Video Modeling and Social Skills Training for Students with ASD in the Schools and Beyond

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Disclosure

- Dr. Hewitt teaches, presents and publishes on autism spectrum disorders; she is a faculty member and administrator at Bowling Green State University and has supervised graduate clinicians in the Speech & Hearing Clinic for clients with ASD. She has received compensation from NSSHLA Chico State as well as reimbursement for travel expenses for giving this presentation. She has no other financial or non-financial disclosures to make.

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Agenda

- **9-10 A.M.**
- **Roots of social pragmatic impairments in ASD**
  - Neurological underpinnings
  - Cognitive consequences
  - Co-morbid disorders
- **10-11 A.M.**
- **Types of problems and considerations for assessment/baselining**
  - School age children
    - Case example
  - Adolescents
    - Case example
  - Adults
    - Case example
- **11-12 A.M.**
- **Interventions and supports for social communication**
  - School age children
    - Case example
  - Adolescents
    - Case example
  - Adults
    - Case example
- **1-2 P.M.**
- **Visual approaches to learning and self-regulation**
  - Why visual. Complex information processing in ASD.
  - Static approaches, visual schedules, etc.
  - Dynamic-video-based
    - Video modeling
    - Video self-modeling
- **2-3 P.M.**
- **Evidence base for video modeling**
  - Sources of ready-made materials
- **3-4 P.M.**
- **Creating your own video models.**
- **Q & A**

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Understanding ASD

- A spectrum
- Likelihood of multiple causes
- Co-morbid conditions
- "autisms" not "autism" ?

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Diagnosing Autism in the U.S., DSM-V: (June 2013**)**

- *Diagnostic & Statistical Manual of Mental Disorders*, fifth edition. American Psychiatric Society.
- Major changes from older editions
  - Helps bring clinical dx in line with current research
  - Helps bring consistency to diagnostic practice
  - Somewhat more in line with the International Classification of Diseases used by most countries (ICD-10)
- Useful summary available here:
  - https://www.autismspeaks.org/what-autism/diagnosis/dsm-5-diagnostic-criteria

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Two core impairments needed for diagnosis of ASD

- 1. Persistent deficits in social communication and interaction
  - Deficits in social-emotional reciprocity
  - Deficits in non-verbal communicative behavior for social interaction
    - Gestures, facial expression, gaze
  - Deficits in developing, maintaining, understanding relationships

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DSM-V core impairments, cont

- 2. Restricted, repetitive patterns of behavior
  - Stereotyped or repetitive motor movements, use of objects, or speech
  - Insistence on sameness, inflexible adherence to routines or ritualized patterns of verbal or non-verbal behavior
  - Highly restricted fixated interests, abnormal in intensity or focus
  - Hyper- or hypo-reactivty to sensory input, or unusual sensory interest

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Other considerations

- Must result in functional limitations
- Must occur during early developmental period
- Should not be better explained by intellectual disability
  - If intellectual disability suspected, must confirm that social communication ability below expectations for level of functioning

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Levels of severity used in DSM-5

- Level 3 Requiring very substantial support
- Level 2 Requiring substantial support
- Level 1 Requiring support

See DSM-V ASD summary at:
   https://www.autismspeaks.org/what-autism/diagnosis/dsm-5-diagnostic-criteria

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Considerations in diagnosis

- Individuals without restrictive/repetitive behaviors may fall under social pragmatic communication disorder
  - NOTE: this dx falls within our scope of practice
  - Not widely used/well understood as yet

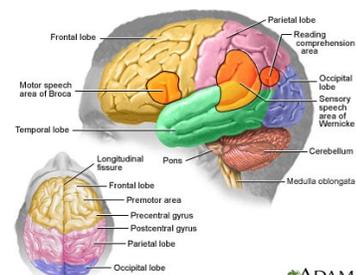Hewitt March 2016   11

Thought Experiment

- Imagine you are invited to a party.
  - You don't know anyone
  - You are not sure what is going to happen or what is expected of guests
  - You are unsure when it begins and ends
- You get up your courage and go anyway
  - The social expectations are completely confusing
    - You can't figure out how to talk to people—who is open and who is busy
  - It's really loud so it's hard to hear and understand anything that is said
  - There is a disco light set up so it's hard to see people's faces
  - The temperature is uncomfortable, and it's crowded
  - There is nothing you like to eat or drink
  - There are no activities you like to do
  - Some people get upset with you for not doing what's expected
  - So you get upset --no one told you what was expected and no one is helping you find out
    - They think you should just know, but that is impossible.

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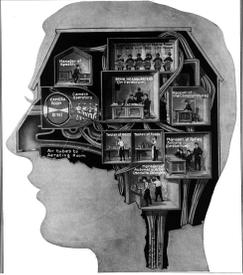
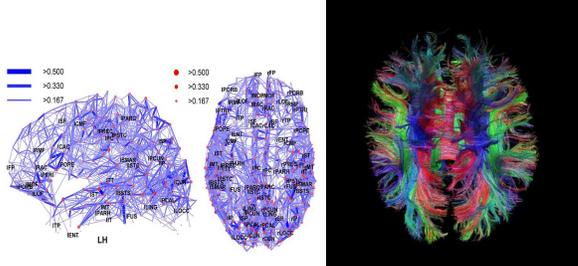## How we are used to thinking of the brain

http://www.biausa.org/living-with-brain-injury.htm

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Issues in studying the brain

- Naïve localizationism

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How we need to start thinking about the brain

>0.500
>0.330
>0.167

>0.500
>0.330
>0.167

http://commons.wiki me dia .o rg/wi ki/ File: Net wor k_re pr e sentation_of b rai n_c on ne ctivity. JPG

http://www.semel.u cla. ed u/ bdd an or exi a/r ese ar ch' p visual-functional- co nn ectivi ty

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Neurobiology of ASD

❖ASD is now well understood to be disorder of neurobiology
  ❖Increased risk of seizures
  ❖Co-morbidity with other disorders
    ❖ADD, ADHD
    ❖Anxiety
    ❖Depression
    ❖Obsessive-compulsive disorder
    ❖Other psychiatric disorders
      ❖ E.g., Tourette syndrome

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Advances in neuroscience for ASD

- Widespread brain differences
  – The landscape of the brain is different everywhere one looks

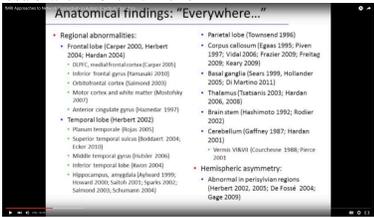Hewitt   March 2016   17

What do we know about the brains of persons with autism?

- Obvious lesions not present
- Adult brain size usually within average range
  - Poss. macrocephaly in childhood
- Subtle abnormalities widespread throughout brain
  - Amygdala
  - Cerebellum
  - Frontal lobe

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Research on brain structures & connectivity in ASD

- https://www.youtube.com/watch?v=BdMmPXgTGhc
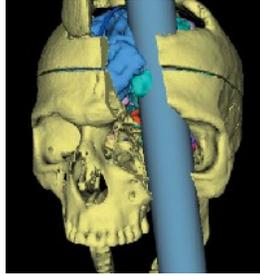 – Slide minute 3:54 on structures that are anomalous in the brains of individuals with ASD. R. Muller

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Issues in studying the brain

- Pitfalls in applying knowledge from *acquired* to *developmental* disorders
  - Development matters!
  - Sometimes lesions shed light
    - Phineas Gage

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Recent breakthroughs

- Problem is not one system but connection between systems
  - Brain as an emergent system
    - Dendritic growth and pruning
    - Adult brain structure arises from gene-environmental input interaction
      - Structural differences in brains raised in deprived environments
    - Plasticity

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One example of long-distance connectivity problems

- Courchesne and colleagues
  - Many papers showing cerebellar anomalies
    - What does cerebellum do?
    - Motor planning, learning, execution
      - How could that relate to features of autism?
  - Logically, seems that frontal lobe must be involved
    - Findings
      - Abnormal connections between frontal lobe and cerebellum
      - Abnormal rate of brain growth in early life
        - Primarily attributable to frontal lobe
      - Abnormal structure of frontal lobe neurons

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Quote from Courchesne & Pierce (2005)

Maldevelopment on this scale, therefore, very likely reflects substantial defects ranging from neuronal numbers to molecular function and local and long-distance connectivity. The recognition of this process as *ongoing* and massive reminds that autism is indeed a disorder of the develop*ing* brain. In the developing brain, the neural structural and functional landscape is created where none existed before, and so when aspects of this process go substantially awry, we should expect to see a differently detailed landscape (connectivity, molecular expression, etc.) and not simply a largely normal landscape with perhaps just one or two specific features precisely and conveniently omitted or changed.

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Brain overgrowth in autism during a critical time in development: implications for frontal pyramidal neuron and interneuron development and connectivity

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Minshew & Williams (2007)

- Review of research in neurobiology
- Key issues
  - Polygenetic disorder

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Minshew & Williams, cont.

- Systems affected in autism
  - Not focal (localized)
  - "Distributed neural systems abnormality"
- Head growth abnormalities
  - Increase in white and grey matter
    - Not just neural connectivity issue
      - Minicolumn abnormalities

Minshew & Williams

- Problems with inhibition, excitation
  - Reduced boundaries between minicolumns
- Gray and white matter both involved in ASD
  - Gray matter: neuronal cell bodies
  - White matter: myelinated axons (and glial cells)

Minshew & Williams, cont.

- Decreased interhemispheric connectivity
  - Reduced size of corpus callosum
- Abnormal intrahemispheric connectivity

Minshew & Williams, cont.

- FMRI findings
  - Atypical timing, patterns of activation
    - Language tasks
    - Working memory
    - Problem solving
    - Social Cognition

Minshew & Williams, cont.

- Sensory differences
  - New brain findings indicate sensory processing differences core to ASD
    - "…autism had a far broader impact on the brain than was originally conceptualized." (p. 949)

Recent work in neuroimaging

- Eigsti et al. (2016) investigated language processing using FMRI, in 3 groups:
  - Optimal Outcome children and adults with ASD (OO)
  - High functioning autism (HFA)
  - Typical peers (TD)
- Findings:
  - OO and HFA showed similar patterns of processing
  - OO also showed more effortful processing than HFA

Eigsti et al., cont.

- Implications:
  - Individuals with ASD use different strategies to process language
    - Even –and especially!--when apparently indistinguishable from NT peers
    -

Reference:

Eigsti, I-M, Stevens, M., Schultz, R., Barton, M., Kelley, E., Naigles, L., Orinstein, A., Troyb, E., and Fein, D. (2016). Language comprehension and brain function in individuals with an optimal outcome from autism. *Neuroimage: Clinical, 10*, 182-191.

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Caution on neuroscience

"It should be kept in mind that despite the rapid technical advances in the field, MRI techniques remain limited to a level of spatial and temporal resolution too coarse to visualize the synaptic or neuronal-level abnormalities that may be core features of disorders such as ASD. If this is the level from which heterogeneity arises, neuroimaging may ultimately not be the best tool for parsing these differences."

Lenroot, R. K., & Yeung, P. K. (2013). Heterogeneity within autism spectrum disorders: what have we learned from neuroimaging studies?. *Frontiers in Human Neuroscience, 7,* 733.

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"The brains of humans are therefore meant to make meaning out of their surrounding environment. Unfortunately, in certain conditions, like autism, this capacity for contrast appears diminished."

Available at:
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3384515/

Casanova, M. F. (2010). Cortical organization: a description and interpretation of anatomical findings based on systems theory. *Translational Neuroscience, 1*(1), 62–71. http://doi.org/10.2478/v10134-010-0002-2

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Putting it all together

- Social communication and social cognition require
  - Rapid decision-making
    - In complex environments
  - Facial processing abilities, recognizing emotions, etc.
  - Language
  - Ability to filter out irrelevant information
  - Ability to hold (at least) two separate views at once:
    - Own view
    - Communicative partner's view

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Cognitive issues

- Theory of mind
- Executive functioning
- Impairment in central coherence
- Attention deficit disorder
- Intellectual disabilities
- Learning disabilities

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Other co-morbidities

- Depression
- Anxiety
- Obsessive-compulsive disorder
- Bipolar disorder

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Other factors

- Sleep problems
  - https://www.disabilityscoop.com/2016/02/18/autism-behavior-poor-sleep/21930/
- Other co-morbid physical problems
  - Food aversions, intolerances
  - http://www.sciencedirect.com/science/article/pii/S0882596313000961
  - Increased rates of seizure disorders

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Sensory issues

- Part of core symptomatology
  - Hyper-responsiveness
  - Hypo-responsiveness
  - May both be present in same individual
  - Relate to ASD symptom severity, social pragmatic difficulties
    - Glod, M., Riby, D. M., Honey, E., & Rodgers, J. (2015). Psychological Correlates of Sensory Processing Patterns in Individuals with Autism Spectrum Disorder: A Systematic Review. *Review Journal of Autism and Developmental Disorders, 2*(2), 199-221.

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Our students

- What is the world like for them?
- What would an optimal environment be?
- Is a typical classroom a good setting for learners with ASD?

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Advantages to Informal Assessment

- Clinician determines what to measure, based on concerns and expertise
- Able to collect data about natural behaviors and real-world functioning
- Can use data collected as baselines for intervention goals

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Disadvantages to Informal Assessment

- If artificial cut-off scores required to access services, cannot obtain from informal measures
- Need more expertise to interpret
  - Knowledge of typical development
    - Norms lacking for pragmatics, unclear what metrics
      - E.g., how to quantify "tactful communicator"?
- May be more time-consuming

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Limitations of Formal Testing for Language & Communication in ASD

- Many tests' norming populations do not include individuals w/ASD
  - E.g., PPVT-4 attempted full range sampling reflecting populations norms--it has exactly 4 participants between ages of 2 and 18 with ASD in its norming sample
- Areas of language and communication with most significant weaknesses may lack formal tests
  - Gestural communication
  - Prelinguistic and minimally linguistic communicative development
  - Pragmatics
  - Language to support success in the classroom
- Santhanam, S. & Hewitt, L. (in press). Evidence-based assessment and autism spectrum disorders: A scoping review. *Evidence-Based Communication Assessment and Intervention.*

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Formal Tests Relevant to Social Communicative Assessment in ASD

- Communication and Symbolic Behavior Scales Developmental Profile™ (CSBS DP™, Wetherby & Prizant)
  - Early development screener
- Macarthur-Bates Communicative Development Inventories
  - Validated for ASD; good for toddlers through preschool
  - Parent-administered checklist
- Children's Communication Checklist (CCC)
- PPVT
  - Advantages: simple format; no need for verbal expression; well-normed; can reveal unsuspected competence
  - Disadvantages: limited information gleaned; no guidance for intervention
- CASL subtests
  - Idiomatic language; Pragmatic judgment; Inference; Meaning from context

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Suggestions for formal tests, cont.

- Social Responsiveness Scale, 2nd Ed.
- Test of Problem-Solving (TOPS)
  - Elementary TOPS 3
  - Adolescent TOPS 2
- Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES)
- Test of Language Competence, Inferencing subscale

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Social Communication: approaches to assessment using informal protocols

- Assessing higher functioning individuals, especially adolescents and adults, can prove challenging
  - Importance of communication sampling
  - Documentation of barriers to success in regular curriculum
    - Common core and state standards
    - Also hidden curriculum
  - Double interview
    - Available in Winner, M. (2007). *Thinking about you, thinking about me: Teaching perspective taking and social thinking to persons with social cognitive learning challenges*. (2nd ed.). San Jose, CA: Think Social Publishing.
  - Peer conflict resolution task.
    - Nippold, M.A. (2014). *Language sampling with Adolescents, 2nd Ed.* San Diego, CA: Plural Publishing
  - "Big picture" narrative coding
    - Barnes, J., & Baron-Cohen, S. (2012). The big picture: Storytelling ability in adults with autism spectrum conditions. *Journal of Autism & Developmental Disorders, 42*(8), 1557-1565. doi:10.1007/s10803-011-1388-5.
  - Narratives of personal experience
    - Rollins, P. R. (2014). Narrative skills in young adults with high-functioning autism spectrum disorders. *Communication Disorders Quarterly, 36*(1), 21-28. doi:10.1177/1525740114520962
  - Suggestions for college-going students/transition planning
    - Hewitt, L. (2015). Assessment considerations for college students with autism spectrum disorders. *Topics in Language Disorders, 34:4*, 313-328.

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Best practices in assessment

- Take a multi-pronged approach
- Consider use of caregiver report instruments
- Structured observations in critical contexts
- Interview person, if old enough

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EBP: Clinical decision-making

- Single most important aspect of effective practice
- Pathways to decision-making:
  - What you learned in school
  - Your previous experience/beliefs
  - What your colleagues do/suggest
  - What is required/feasible in your work setting
  - What families want
  - Scientific evidence

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EBP for busy clinicians: Suggested "quick & dirty" strategies

- National Standards Project http://www.nationalautismcenter.org/about/national.php
- Google Scholar
  - Often cannot get full text articles
- ASHA website
  - All ASHA journals free full-text on-line
    - Set up your account and password
  - ASHA Practice Portal http://www.asha.org/practice-portal/
- Also try
  - Special interest websites: many free resources
    - ASA
    - Apraxia-kids.org
- To get a hold of information, maybe articles
  - Contact expert in academia
    - Helps if they are in your local area
  - Try e-mailing author of article you are interested in
- Join Special Interest Group of ASHA
  - ASHA Community http://community.asha.org/Discussions/DigestViewer/?GroupId=265&UserKey=e4f77c70-733c-422e-8d5b-76bf5133bfea&sKey=Us82E D3EF 2D04E 9A5027

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Fundamentals in Intervention for ASD

- Grounded in best contemporary science
- Appropriate to ASD profile
  - As neuroscience improves, interventions more intentionally designed—more to go on to decide what to do
    - Maybe have more impact
- Early intervention now shown to benefit adaptive functioning, including social functioning
- Gains possible at any age
  - Though dearth of research in older adults
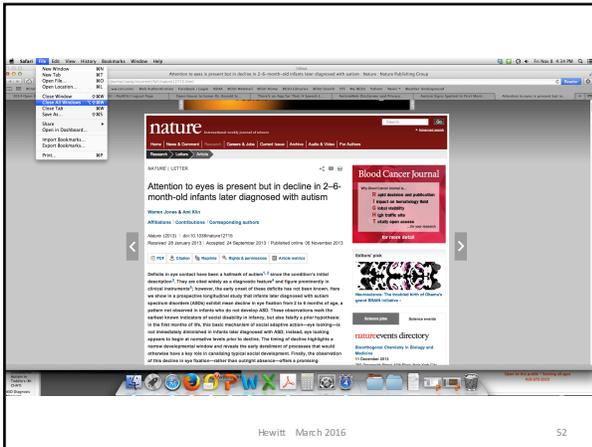
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Best Practices in Intervention for Social Communication Impairments in ASD

- Level 3 individuals
  - Early intervention has clear benefits in averting social deficits
    - EIBI
    - Joint attention intervention
    - Early Start Denver Model

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Take-away message from infant eye gaze study

- Fundamental cause of ASD may be "paying attention to the wrong stuff"
  - That is, neglect of social input and emphasis on object input skews brain development
  - Fail to develop fundamental structures needed to process complex social info
    - Emergent networks responsible for social knowledge
- Is there a potential window for diverting development back onto the right course?
- Is 18 months too late?

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What interventions might target eye gaze?

- In infancy? Unknown as yet
- Toddlers/preschoolers?
  - Naturalistic/social communication/focused stimulation types
  - Behavioral interventions
  - Technology/Videos?
- Older children and adults
  - Is it too late?
  - If not,
    - Metacognitive approaches

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Interventions with supporting evidence

- Early intervention approaches
  - Early Intensive Behavioral Intervention
    - http://www.lovaas.com/
  - Pivotal response treatment
    - http://education.ucsb.edu/autism/prt.html
  - Enhanced Milieu Teaching
    - http://kc.vanderbilt.edu/kidtalk/files/presentations/Kaiser_AUCD%20Webinar_2_22_11.pdf
  - Early Start Denver Model
    - http://www.ucdmc.ucdavis.edu/mindinstitute/research/esdm/
  - Developmental Individualized Relationship-based (D.I.R. Floortime)
    - http://www.icdl.com/dirFloortime/overview/
  - SCERTS model
    - http://www.scerts.com/
  - Picture Exchange Communication System
    - http://www.pecsusa.com/
  - Hanen More than Words
    - http://www.hanen.org/Home.aspx
  - JASP/ER: Joint attention, Structured Play, Emotion Regulation
    - http://www.ncbi.nlm.nih.gov/pubmed/22965298
    - http://www.slideshare.net/autismsciencefd/connie-kasari

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Joint attention intervention

- Kasari et al. (2007)
  - Theory: social engagement needed for language development to progress normally
  - Background: numerous studies show deficit in joint attention in children with ASD
  - Joint attention is foundation of social engagement, so increasing it should remediate and/or prevent some of the social and language impairments in ASD
  - Intervention trains parents to engage children in play-based joint attention interactions
    - (some similarity to Floortime, SCERTS)
  - Finding: increased joint attention AND increased vocabulary

Early Start Denver Model

- Behavioral and naturalistic combination
- Developmental focus
- Parent training
- Relationship-based
  - Fostering social-cognitive, emotional, and communication development in everyday home environment
  - Dawson et al. (2010) – RCT showed gains in IQ, adaptive behavior, & autism diagnosis at follow-up (compared to treatment as usual)

Issues in intervention for ASD past early years

- Neurobiological
  - The longer a system has been developing, the harder it is to create system-wide change
    - Behavioral problems become entrenched
    - Problem-solving style refines itself
  - Co-morbid disorders may become more acute in later years
  - Adolescent changes can complicate matters

Issues in intervention for ASD past early years, cont.

- Families/school environments also develop patterns of responding, expectations
- Later language needs tap into weakest areas
  - Social-emotional reciprocity
  - Inferencing
  - Executive functioning
  - Cognitive flexibility, creativity

Intervention approaches for school age children with ASD

- Theoretical bases
  - Behavioral
    - Claims of the potential for massive, system-wide change no longer pertain as in EIBI
    - Behaviorists use these techniques with all ages, but EIBI targets early devel.
  - Naturalistic
    - Challenge to identify motivating natural contexts and get students to engage
    - Unclear if similar results can be expected from child-centered approach as in younger ages
  - Metacognitive
    - Typical educational approach
      - ID skill
      - Explain skill
      - Practice skill
    - Classic problems of generalization, maintenance, cognitive readiness

Approaches to Improving Social Communication in School Age Children

- Metacognitive practice
  - Uses social skills drills, but supports with discussion to assist in raising awareness
    - For higher functioning, older individuals
      - Winner's social thinking approach falls here
        - » Thinking about You, Thinking about Me
        - » www.Socialthinking.com
  - Social stories
    - attempt to raise metacognitive awareness of social situations
  - Social skills curricula
    - Many materials exist
      - Games
      - Workbooks
      - Songs

Meta-cognitive approaches, cont.

- Discussing problem objectively
  - Autism Spectrum Quotient Test http://www.wired.com/wired/archive/9.12/aqtest.html
  - Jackson (2002) "Freaks, Geeks, and Asperger Syndrome"
  - Myles, Trautman, & Schelvan (2004)
- Recent research applying cognitive behavioral therapy to ASD: more systematic and sophisticated use of metacognitive approach
  - Evidence-based practice in psychology; SLP's not trained
    - Though some implementation with fluency disorders
  - Evidence that CBT assists with anxiety, including social anxiety
    - Sung et al. (2011); White et al. (2010); White et al. (2013); Wood et al. (2009)

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Approaches to Improving Social Communication in School Age Children, cont.

- Modification of environment
  - AAC
  - Visual schedules and other environmental cues
  - Sensory diet
  - Training of families, educational personnel, peers
  - Training at classroom or small group level
    - Communication Lab (Dodge, 1998)
    - Jarvis Clutch, Social Spy (Levine, 2001)
      - (also a metacognitive approach)

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Social Communication in ASD: Challenges

- Problem
  - Social skills, pragmatic language impairments are hallmarks of autism spectrum disorders
  - Insufficient controlled research on intervention techniques
    - E.g., Social Thinking very popular, but 2015 NSP report excluded it as an EBP
  - Santhanam & Hewitt (2013)
    - Interviewed 8 young adults with ASD, found almost all saw limited benefit from or need for intervention, yet all articulated frustration with social and vocational success

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Critical Need for Social Communication: Outcomes for Adults with ASD

- Low rates of educational and vocational attainment even in cognitively able adults with ASD
  - Nevill & White (2011)
  - Levy & Perry (2011)

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Adults with ASD: Underserved and Underemployed

- Shattuck et al. (2011), in national survey, found low rates of service usage post-high school (ages 19-23)
  - 74% had SLP services in high school; only 9% did post high school
  - Use of all support services dropped substantially
- Shattuck et al. (2012), in national survey, found over 50% of young adults with ASD were not employed or in school
  - 12.1% had attended college

"Youth with an ASD had the lowest rates of participation in employment and the highest rates of no participation compared with youth in other disability categories" p. 1042

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Quality of Life and ASD

- Survey in Japan found lower self-reported quality of life for adults with high-functioning ASD than general population
  - Kamio, Inada & Koyama (2012)
- Howlin et al. (2013) conducted standardized survey of 60 adults with ASD with at least average IQ
  - Only 10 rated as "good or very good" outcome
  - 60% rated as "poor or very poor" outcome
    - Measures focused on mental health, employment, independent living, social relations

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Potential Reasons for Poor Outcomes

- Co-morbid psychiatric disorders such as anxiety & depression; history of peer rejection
  - Shtayermman (2007)
  - White, Ollendick, & Bray (2011)
- Undiagnosed or insufficiently managed learning disabilities and/or language impairments
- Lack of appropriate early intervention
  - Late start
  - Lack of consistency, eclecticism
  - Lack of intensity
- For high-functioning individuals, talents and many strengths may mask significant difficulties

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Legal Changes from Secondary to Post-Secondary

- IDEA for K-12
  - Free and appropriate public educati
- ADA for work and college
  - Reasonable accommodations
  - Equal access
  - no modification to curriculum or p expectations
    - concept of leveling the playing field

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How SLP's can help improve outcomes

- Supports and interventions we offer target key risk areas
  - Communication
    - Oral and written
  - Social knowledge, social reasoning, social functioning
  - Linguistically and academically-related higher-order cognition
    - Self-management
    - Planning
    - Task analysis and problem-solving
    - Strategies for academic success

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Aspects of ASD Supporting College Success

- May have strong interest in subject of study
- Relevant special talents
- Average to superior intellectual ability
  - writing, drawing, mathematics
- Committed to following rules
- May enjoy reading, intellectual pursuit
  - Not as distracted by social life…

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Aspects of ASD not supporting academic success

- Social
  - social thinking, social communication
  - need for own space
- Cognitive
  - Executive functioning deficits
    - higher order planning
    - decision making
    - time management
    - organization
  - Rigidity
    - difficulty adapting
  - Information processing
    - difficulty dealing with complex input
    - making rapid decisions in new environments
- Emotional
  - anxiety
  - depression

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ASD and the post-secondary environment

- College expectations
  - Independence
    - Sample abilities: can navigate web to locate syllabi; can access e-mail for letter of accommodations, print, and share with professor; can manage a planner or calendar
  - Problem-solving, higher order planning, decision-making
    - Sample abilities: can identify steps needed to complete assignment;can decide how much time to allocate to studying versus recreation; can identify need to contact professor and independently find out how to do so, then carry that out.
  - Multi-tasking
    - Sample abilities: can listen to lecture, and view PowerPoint, while deciding what notes to write down, and write them, while screening out background distracters
  - Sensory efficiency
    - Sample abilities: can manage to sleep and study in dorm, despite lighting and noise issues; can deal with smells and noises in cafeteria
  - Spatial reasoning and way-finding
    - Sample abilities: can locate buildings on a campus map; can follow oral or written directions to locate new places and successfully navigate there independently
  - Social abilities
    - Sample abilities: is aware of whether someone is open to interacting; knows what information to share, when; knows how to shift register for different social groups

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More on Social Abilities

- Social success: thinking about what others are thinking, all the time, and using that to make decisions about your own actions
  - Basis of Winner (2007) approach.
- Using this information, in real time, to present oneself positively, get social needs met
  - Requires micro-timing
  - Exhausting!
    - May be very under-developed in many 18 year olds on the spectrum

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But if EBP is not clear for children….

- Situation is much worse for adults

Best practices for ASD: still relevant for adults

- Individualized
- Breaking down complex information, teaching new skills step-by-step
- Repetition
- Reducing auditory input/increasing visual input
- Making explicit and obvious what is inferred and subtle
- Expectation that developmental trajectory will not be rapid

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Transition planning

- Determining the **true level of independence** of the student
  - What supports are present?
  - How do those contrast with what is available in college?
    - Realism is a must!
  - Craft goals that target areas where supports are most likely to be absent in college
    - Self-management, higher order planning

Approaches to intervention for young adults with ASD

- Where are the needs?
  - Start with assessment
    - Basics:
      - Interview with parents, case history
      - Interview with student
    - Probing pragmatics
      - Double interview (Winner, 2007)
    - Executive functioning
      - FAVRES
    - Literacy/residual language impairments
      - Surprising number of students have difficulty with college level reading comprehension

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Communication goals for college

- Professional communication: Goal areas for transition planning
  - Making phone calls independently
  - E-mail
    - Checking it
    - Courtesy/responding
    - Interpreting nuances
      - "she said 'get it to me when you can'"
  - Office hours
  - Campus services
  - Reading a syllabus
  - How to work in groups
    - "That kid is an idiot but I know not to tell him so"

2/29/16

Communication goals for college, cont.

- Social communication: Goal areas for transition planning
  - Living in the dorm
    - Roommates?
  - Approaching people
    - How do you know who you can talk to?
    - High tech corollary:
      - Who can you text
        - And how often…
      - Follow on social media
  - Conversation
    - Topics
      - Appropriateness
        - Errors of quality
      - Manipulation
        - Errors of quantity
    - Partner-focused questions
      - "The 'social fake'"
      - Reciprocity

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Using Winner's Social Thinking Curriculum

- Core concepts
  - Teaching socially oriented problem-solving
  - Step-by-step breakdown of how to understand what others are thinking so you can predict what they will do
    - Quote from first year student with ASD
      - "It's impossible to know what anyone is thinking unless you are a mind reader"
    - Expected and unexpected behaviors
    - "Thinking with your eyes"—how to enter social situations
- Winner 2007a and b references in your handout

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Other stuff to think about

- Way finding
  - Many with ASD have difficulty with spatial reasoning; may be masked if they are used to supports
- Clothing choices
  - Clothing communicates….
- Vulnerabilities to exploitation
  - Goals for understanding when others are inappropriate
    - Student Code of Conduct may help
- Video game addiction

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Unresolved learning disabilities and/or missing skills

- Higher order reading comprehension
- Note taking
- Study strategies
- Understanding college level assignments
  - "I don't know where to start"
- Time management
  - Using a planner
  - Technology aids

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Managing co-morbid psychiatric problems

- Individuals with ASD at high risk for other psychiatric problems
  - If working with a psychiatrist/psychologist, what supports available?
  - What is on campus?
    - Often campus services intended for short term counseling
  - Can they take their medication independently?
    - And will they?

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Anxiety and depression

- Can destroy a student's college career
  - families must be prepared with a plan
  - Students need skills to identify problem and seek help
  - Students with this profile might consider a 2 + 2 approach, starting at a community college

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Cognitive Behavioral Therapy

- Evidence-based practice for many psychological problems
  - Well-documented as effective for social anxiety in ASD
    - See Hewitt 2014 for a review
      - http://sig1perspectives.pubs.asha.org/article.aspx?articleid=1838333

PERSPECTIVES
on Language
Learning and
Education

SPECIAL
INTEREST
GROUP
1

Whose college career is it?

- Student must have internal motivation
  - College is a low-structured situation
    - Designed as transition to adulthood
      - No amount of emails, phone calls, texts and visits from parents can create the internal drive in the student if it is lacking
    - Neurobiology revisited:
      - All college students can get exhausted and stressed
      - College students with ASD will often be more so
        » Plunged into stressful context ill-matched to their unique profiles
          - -→every day can be a huge challenge.

We Can Do It!

Modeling in ASD: Imitation

- Imitation abilities
  - Lack of imitation is a red flag for ASD in toddlers
  - But…superior imitation abilities seen in other realms
    - Echoed speech
    - Savant abilities
    - "Hyper-imitation"

  - So is imitation impaired in ASD, or actually superior?
    - Sowden, S., Koehne, S., Catmur, C., Dziobek, I. and Bird, G. (2016), Intact automatic imitation and typical spatial compatibility in autism spectrum disorder: Challenging the Broken Mirror Theory. *Autism Research*, 9: 292–300. doi: 10.1002/aur.1511
    - Automatic imitation actually superior
    - Socially mediated imitative behaviors impaired
      - Not because imitation ability lacking, but because of difficulties with complex, social situations
        » Individuals with impaired theory of mind found to be "hyper-imitators" (Spengler, Bird, et al., 2010)

Modeling in ASD: Behavioral treatments

- Very large literature supports behavioral interventions for ASD, especially EIBI
  - Reichow, B. (2012). Overview of meta-analyses on early intensive behavioral intervention for young children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 42(4), 512-520.
  - Key components of this treatment include modeling
    - Task analysis
    - Repetition
    - Reward for correct imitation

Visual Supports in ASD

- Many visual approaches
  - Picture Exchange Communication System
  - Social Stories
  - Visual Teaching
  - Visual Schedules

Social Stories

- Gray (2000)
  - Simple sentences
    - Specific types of sentences
  - Pictures, if needed
  - Tailored to child
  - Specific guidelines:
    - List desired behaviors, not prohibited ones
    - Give choices
    - Use "sometimes", "may", etc.
      - Helps decrease rigidity
    - Plan to fade them over time
    - More resources from Carol Gray:
    http://www.thegraycenter.org/index.cfm

More visual approaches

- Learning to read emotional cues
  - Software games
    - E.g., Mind Reading
    - http://autismcoach.com/Mind%20Reading.htm

- Communicating about emotions
  - Visual communication notebooks

- Limited evidence for any of these, despite popularity

Visual approaches, cont.

- Schedules, Planners, Visual Organizers
  - Rationale
    - Decreases anxiety by increasing knowledge of what to expect
    - Incorporates language to go with situation
      - Especially if student can read
    - Decrease memory burdens on student

So, do any of the above work?

- Evidence-based practice for ASD and pragmatics
  - We are not there yet
    - Bellini, Peters, Benner & Hopf (2007)
      - Metaanalysis of social skills training studies for ASD
        » Little to no effect
    - More hopeful results found in below review: preliminary low level evidence shows modest gains for social skills group and individual training, as well as peer modeling:
      - Burgess, S., & Turkstra, L.S. (2006). Social Skills Intervention for Adolescents with Autism Spectrum Disorders: A Review of the Experimental Evidence. *EBP Briefs, 1(4)*, 1-21.

Social Stories: Evidence lacking

Case_example: Social Stories (Gray, 2000)
Daneshvar (2006)
   Did not find social stories effective in teaching social behaviors to children with ASD
Scattone et al. (2006)
   Effective for 2 of 3 children in small study
Rust & Smith (2006)
   Review of studies to date found confounds
     Other interventions at same time
     Different behaviors expected from caregivers
   Designs weak
   Generalization beyond duration of the study not investigated
     Some withdrawal designs suggest behavior reverts when story withdrawn

So, do social stories work?

- Information is inconclusive
- Important to incorporate them within a more comprehensive behavioral plan
- Need to be well-integrated into child's environment, individualized to their needs
- Not clear how long-term the effects are

Visual teaching strategy

Attending skills:

The visual symbols **"go"**, **"almost done"** and **"stop"** can also be used to increase a child's **attending skills**. Data will need to be initially obtained to get a general idea of how long a child attends to a particular task.

Example: The child attends to a particular task for approximately 45 seconds and then throws all of his materials to indicate that he is "all done". To teach the significance of the "go" , "almost done" and "stop" cards, the "go" card is given at the start of the activity, the "almost done" card is given after approximately 30 seconds (as we already know the child will throw the materials after 45 seconds) and the "stop" card is given at approximately 40 seconds, with the activity immediately ceasing. It is critical to initially use the cards to "stop" the activity **prior** to the child throwing the materials, so that the child realizes the significance of the cards in relaying the messages of being "almost done" and "stopping". Gradually, the length of time for giving the child the "almost done" card and the "stop" card is increased, thus increasing the child's attending skills. It is important to note that the "almost done" card is always given to the child within a short time frame of giving him the "stop" card. Consistency is important in using these cards to increase the child's attention.

http://www.specialed.us/autism/printinst.htm

Why Visual

- Not necessarily because vision in and of itself better in ASD
  - Some evidence suggests auditory issues:
    - Roth, D. A. E., Muchnik, C., Shabtai, E, Hildesheimer, M., & Henkin, Y (2012). Evidence for atypical auditory brainstem responses in young children with suspected autism spectrum disorders. *Developmental Medicine & Child Neurology, 54*(1), 23-29.
  - However, nature of visual information inherently different than auditory

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Visual vs. Auditory

Visual
- Persists through time
- Can be repeated exactly
- Can usually process separate elements, if need be
  - E.g., examining details of shape or position

Auditory
- Transitory
- For speech, exact repetition only possible with recording
- Cannot easily process separate components

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Visual Supports for ASD

- Visually enhanced environments
  - E.g., work bins, footprints to show where to go, Time Timers
- Written and/or graphic instructions or prompts
  - E.g., Red/yellow/green lights
- Visual schedules/visual activity schedules

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Modeling

- Providing intentionally planned input demonstrating some behavior
- Strict definition involves demonstration alone, without instruction or feedback
  - This is how it is used in the most naturalistic language therapy approaches
  - Modeling plus feedback used in more structured approaches

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Static vs. dynamic input

- Visual schedules/visual activity schedules are static
  - Evidence-based practice for ASD
    - Knight, V, Sartini, E., & Spriggs, A. D. (2015). Evaluating visual activity schedules as evidence-based practice for individuals with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 45*(1), 157-178.
  - Good for providing unchanging cues for expected sequences of activities
  - Decrease need to auditory prompts and reminders
  - Increase independence

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Static vs. dynamic, cont.

- Problem:
  - Imitation in ASD not impaired at basic level
  - Problems arise with complex, especially complex social, activities
- Dynamic demonstration
  - Live demonstrations have same problems as auditory input
    - Transitory, hard to replicate exactly
    - Processing limitations of person with ASD may conflict with patience and exactness of person providing model

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Video Modeling Rationale

– Many behaviors are learned though observation of others in the world

– Video allows one to focus in on desired behaviors without outside distractors

– Allows repeated, identical viewings to focus on specific details

Modeling: An Evidence-Based Practice for ASD

• National Standards Project (2015) identified modeling and video modeling as evidence based

– http://www.nationalautismcenter.org/national-standards-project/

National Autism Center (2015). *Findings and conclusions: National standards project, phase 2.* Randolph, MA: Author.

Video Modeling Support in the Literature: Recent Examples

• Play and play-based social behaviors
  – Boudreau & Harvey,2013; Kourassanis, Jones, & Fienup, 2015; Sani-Bozkurt & Ozen, 2015
• Workplace supports
  – Burke et al., 2013; Kellems, 2010
• Social communication, social abilities
  – Chen, Lee, & Lin, 2016; Hochhauser, Gal, & Weiss, 2015; Kabashi, 2013; Mason et al., 2012; O'Handley, Radley, & Whipple, 2015; Ozerk & Ozerk, 2015; Wilson, 2013a; Wilson 2013b
• Academic skills
  – MacDonald et al., 2015; Yakubova, Hughes, & Hornberger, 2015
• Self-help, activities of daily living
  – McLay et al., 2015
  – Spriggs, Knight, & Sherrow, 2015;

However…

• Applying rigorous criteria for establishing an evidence-based practice, McCoy et al. (2016) did NOT find video modeling for social skills to have sufficient evidence

  – Issues:
    • Lack of rigorous participant description/diagnosis
    • Failure to establish experimental control

  – Studies showed positive results, but were not conducted in a sufficiently rigorous manner, per procedures advocated by Reichow (2011):

Reichow, B. (2011). Development, procedures, and application of the evaluative method for determining evidence-based practices in autism. In B. Reichow, P. Doehring, D. V. Cicchetti, & F. R. Volkmar (Eds.), *Evidence-based practices and treatments for children with autism* (pp. 25-39). New York: Springer.

Video Modeling

• Video modeling
  • Models created by others for client to watch
    – Commercial materials
      » E.g. http://www.modelmekids.com/
    – Some show "Don'ts" as well as "Do's"
    – May confuse extremely literal children
  • Teacher/clinician-created materials
    – Adult models
    – Peer models
  • Materials taken from mass media or social media sites
    – TV, movies, YouTube
      » Some great colleagues share resources:
        • https://jillkuzma.wordpress.com/youtube-video-links-for-social-skills/
        • https://www.pinterest.com/dowerassociates/video-modeling/

Video self modeling

• Models created by skillful editing that purport to show the client performing the target skill
  – (Gelbar, Anderson, McCarthy, & Buggey, 2012)
• Theory
  – Increased motivation and attention when model resembles self
  – Provides supportive input of seeing oneself produce target behavior
  – 'I can do this because I already have'

• Hybrid approach
  • Create models, video client copying them, play video back, have client self critique, try again

Creating your own videos: Technology Considerations

- Smart phones, tablets, computers with built-in cameras—video is everywhere.
  - Easy to take
  - Easy to edit
  - Easy to delete?
- Issues to consider:
  - Privacy: if you use your own smart phone, do you have technical ability to delete a video so it is not recoverable?
    - Make sure it is not synced to any cloud apps
    - Supposedly video deleted from iPad that you took on iPad is permanently gone if you did not back it up
      - https://discussions.apple.com/thread/3747602?tstart=0

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Determining goals for video modeling

- For younger children, based on
  - Functional impact
    - Is behavior socially isolating/imposing a barrier to access to curriculum or other life contexts?
    - Degree of variation from the norm
    - Is it potentially dangerous for the person?
      - E.g., lack of knowledge of appropriate topics may be nuisance in a 3rd grader, but harassment in a 10th grader
    - Caregiver concern
  - Frequency

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Determining goals for video modeling, cont.

- For older children and adults, all on previous slide still relevant, and in addition:
- Client's perspective and needs
  - E.g., Desire to change
    - *I want to communicate better with my co-workers.*
      - Good basis to begin work
    - *I am not a smiley person—it's artificial and I need to be myself.*
      - Cannot target goal no matter how impactful for the client's problem.
  - Note: Adolescents may not have readiness, which may be neurological; may need more executive function development to help with impulse control and taking the long view

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Making videos

- Short
- Simple, with a clear scenario
- Repetition
- Client practice
  - Video those, ask to compare

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Privacy and security

- Permission to take video?
- Permission to keep video for reuse?
- On school/clinic equipment, is it securely stored? Could others access it?

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Technical considerations

- Lighting
- Background
- Audio quality
- Editing
  - iMovie not too hard to figure out
- Use of avatars, other cutting edge tech
  - http://buggeyvsm.net/resources.html

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Groups

- The cool factor
  – When is it too much fun to be practical?
- Establish ground rules
  – List of rules and regs
  – Visual schedule for video modeling sessions
  – Consequences

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Let's try it out

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