**“Survival of the Busiest”**

- Infant brain has overabundance of cells and connections
- Life experiences “prune” dendrites, allowing only those pathways that are used frequently to become permanent

Courchesne et al., 2003; Courchesne, 2004

**“Survival of the Busiest”**

- Infants with autism may prefer self-stimulatory behaviors over “baby games” that involve social interaction, anticipation, attention-sharing
- Neurons that would normally be used in these activities are not activated, so effective neural pathways are not built

Twachtman-Cullen, 2008

**Lasting Effects. . .**

“Early core deficits may lead to a cascading effect on neurodevelopment that arises from impoverished social interaction.”

(Mundy & Burnette, 2005)

**Joint Attention**

- **Joint Attention** = Consciously focusing your attention on the same event or object as another person
  - Not just looking at the same thing as someone else, but being aware that you’re sharing the experience

**RJA and IJA**

- **Response to Joint Attention** child follows adult’s “line of regard”
- **Initiation of Joint Attention** child spontaneously draws adult’s attention toward an object or event (“showing”)
- **Expect more deficits in IJA than RJA**

Mundy, Sigman, & Kasari (1990)

What does early JA look like?

- Should be able to point to an object, then look at adult’s eyes to establish joint attention by 11-14 months
- Babies later diagnosed with ASD may use gestures to request, protest, and regulate others’ behavior (proto-imperative) but not to share focus (proto-declarative)

What does poor JA look like?

- Child with poor JA has difficulty:
  - attending to a social partner
  - shifting attention between people and objects / events
  - drawing partner’s attention to objects or events
  - sharing affect, emotional states, or perspectives

Correlates of Joint Attention

- For typically developing children, high correlation between vocabulary size and time spent in joint attention with mother

- For children w/ASD, early JA correlates with:
  - Language gains in early intervention
  - Language skills 1 to 10 years later

Communication and Joint Attention

- Lack of commenting is hallmark of PDD/ASD, not seen in children with SLI

- Lack of gestural joint attention is significant predictor of language development
  - Charman et al (2005)

Vocabulary and Joint Attention

- Early impairment in JA interferes with learning new words in incidental learning contexts; not following the adult’s gaze means the child doesn’t attach meaning to the correct referent

A Lasting Problem . . .

- Supported JA – attending to shared topic
- Coordinated JA – attending to shared topic AND partner
- Children with ASD have most difficulty with coordinated JA
- “deficit is no less marked in children [with] relatively large vocabularies”
  - Adamson, Bakeman, Deckner, & Romski (2008)

Assessing RJA

- Identify something interesting
  - Wind up toy
  - Remote control car
- Look at it, point to it, and comment with an excited voice
- Note whether child looks at item, and more importantly looks at item, then at you, then back to item

Jones et al 2004

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Assessing IJA

- Provide some interesting items
- Do NOT say or do anything
- Wait for child to initiate by:
  - Alternating gaze between you and item
  - Gesturing toward the item
  - Verbalizing
- Be clear that the behavior is social, not requesting

Joint Attention Targets

- Orienting toward people in the social environment
- Shifting gaze between people and objects
- Sharing positive affect
- Initiating social routines
- Directing another's attention for the purpose of sharing an interesting item or event
- Commenting to share enjoyment and interests
- Recognizing emotional states of self and others

Strategies

- focusing on faces (Schertz and Odom, 2007)
- turn-taking activities (Girolametto & Weitzman, 2002)
- using child interests (Vismara & Lyons, 2007)
- tactile and visual attention-gaining strategies (Whalen et al 2006); illuminated targets (Leekam, Lopez, & Moore, 2002)

Focusing on Faces

- Be face-to-face
  - Lie on your side or stomach when child is on the floor
- Mirror play
- Hold desired item close to face
- Imitate facial expressions
- Respond to even the briefest eye contact

Turn-taking

- Begin with face-to-face play, rather than play with toys
- Turn a chance action into a game
- Intrude on isolated repetitive play
- Trade toys
- Play teasing games (e.g., chase, tickling)

Turn-taking in “People Games”

- Peek-a-boo
- Hide-and-seek
- Chase
- Horsey rides
- Up and down
- Tickling
- Bouncing on big ball
- “Pillow Mountain”
- Tug of War
- 1, 2, 3 – Jump!
- Swinging
- Ring around the rosie


Hanen, More Than Words
**Turn-taking with Objects**

- Feathers (to blow)
- Balloons
- Pinwheels
- Wind-up toys
- Rain sticks
- Bubbles
- Books w/sound buttons
- Books w/ pop-ups
- Musical instruments
- Vibrating toys

Preserve novelty by having 20+ items!

**Follow the child’s lead:**

Use the four “I” way

- Include child’s interests
- Interpret
- Imitate
- Intrude

**Include child’s interests**

- Notice what the child is doing and then join in.
- Bring what the child looks at into your shared space.
- Notice what the child is looking at and then point to the person, thing, or action accompanied by an exaggerated, “Look!”

**Interpret**

- Respond as if the child deliberately tried to communicate with you
- Use “fun” words with exaggeration—uh-oh, whee, yucky, ouch
- Say it the child’s way (Let’s play! instead of Do you want to play?)

**Imitate**

- Imitate the child’s vocalizations, gestures, body movements (exaggerate!)
- Have 2 sets of toys so you can imitate the child’s actions without taking the toy.
- If inappropriate, shape into something more appropriate (e.g., if excited child is flapping, respond with clapping).

- Model actions with objects, like pushing a car, then move to actions without objects (e.g., clapping) and then sounds (e.g., animal sounds).
Intrude

- Insist on joining in on what the child is doing, even if he doesn’t welcome you at first.
- “Keeper” strategy—join in dropping, lining up toys
- Get in the way, make “mistakes.”
- Find a similar toy and join the play. (Don’t imitate undesirable behavior.)

Tactile/Vibratory Strategies

- While child is playing with one toy, place the child’s hand on a different toy.
- While child is playing with a toy, tap or bang on another toy.
- Tap, stroke, or touch the child

Following Your Gaze

- Stare at the object you want the child to look at.
- Turn your body in the direction of the object.
- Point to the object, putting your arm close to the side of child’s head, so he can look along your arm and along your pointing finger.

RJA-Following a Point

- Engage the child in play and hide some desirable items (e.g., puzzle pieces). Initially, the objects should be at least partially visible. Start playing, and when the child realizes the item is missing, shrug your shoulders and say, “Hmm, where is it?” Then point to the object and say, “Look, there it is!”

Adapted from WWW.TRIADATVANDERBILT.COM

RJA-Shifting Gaze

- When surprising events occur (e.g., a jack-in-the-box popping up, a block tower falling over), look at the child, make an exaggerated “surprised face” and say, “Wow!” or “Uh-oh!”. If the child looks at you, reinforce with a playful response (maybe a brief tickle).

Extending JA in Play

- Example strategies:
  - Toy rotation (preserve novelty)
  - Sabotage
    - Surprises—toy hanging from ceiling
    - Silliness—toy horse wearing a wig
    - “accidents”—items spill, tear
  - Model flexible use of toys (bridging)

Stahmer, 1995
References