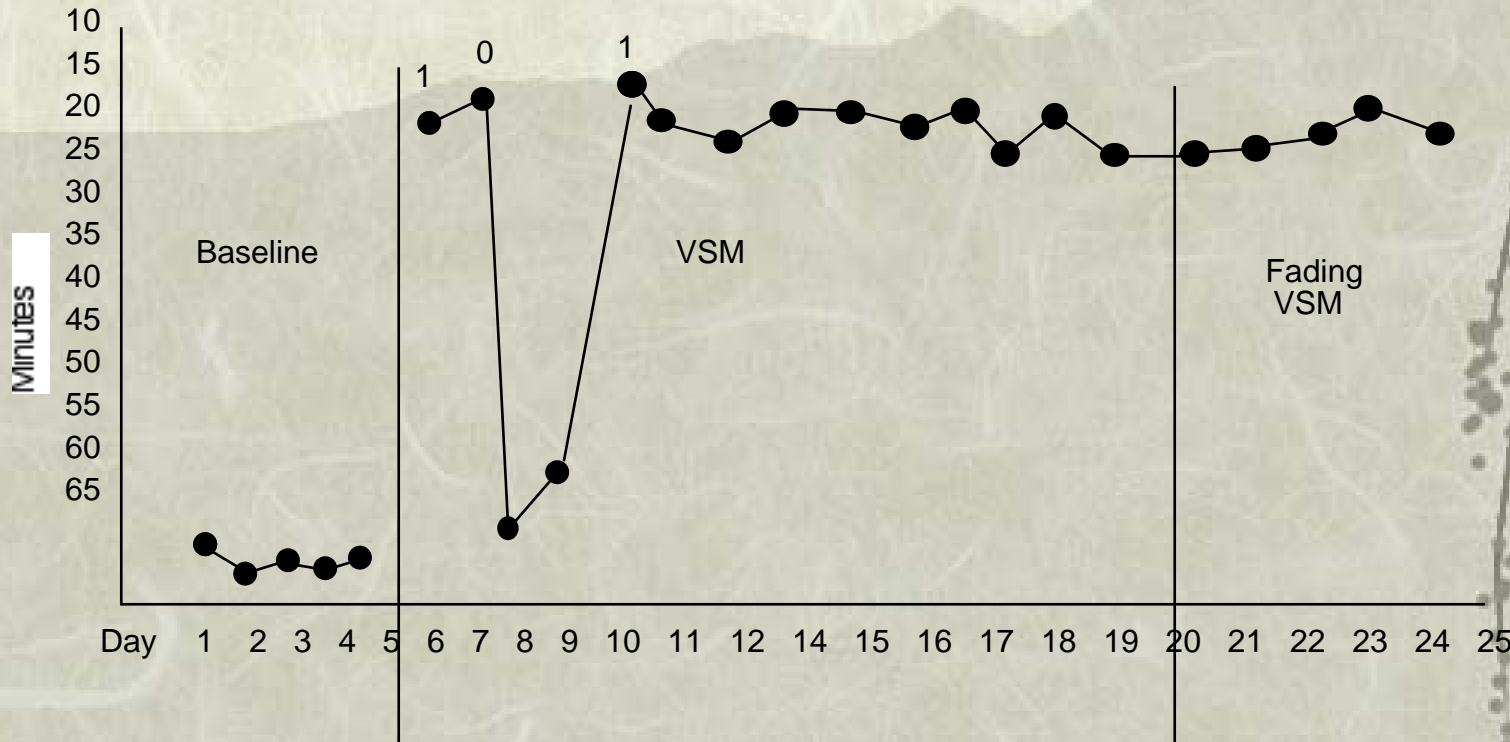


Grandin - "When people talk to me I convert their words to pictures."

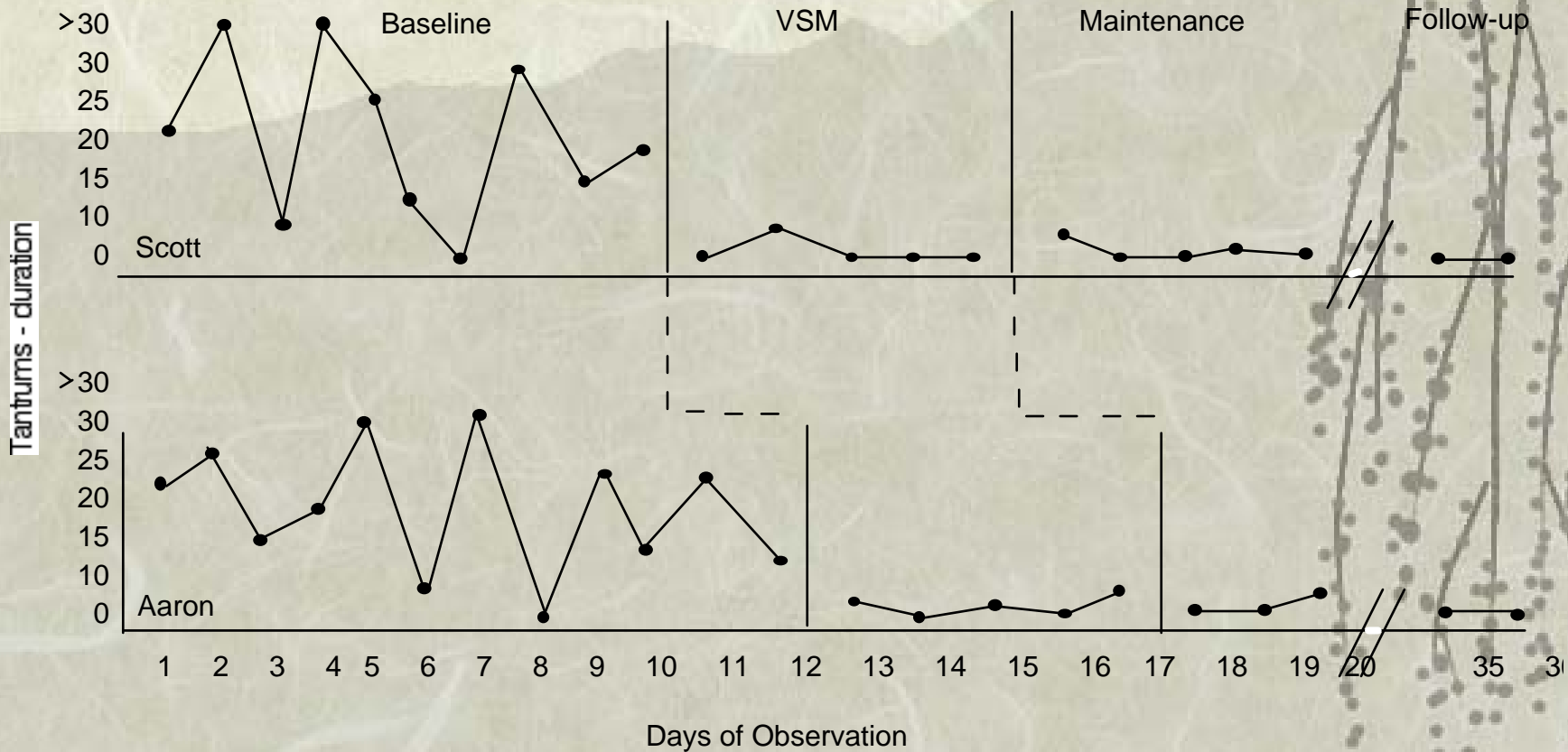
Kehle – Not only does VSM supply new memories, it also seems to supplant old ones.

Sometimes: a bit of “magic”

Time getting ready for school

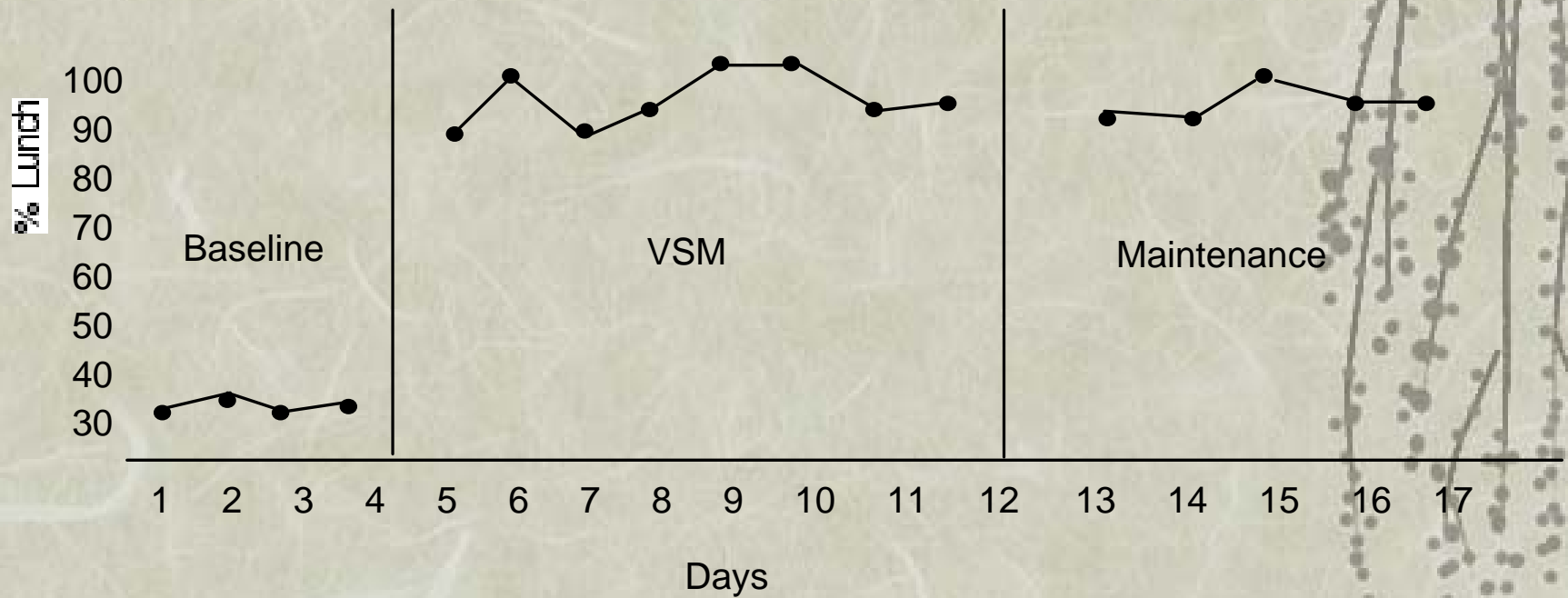


Tantrums: Eight-year-olds with Asperger's



Eating lunch: Six-year-old with moderate autism

David



2008 Studies

Participants: Four 4-year-olds on the Autism Spectrum who did not respond to “buddy system” and Social Stories interventions the previous semester.

Target behaviors (dependent variables):

Study 1:

Social interaction with peers

Study 2:

Social interaction with peers

Verbal Responding

Verbal Initiations

Mean Length of Utterance

Method

Setting

Siskin Children's Institute – Chattanooga, TN

Study 1:

Playground: Data
collection &
videotaping

Teachers' offices:
showing videos



Method

Setting

Siskin Children's Institute

Study 2:

Living room style room

set up as play area:

Data collection

Teachers' offices:

Showing videos



Design

Study 1:

Multiple-baseline
across 4 children.

Study 2:

Multiple-baseline
across 3 behaviors.

Videotaping

Peers were used in both movies as “co-stars.”

Study 1:

- ❖ One or two peers were coached and prompted to interact.
- ❖ Footage was taken during transitions to the playground.
- ❖ Footage taken during arranged sessions when others were not using the playground.



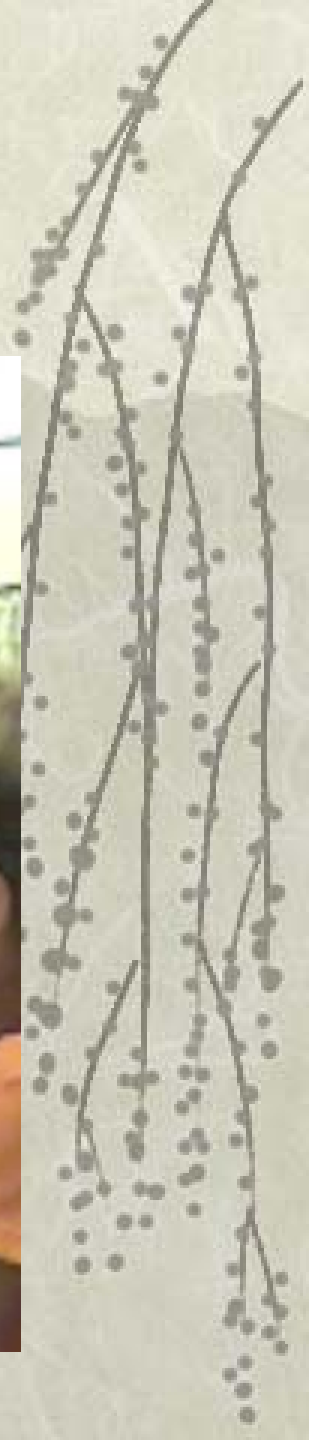
Videotaping

Peers were used in both movies as “co-stars.”

Study 2:

- ❖ Participant prompted to imitate words and phrases.
- ❖ Peers prompted to ask questions.
- ❖ All of this caught on film.

Verbal Initiation Video



Editing

Editing of videos for both studies done
with iMovie®

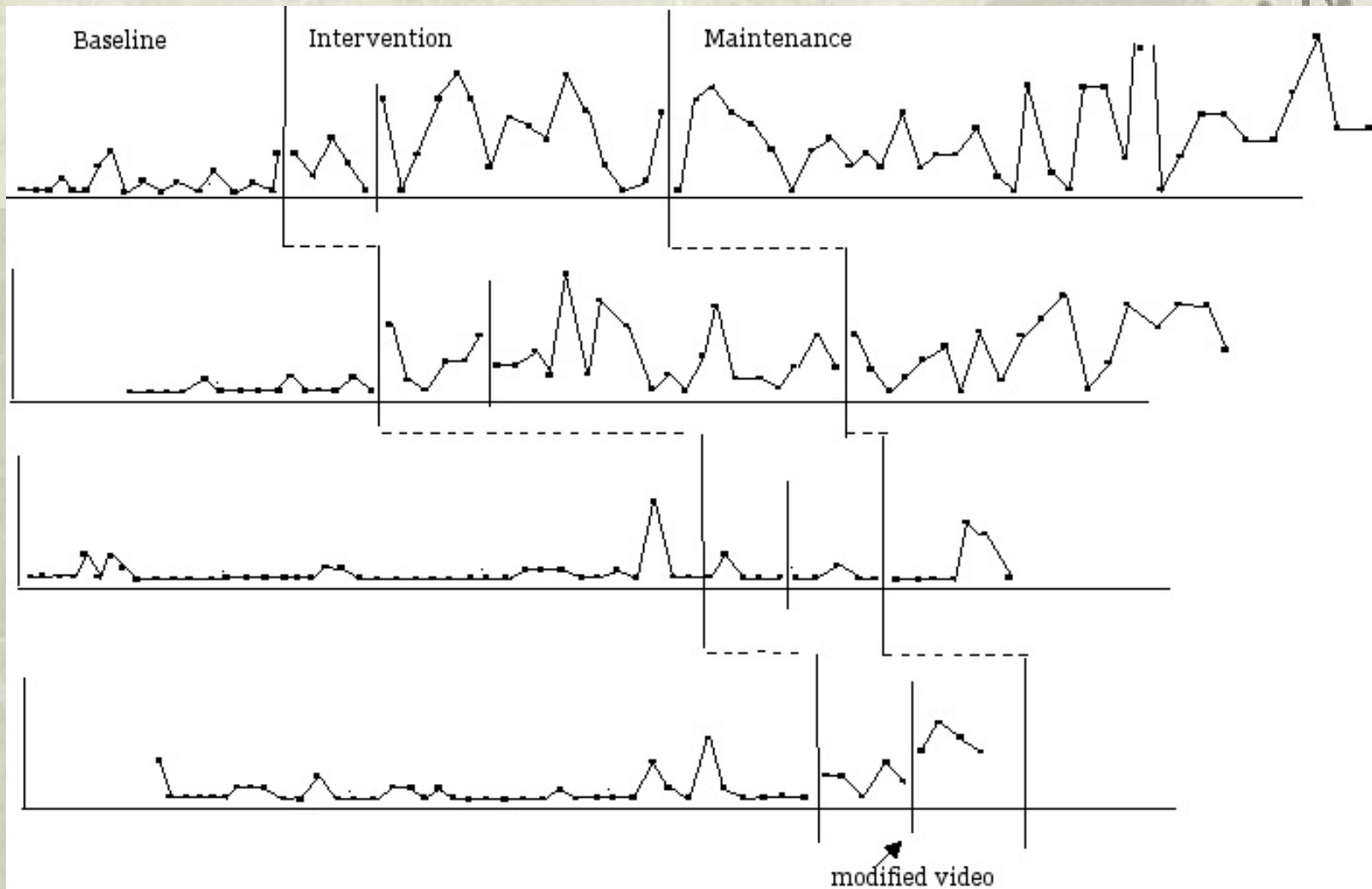


Results: Study 1

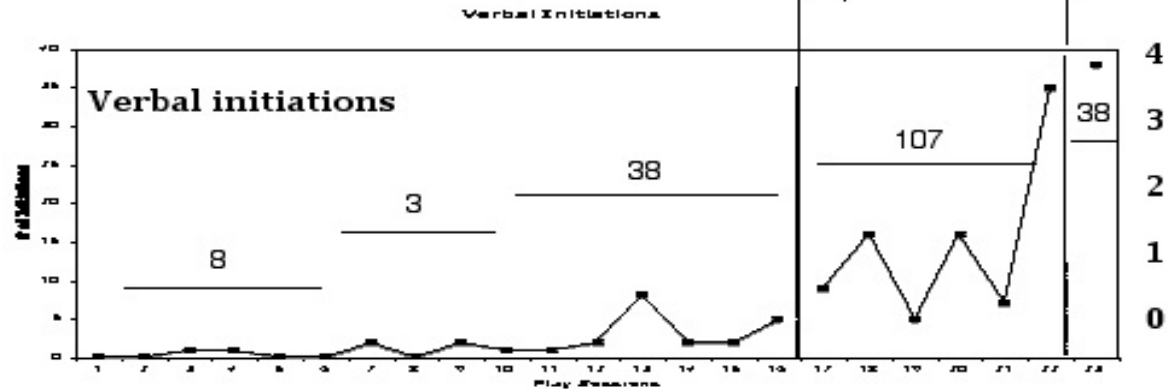
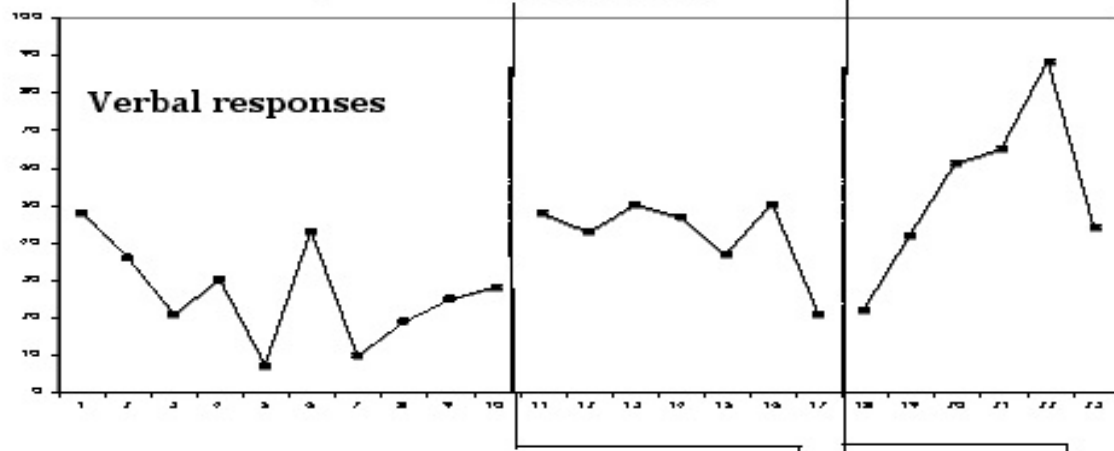
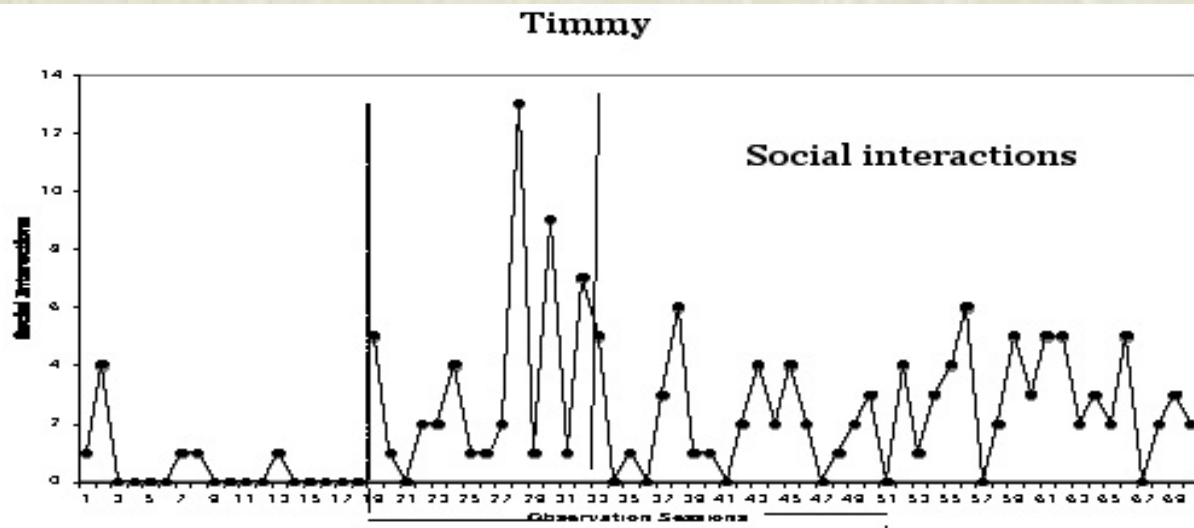
- ❖ Good gains for Lucy, Helen, and Timmy along.
- ❖ Parallel changes in other social behaviors (e.g. interacting with adults, verbalizing, increased range on the playground, abandoning his automobile).
- ❖ Imitation of video scenes.
- ❖ What about John???

Results: Study 1

Increases in social behavior



Results: Study 2



Qualitative Information

- ❖ Child 1 & Child 2 had radical changes in behavior noted by researchers, family, and teachers: “Who is that girl?”
- ❖ All children maintained their ritualistic/obsessive behaviors, but they were less (except for Child 3). Child 2 showed the most change in overall behavior.
- ❖ Interactions, including verbal initiations with adults, increased.
- ❖ Hovering occurred around children and adults. Difficulty with initiations.

Qualitative Information

- ❖ All four children enjoyed watching the videos and appeared to self-recognize.



Threats to validity

- ❖ Four-year olds: maturation (although baseline consistent for one year)
- ❖ New teachers
- ❖ Parents knowledge of study
- ❖ Halo effect - wanting to please researchers
- ❖ Effects did not repeat across all

Unanswered questions and next steps

- ❖ How young can we go?
- ❖ How does the spectrum of autism influence results?
- ❖ Can VSM have greater impact when paired with other methods? Or, can VSM enhance other methods?
- ❖ Why not John?

Possible Applications

- ❖ Attention Disorders
- ❖ Depression
- ❖ Aggressive / disruptive behaviors
- ❖ Stuttering
- ❖ Elective Mutism
- ❖ Responding behaviors - Students with autism
- ❖ Motor Problems - “Shirley”
- ❖ Language development
- ❖ Social Interaction - Initiations
- ❖ Cognitive skill training
- ❖ Parenting skills
- ❖ Literacy - phonemic awareness/letter recognition



T's Social Video





References

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bellini, S. & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. *Exceptional Children*.
- Bellini, S., Akullian, J., & Hopf, A. (2007). Increasing social engagement in young children with autism spectrum disorders using video self-modeling. *School Psychology Review*.
- Buggey, T. (1995). An examination of the effectiveness of videotaped self-modeling in teaching specific linguistic structures to preschoolers. *Topics in Early Childhood Special Education*, 15, 434–458.
- Buggey, T. (2005). Applications of video self-modeling with children with autism in a small private school. *Focus on Autism and Other Developmental Disabilities*, 20, 180–204.
- Buggey, T., Toombs, K., Gardner, P., & Cerveti, M. (1999). Self-modeling as a technique to train response behaviors in children with autism. *Journal of Positive Behavior Interventions*, 1, 205–214.
- Dowrick, P. W. (1983). Self-modeling. In P. W. Dowrick & J. Biggs (Eds.), *Using video: Psychological and social applications* (pp. 105–124). New York: Wiley.
- Hitchcock, C., Prater, M. A., & Dowrick, P. (2004). Reading fluency and comprehension: The effects of tutoring and video self-modeling on first grade students with reading difficulties. *Learning Disability Quarterly*, 27, 89–103.

References

- Kehle, T. J., Bray, M. A., Margiano, S., Theodore, L. A., & Zhou, Z. (2002). Self-modeling as an effective intervention for students with serious emotional disturbance: Are we modifying children's memories? *Psychology in the Schools*, 39, 203–207.
- Wert, B. Y., & Neisworth, J. T. (2003). Effects of video self-modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior Interventions*, 5, 300–305.
- Woltersdorf, M. A. (1992). Videotape self-modeling in the treatment of attention-deficit hyperactivity disorder. *Child & Family Behavior Therapy*, 14, 53–73.

T's Signing Video



Hannah's Social Video

