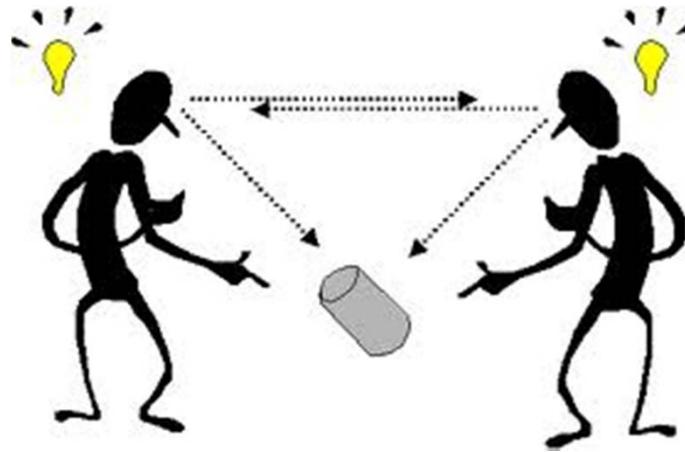


Teaching Joint Attention Skills in Young Learners with ASD

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Joint Attention



Joint attention is the ability to share a common focus on something (people, objects, a concept, an event, etc.) with someone else. It involves the ability to gain, maintain, and shift attention.

(Daymut 2009)

Joint Attention



- It is an early social-communicative behavior in which two people share attentional focus on an object or event, for the sole purpose of sharing that interesting object with each other
Bakeman, R., & Adamson, L. (1984)
-Distinctive to manding (requesting)

Joint Attention

- Joint Attention is considered to be a critical factor for social development, language acquisition, & cognitive development.

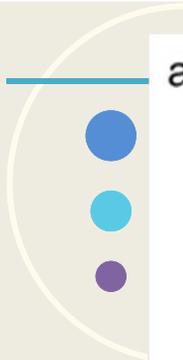


Joint Attention

Joint Attention between two people can include:

- **Attention**--when two or more people are paying attention to the same thing.
- **Emotions**--when two or more people share an emotional state.
- **Intentions**--when two or more people are trying to accomplish the same thing and they know they are doing it together.





a



b



c1



c2



c3



d



e



Explanation of Picture Clips



- Illustrations of different types of infant social attention coordination behaviors:
- (a) Responding to Joint Attention—RJA involving following another person's gaze and pointing gestures;
- (b) Initiating Joint Attention—IJA involving a conventional gesture 'pointing' to share attention regarding a poster on the wall,
- (c_{1,2,3}) IJA involving *alternating eye contact* to share attention with respect to a toy,
- (d) Initiating Behavior Request involving pointing to elicit aid in obtaining an out of reach object;
- (e) Responding to Behavior Requests involving following an adult's open-palm "give it to me" gesture.

(Mundy & Jarrold 2010)

Joint Attention Skills

Examples:



- Being able to look at another person's eyes and face in order to get information such as how that person feels, what that person is looking at, or what that person is trying to do.
- Being able to follow another person's eye-gaze to then look at the same thing.
- Being able to sustain joint attention, requiring that one shift attention frequently to monitor the other person such as during social play.

Elements of Joint Attention



Several skills are important in the development of joint attention

- Orienting and attending to a social partner
- Shifting gaze between people and objects
- Sharing emotional states with another person
- Following the gaze and point of another person
- Being able to draw on another person's attention to objects or events for the purpose of sharing experiences

(Woods & Wetherby, 2008)

Two Main Types of Joint Attention

- RJA: Responding to joint attention
 - ◆ Ability to follow direction of gaze or point
- IJA: Initiating joint attention
 - ◆ Ability to use direction of gaze or point to direct the attention of others



Seibert et al. (1982)

Joint Attention Response Forms

- Proto-imperative
 - ◆ Requesting with gestures or eye gaze



- Proto-declarative
 - ◆ Commenting or sharing interest
- Bates (1976)



Development of Joint Attention

- Joint Attention is observed in typically developing children by 3 months of age and is well established by 18 months.
- The acquisition of the ability to coordinate attention with a social partner is a major milestone of infancy that is critical to infants' active participation in social learning opportunities and language development.



(Adamson, 1995; Baldwin, 1993; Butterworth & Jarrett, 1991; Corkum & Moore, 1997; Mundy & Willoughby, 1998; Scaife & Bruner, 1975; Trevarthen, 1979; Tomasello, Kruger, & Ratner, 1993; Werner & Kaplan, 1963).

Why is Joint Attention so Important?

- Joint attention is vital to social competence at all ages. Adolescents and adults who cannot follow, initiate, or join with the rapid-fire changes of shared attention in social interactions may be impaired in their capacity for relatedness and relationships



(Mundy & Newell 2007)

Joint Attention in Children with ASD



- Children with autism appear to demonstrate deficits in joint attention early in development and remain persistent throughout development Mundy, Sigman, & Kasari (1994)
- Newer shifts in research have resulted in more recent findings for infants & toddlers at risk for ASD (SIBS study, retrospective analysis of 1-year birthday videos, etc.)

Joint Attention Deficits in Young Children with ASD



- Don't orient to certain speech sounds
Dawson, Meltzoff, & Osterling, 1995
- Deficits in referential looking
Charman, et al., 1997
- Deficits in declarative pointing & showing
Baron-Cohen, 1989
- Deficits in looking where others point
Leekman et al., 1997

Increasing Effectiveness of JA Interventions

- Direct Instruction and building social motivation for joint attention are critical to teaching joint attention skills
 - ◆ Establish adult as generalized reinforcer (Repeatedly pair with powerful reinforcer)
 - ◆ Use highly interesting stimuli (strong child preference)
 - ◆ Provide natural consequences when possible
 - ◆ Intersperse activities to maintain attention and interest

Jones & Carr, 2004



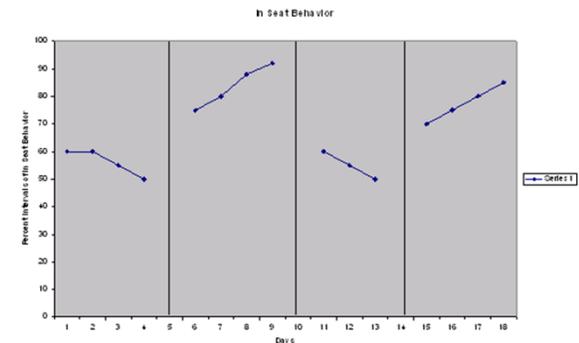
Behavior Analysis of JA



- From a behavior-analytic perspective, responses to bids for joint attention (e.g., looking at an item that an adult is referencing) fall under discriminative control of the adult's mand for the child's attention and are likely maintained by generalized reinforcers (e.g., social attention)
- The child's initiations of bids for joint attention are more properly viewed as mands for the adult's attention directed toward the item or event. The appearance of a noteworthy item or event in the presence of an adult may serve as a motivating operation (MO), momentarily establishing the reinforcing value of the adult's attention.
 - (Dube, MacDonald, Mansfield, Holcomb & Ahearn 2004)

Evidenced Based Approaches

- Pivotal Response Training
- Milieu Teaching (Natural Environment Teaching)
- Discrete Trial Teaching
- Social Stories
- Video Modeling (can include basic, self, or point of view)
- Peer Mediated Instruction



Preparing to Teach Joint Attention

- Pairing self and objects with reinforcement

- ◆ In order for the child to attend to you, you need to condition yourself as a powerful reinforcer
- ◆ Make adult the individualized human reinforcers for that particular child!



- Manipulating Motivative Operations

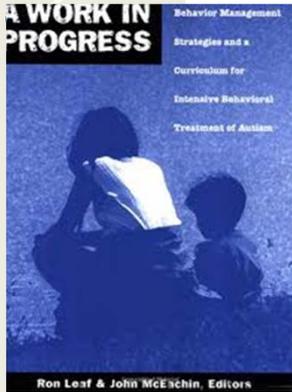
- ◆ An antecedent which alters the value of a reinforcers and evokes behavior
- ◆ Satiation, deprevation, condition

- Mand Training

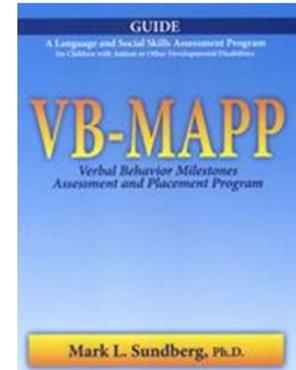
- ◆ Can be targeted simultaneously, keep in mind the mand is the one operant that directly benefits the speaker (in this case the child) and is a foundation skills that can be expanded during JA training

- Imitation Training

- ◆ One of the most effective prompts to use in joint attention and beneficial in turn taking, reciprocal interactions, etc.



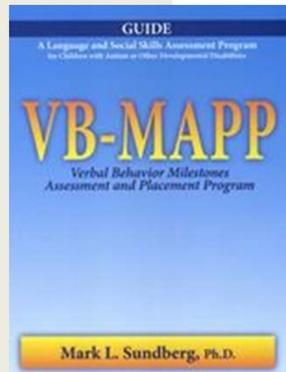
Use evidenced & curriculum Based Programming



- VB MAPP Task Analysis for Level I Operants such as manding and social play
- Discrete Trial Programming including respond to name, differential reinforcement of eye contact, establishment of social reinforcement, Joint Attention programming track, reciprocal play actions, turn taking, etc.
- Assessment subsets of Joint Attention related-behaviors.

Skill	Level 1: Mand:
1-a	Makes eye contact (gaze shift) as a mand for attention or other reinforcers 2 times
1-b	Moves close to a reinforcing item to indicate the presence of an MO 2 times
1-c	Pulls an adult to get access to a reinforcing item 2 times
1-d	Points or gestures toward a reinforcer in order to obtain it 2 x's

	Level 1: Level I: Operant: <u>Social Behavior and Social Play</u>
1-a	Smiles when hearing familiar voices 3 times
1-b	Looks at the faces of familiar people at least 3 times
1-c	Orients towards or makes eye contact with familiar people 5 times
1-M	Visually tracks and shows interest in people's movement at least 5 times (TO:30min)
2-a	Smiles or laughs during physical play 5 times
2-b	Participates and smiles in reciprocal social play 2 times
2-c	Seeks out adult attention using eye gaze, sounds, or gestures 3 times
2-M	Indicates that he wants to be held or physically played with 2 times (TO:60 min)
3-a	Takes a desired item from an adult 3 times
3-b	Reacts positively to being approached by other children 2 times
3-c	Responds to greetings from others with 2 seconds of eye contact 2 times
3-M	Spontaneously looks (glances) at other children 5 times (TO:30 min)
4-a	Approaches other children 2 times with an adult prompt
4-b	Appropriately stands close by other children in group activities 2 times
4-c	Imitates a wave "bye-bye" to others when prompted 2 times
4-d	Sits next to other children in group activities 2 times when prompted by an adult
4-M	Spontaneously engages in parallel play near other children for a total of 2 minutes (TO:30min)
5-a	Spontaneously follows another child 2 times
5-b	Spontaneously imitates the behavior of another child 2 times
5-c	Laughs or smiles when others engage in silly, fun, or entertaining behavior 2 times
5-M	Spontaneously follows peers or imitates their motor behavior 2 times (TO:30 min)



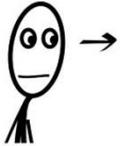
Teaching your child to look back and forth between you and an object.

- **Why?** 1) To establish a fun routine that involves social looking; 2) To help your child learn to use your face as a cue to what you are thinking and feeling; 3) To help your child learn to share experiences with you.



- **How?** By modeling exaggerated verbal and facial responses to “surprise” events. When unexpected or surprising events occur during the course of the day (e.g., the doorbell ringing, a jack-in-the-box popping up, a music box stopping, a block tower falling over), look at your child, make an exaggerated look of surprise (e.g., raise your eyebrows, smile and open your mouth wide, make a gasping sound, cover your mouth with your hand), and say enthusiastically, “Wow!” or “Uh-oh!” (depending on the child, teach multiple exemplars from the beginning). Your tone should be positive. Watch for your child’s response. If your child looks at you, you can reward him/her by saying, “Good looking!” or by giving him/her a brief tickle. If your child doesn’t look at you, keep trying this during different parts of the day. You can set up play activities so that a surprise event occurs periodically and turn this activity into a game.

(TRIAD: Vanderbilt Children’s Hospital; 2004)



Teaching your child to follow your point or eye gaze.



- **Why?** To help your child understand gestures as a source of information.
- **How?** By hiding objects the child wants and teaching him/her to follow your point, head turn, and/or eye gaze to find them. Gather some of your child's favorite toys or objects (e.g., parts of a puzzle, balls to put down a chute, cars to go on a track) and place them in different parts of the room. When starting this activity, the objects should be fairly close to the child and at least partially visible. Start playing a game with him/her so that s/he needs the objects you've hidden. When the need becomes apparent, shrug your shoulders and say, "Hmm, where is it?" Then point to the object and say, "There it is!" When your child is able to find the objects consistently, try turning your head in the direction of the object instead of pointing to it. Eventually you can try just shifting your eyes to indicate the general direction of the object. Be sure to use objects that are highly motivating for your child. (TRIAD: Vanderbilt Children's Hospital; 2004)

Motivating ways to Promote JA

- **Rolling ball back & forth*
 - **Tossing bean bag back & forth*
 - **Rolling car back & forth*
 - **Using a cardboard tray with sides to tip & roll objects back & forth (experiment with a variety of objects- which roll, which do not?) A section of plastic gutter with sharp edges filed or taped also works well.*
 - **Hang a Nerf ball from a flexible plastic string to bat back & forth like a tether ball-can be done while sitting or standing*
 - **Hold a sheet or blanket with a friend and help monkeys (any soft toy) "jump on the bed."*
 - **Two friends sit across from each other and use straws or just blow with their mouths to move a ping pong ball or feather to their friend-back & forth*
- **Use an age-appropriate teeter-totter, such as "Little Tikes"*
 - **Use a "Rocking boat" with seats across from each other*
 - **Playing a keyboard together*
 - **"Row, Row, Row Your Boat" with a friend*
 - **Hold a friend's hands to dance to favorite music*
 - **Do an age-appropriate computer game with a friend*
 - **Take turns blowing bubbles –one friend blows the bubbles, while one friend pops the bubbles*
 - **Hold a sheet/blanket with a friend and rock a baby doll/stuffed animal*
 - *On a mat or carpet, play tug of war with stretchy material*

*Created by the DESD-CDS White
City ECSE Preschool Staff



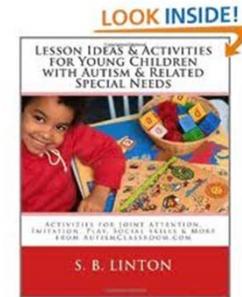
Can include adult, sibling, or peer during activities.

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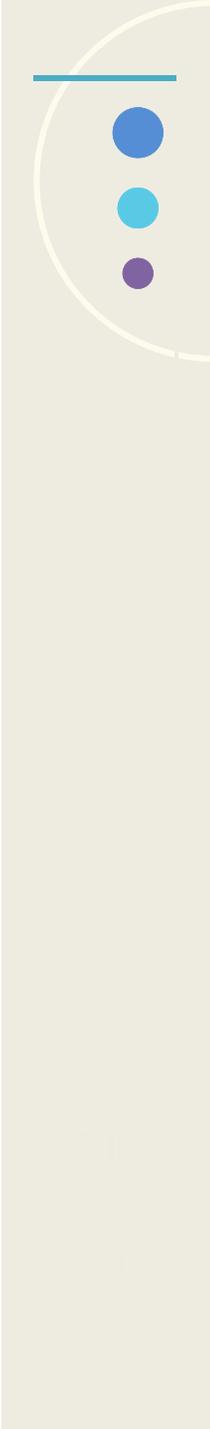


- Bakeman, R., & Adamson, L. (1984). Coordinating attention to people and objects in mother-infant and peer-infant interaction. *Child Development*, 55, 1278-1289.
- Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V. (1979). The emergence of symbols: Cognition and communication in infancy. New York: Academic Press.
- Daymut, J., (2009). Joint Attention Skills & the Child with Autism. Super Duper Handy Handouts Vol. 196
- Dube W.V, MacDonald R.P.F, Mansfield R.C, Holcomb W.L, Ahearn W.H. Toward a behavioral analysis of joint attention. *The Behavior Analyst*. 2004;27:197-207.
- Isaksen, J., (2009). An operant approach to teaching joint attention skills to children with autism. *Behavioral Interventions*, 236, 215-236
- Mundy, P., Card, J., & Fox, N. (2000). Fourteen-month cortical activity and different infant joint attention skills. *Developmental Psychobiology*, 36, 325-338.
- Mundy, P.,; & Jarrold, W. (2010). *Neural Networks, Volume 23, Issues 8-9, October-November 2010, Pages 985-997*
- Seibert, J.M., & Hogan, A.E. (1982). Procedures manual for Early Social Communication Scales (ESCS). University of Miami, FL: Mailman Center for Child Development.
- Whalen, C., & Schreibman, L. (2003). Joint attention training for children with autism using behavior modification procedures. *Journal of Child Psychology and Psychiatry*, 44, 456-468.

Select Resources



- The VB-MAPP Set: The Verbal Behavior Milestone Assessment & Placement Program (Sundberg)
- A Work in Progress (MacEachin & Leaf)
- Early Start Denver Model for Young Children with Autism (Rogers & Dawson)
- Lesson Ideas and Activities for Young Children with Autism and Related Special Needs: Activities, Apps & Lessons for Joint Attention, Imitation, Play, Social Skills & More from AutismClassroom.com (S. B. Linton)
- Key Learning Skills for Children with Autism Spectrum Disorders (Whitman & DeWit)
- <https://sites.google.com/site/autismgames/home/video-models-all-games> (SLP site with video taped NET games)
- WWW.TRIADATVANDERBILT.COM
- <http://ukcasper.weebly.com/uploads/7/9/7/9/7979860/earlysocialskills.pdf> (COMPASS INFORMATION SERIES)
- <http://cds.desd.k12.or.us/Pages/default.aspx>



Autism Services, Education, Resources, and Training (ASERT)

- ASERT is a statewide initiative funded by the Bureau of Autism Services, Pennsylvania Department of Public Welfare.