Why is this child different from all other children (and what am I going to do about it)?

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Outline

• Staff at early childhood centers are often the first individuals outside of a child’s immediate family to come into close contact with a child.
• As such, early childhood staff are also frequently the first individuals to notice developmental differences in some children.

Children with Developmental Disabilities – Birth to 3

Streams of Development

Each stream of development must be assessed separately. A child’s development may be normal, delayed, or atypical in one area, independently of his/her performance in the other areas.

ASD: Autism Spectrum Disorders (Autism, PDD-NOS, Asperger Syndrome)
CP: Cerebral Palsy
DLD: Developmental Language Disorders
HL: Hearing Loss (permanent, moderate to profound)
ID: Intellectual Disability (ID); formerly Mental Retardation (MR)

Disclosures

Dr. Coplan is author of The Early Language Milestone Scale-2, and Making Sense of Autistic Spectrum Disorders: Create the brightest future for your child with the best treatment options, and receives royalties on their sale.
Motor Development

• Cephalocaudad ("head to tail") progression
  – Oromotor
  – Oculomotor
  – Fine Motor
  – Gross Motor
  – Sphincter control

Oromotor

• Suck & swallow (in utero)
• Independent swallow (6 mo)
• "Smacking" (9 mo)
• Chewing (12 mo)

Oculomotor

• Conjugate gaze in all fields by 6 mo
• Intermittent esotropia normal <6 mo
• Blind eyes → Turn
• Turned eyes → Blind
  – Strabismus → Loss of stereopsis
  – → Amblyopia

Parent Concerns (four waves)

* Hits the Filter
  • Not doing well in Nursery School or Pre-K
  • Failed school readiness testing
  • Not progressing in KG

Relative contribution of Motor and Cognitive ability to different streams of development

Motor Development

% Percent

Gross Motor
  • Sitting
  • Standing
  • Walking

Fine Motor / Adaptive
  • Spoon
  • Crayon
  • Unbuttoning / Buttoning
  • Knives & Fork
  • Shoe Tying

Speech

Increasing motor contribution

Increasing cognitive contribution

J. Coplan © 2002

Play

Percent

50 100

100 0

Months

Years

Age

"Delayed Speech"

Hits the Filter

Learning, Attention, and/or Behavior Prob.
**Fine Motor / Adaptive**
- Midline hand play (3 mo)
- Reach / Grasp / Transfer (5-7 mo)
- Pincer (9-10)
- Index finger exploration (9-10)
- Tool Use (12-14)
  - Spoon
  - Crayon
- Hand preference (>12-18)

**Gross Motor**
- Righting
  - Head control (2-4 m)
  - Sitting (6-9 m)
  - Hands & Knees (9 m)
  - Standing (10-12 m)
- Walking (12+)
- Stairs (18-24 m)
- Riding toys ("Flintstone") 24 mo
- Tricycle (36 m)

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**Cognitive Development**
- Language
- Problem Solving
- Adaptive Skills
- Play

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**Definitions**
- **Language = A symbol system for the storage or exchange of information**
  - Spoken / Written languages
  - American Sign Language
  - Braille
  - Morse Code
  - Binary (computer) code

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**Wave 1**

**ID, CP, and Gross Motor Delay**

- Developmentally normal Walk ~ 13 months
- All children with Intellectual Disability: 30/1000
- ID, and Walk > 18 mo: 5/1000
- All children with CP ~ 3/1000

The most common cause of Gross Motor delay is Intellectual Disability (even though most children with Intellectual Disability have normal, or only mildly delayed Gross Motor development)
Definitions: Speech vs Language

- **Components of Language**
  - Auditory Expressive
  - Auditory Receptive (listening comprehension)
  - Visual (gestures, Sign, reading & writing)

Language Acquisition

- Auditory Expressive
- Auditory Receptive
- Visual

Pre-linguistic utterances

- **Cooing**
  - open vowels
- **Monosyllabic babbling**
  - ma, ba, da, ga
- **Polysyllabic babbling**
  - lalala, nanana, mamama, dadada, etc

Pre-linguistic utterances

- **Birth to ~ 9 mo: Universal**
  - Regardless of language of rearing
  - Regardless of ability to hear
- **After 9 mo:**
  - Hearing infants: emulate language of rearing
  - Deaf infants: Loss of babbling
Reciprocal Vocalization

- Newborn infants imitate facial models provided by adults – even before they have seen a human face


Aud. Expressive: Linguistic

- Prelinguistic utterances
- Reciprocal Vocalization
- Single words
  - Common objects; wants
- 2-word phrases
  - “Go store,” “Where’s daddy?” etc.
- Telegraphic speech
  - Omits tense endings, conjunctions, helper verbs
  - “Me want cookie!”
- Sentences

Auditory Expressive: Intelligibility (Clarity)

- “How much of your child’s speech can a stranger understand, if they don’t know in advance what your child is trying to say?”
- Rule of 4’s:
  - Age in Yrs / 4 = % intelligible
    - 1 yr: 1/4
    - 2 yr: 2/4
    - 3 yr: 3/4
    - 4 yr: 4/4
Auditory Receptive: Pre-Linguistic
- Alerting to sound (0-1 mo)
- Recognition of voice/sound (~3 mo)
- Orienting to sound (5-9 mo)
  - Recognizes own name (9 mo)
  - Follows commands
    - Understands “No” (9 mo)
    - 1-step commands with gesture: (9 mo)
    - 1-step commands w/o gesture (12 mo)
    - 2-step commands (24 mo)
    - etc.

Auditory Receptive: Linguistic
- Alerting to sound (0-1 mo)
- Recognition of voice/sound (~3 mo)
- Orienting to sound (5-9 mo)
  - Recognizes own name (9 mo)
  - Follows commands
    - Understands “No” (9 mo)
    - 1-step commands with gesture: (9 mo)
    - 1-step commands w/o gesture (12 mo)
    - 2-step commands (24 mo)
    - etc.

Auditory Receptive

Orienting to sound
Visual Language

- Pre-Linguistic
  - Eye contact
  - Social smile
  - Visual recognition
  - Gesture games

  • Points to desired objects
  • Finger counting
  • Sign

Visual

 points to desired objects


A simple mnemonic
As easy as 1-2-3-4

<table>
<thead>
<tr>
<th>Age</th>
<th>Auditory Expressive</th>
<th>Auditory Receptive</th>
<th>Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 yr</td>
<td>1 single word</td>
<td>1/4</td>
<td>1-step commands</td>
</tr>
<tr>
<td>2 yr</td>
<td>2 word phrases</td>
<td>2/4</td>
<td>2-step commands</td>
</tr>
<tr>
<td>3 yr</td>
<td>3-5 word phrases</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3 yr</td>
<td>Sentences</td>
<td>3/4</td>
<td>3-step commands</td>
</tr>
<tr>
<td>4 yr</td>
<td>---</td>
<td>4/4</td>
<td>---</td>
</tr>
</tbody>
</table>

Delayed Speech or Language

- Most common developmental concern of childhood
  - 5 to 10% of preschool children
  - May occur in isolation, but frequently indicative of broader underlying developmental disorder
Evaluation of the child with “Delayed Speech”

- Is it delayed speech, or delayed language?
- What is child’s cognitive level?
- Rule out hearing loss
- Any signs of oromotor impairment?
- Any signs of atypicality?

“Delayed Speech” vs. Delayed Language

Isolated speech delay (AE only)
- Oromotor issues
- Developmental Language disorder
- Hearing loss

Delayed Language (AE + AR & Visual)
- Intellectual Disability
- Autism Spectrum Disorder

Cognitive Level

- Intelligence
  - Language
  - Problem-Solving
  - Adaptive (self-care) skills
  - Play
Problem-Solving

1” Cubes
- Takes one: 6 m
- Transfers: 7 m
- Bangs two: 9 m
- Takes three: 10-12 m
- Copies
  - 14 m
  - 18 m
  - 24-27 m
- Builds:
  - 30-36 m
  - 3 1/2 yr
  - 4 yr
  - 5 yr
  - 6 yr

Crayon
- Mouths: < 9 m
- Makes marks 10-12 m
- Scribbles p demo: 14 m
- Scribbles spont: 16 m
- Alternates from stroke to scribble: 22 m
- Draws:
  - 30-36 m
  - 3 1/2 yr
  - 4 yr
  - 5 yr
  - 6 yr

Problem-Solving

Copies
- Builds:
  - 14 m
  - 18 m
  - 24-27 m
- Draws:
  - 30-36 m
  - 3 1/2 yr
  - 4 yr
  - 5 yr
  - 6 yr

Fine Motor / Adaptive

- Tools (Spoon; ~ 12 mo)
- Fasteners
  - Unbuttoning, buttoning (33-36 mo)
  - Zippers, snaps (~ 48 mo)
  - Shoe tying (5 yr)
- Toilet training (less reliable)

Play

- Midline hand play (3 mo)
- Banging & Mouthing (7 - 9 mo)
- Casting (12 mo)
- Tools (crayon) ~ 14 mo
- Cause & Effect (14 to 16 mo & up)
- Imitative Play (24 mo)
- Imaginative Play (36 mo)
- Rule-based Play (48 mo)

Intellectual Disability

- Significantly subaverage general intelligence
- Language (Aud Exp, Aud Recep, and Visual)
- Problem-Solving
  - Object permanence, Tools, Cause & effect
- Delayed adaptive skills
  - Self-feeding, self-grooming, self-dressing
- Onset during the developmental period (birth to 5)
Evaluation of the child with “Delayed Speech”
• Is it delayed speech, or delayed language?
• What is child’s cognitive level?
  ➢ Rule out hearing loss
• Any signs of oromotor impairment?
• Any signs of atypicality?

Hearing Loss
• Rule #1: You cannot detect HL at the bedside
• Rule #2: When in doubt, refer to Rule #1

Evaluation of the child with “Delayed Speech”
• Is it delayed speech, or delayed language?
• What is child’s cognitive level?
• Rule out hearing loss
  ➢ Any signs of oromotor impairment?
• Any signs of atypicality?

Oromotor Impairment
• Abnormalities of Oromotor Function
  – “Poor feeder” – “Didn’t latch” to breast
  – Prolonged feedings
  – Excess drooling for age
  – Choking or Coughing on feeds
  – Nasal escape of liquids
  – ? Recurrent ear infections
  – Hypernasal speech
  – Unclear or limited speech

Kanner, L. Autistic Disturbances of Affective Contact; 1943
www.drcoplan.com
Impaired Socialization

- “Aloof”
- “Withdrawn”
- Limited eye contact
- Indifferent to others

Idiosyncratic Language

- Echolalia
- Delayed Echolalia
- Pronoun Reversal
- Odd inflection

Repetitious Behaviors

- Rigid Routines
- Stereotypies
- Lining up / spinning objects

Unusual sensory responses

- “Petrified of vacuum cleaner”
- Drawn to, or afraid of, spinning objects
- Mouthing behavior
- Ingesting inedible materials
- Food selectivity
Social Interaction

“Our child is among us, but not with us.”
Parent of a 4 year old with ASD

Clinical Domain

<table>
<thead>
<tr>
<th>Decreasing Atypicality / Increasing Age</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No eye contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No physical</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>affection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cannot be engaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in imitative tasks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intermittent eye contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seeks affection “on his own terms”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>May invade personal space of others (not true affection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engageable in imitative tasks, although with difficulty</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good eye contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shows interest in others, but often does not know how to join in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easily engaged in imitative activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rigid; has difficulty if perceives that rules have been broken</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difficulty with “Theory of Mind” tasks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Theory of Mind

- Realization that other people have an internal mental & emotional state, different from one’s own
- Ability to gauge the internal mental & emotional state of others
  - Able to infer motives & predict behavior of others
  - Empathy
  - Humor

What's happening in this picture?
“The man is drowning.”

“The man is swimming, and the car is about to fall on him.”

“The girl is screaming.”

“Language

“My child talks, but he doesn’t communicate.”

*Mother of a 3 year old with autism*
Language Deficits in ASD

- **Pragmatics**: Use of language for the purpose of social interaction
  - Framing
  - Topic maintenance
  - Conversational repair
  - Impaired Pragmatics:
    - Nonverbal
    - Echolalia, delayed echolalia
    - Off-topic responses
    - Person talks “at” rather than “with” partner

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Repetitious Behavior

“*My child has over-attention deficit disorder.*”

*Father of a 10 year old with autism and perseverative behavior*

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Quantifying severity of ASD - 2

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Language-Pragmatics-Prosody</td>
<td>Nonverbal response to voice: may “not hear”</td>
<td>Echolalia, Delayed echolalia</td>
<td>Impaired fluency, but literal; lacks understanding of verbal nuances</td>
</tr>
<tr>
<td></td>
<td>May use “hand-over-hand” to guide caregiver to desired objects</td>
<td>Uses visual communication modalities (symbol cards, sign language)</td>
<td>Pragmatics (framing, turn-taking, topic maintenance; conversational repair: talks “at” rather than “with” others) and Theory of Mind language tasks (hibbing; humor; verbal make-believe)</td>
</tr>
</tbody>
</table>

---

Quantifying severity of ASD - 3

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Repetitious Behaviors Cognitive</td>
<td>Extreme distress if routines are changed or when required to transition from one task to another</td>
<td>Same, but with diminishing level of distress; able to accept verbal preparation for changes in routine</td>
<td>May demonstrate conscious awareness of preference for routines; easier to self-modulate</td>
</tr>
<tr>
<td></td>
<td>Fascination with odd objects (tags, wheels, tires, etc.)</td>
<td>Complex repetitive play (lining up objects, memorizes numbers, letters, etc.)</td>
<td>Problems with Central Coherence</td>
</tr>
<tr>
<td>Motoric</td>
<td>Frequent, intense stereotyped movements (flapping, spinning, toe-walking, finger twisting)</td>
<td>Motor stereotypes reduced; may re-emerge when excited</td>
<td>Motor stereotypes rare or absent</td>
</tr>
</tbody>
</table>

What's happening in this picture?

"The man is trying to fix the truck."

What's happening in this picture?

"The man is playing with his dog. The truck can't go because all the people are in the way."

What's happening in this picture?

"He's cleaning the truck. The driver is distressed because it's taking so long."
Q: Who is that?
A: A grandmother.

Q: Whose grandmother is she?
A: I don’t know.

Q: Who sent her the letter?
A: “The policeman?”

### Quantifying severity of ASD - 4

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Decreasing Atypicality / Increasing Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severe / Youngest</td>
</tr>
<tr>
<td>4. Sensorimotor</td>
<td></td>
</tr>
<tr>
<td>Intense aversion or attraction to specific classes of stimuli</td>
<td>• Auditory: Hyperacusis, covers ears, acts deaf • Visual: self-stimulation (lights/patterns), looks at objects from odd angles • Tactile: rubbing, licking, mouthing, deep pressure, averse to light touch • Olfactory: Sniffing • Extreme food selectivity • Pain threshold • Fear: Heightened / blunted</td>
</tr>
</tbody>
</table>


### Abnormal responses to sensory stimuli

Gross Motor Delay

"Delayed Speech"

Hits the Filter * Learning, Attention, and/or Behavior Prob.

12 24 36 48 5 6 7 8+ Months Age

"This child stands out from the crowd....."

I see a problem...

• Now what?

ON DEATH AND DYING

What the dying have to teach doctors, nurses, clergy and their own families

"If you want the truth, you must tell lies" - Elia Kazan

Elisabeth Kubler-Ross

Kubler-Ross Stages applied to Parents of Children with disabilities

YOU ARE HERE

Kubler-Ross Stages applied to Parents of Children with disabilities

http://www.ekrfoundation.org/five-stages-of-grief/
Talking to parents

• Get backup
  – Speak to your director
  – Or, if you are the director: Speak to all of your staff who have knowledge of the child

• If possible, meet with both parents
  – “This is important”
  – Promotes family function
    • Don’t leave dad out of the picture
    • One parent (usually – mom) may already be concerned
  – Go to www.drcoplan.com and view webinar “Family Function in children with ASD” (link is on home page)

Family Function

• The unit of treatment is the family
• Fostering the family’s ability to move forward is your #1 goal. The child’s parents & siblings will be involved long after you have left the stage.

Talking to parents

• Test the water
  – “I was wondering if either of you have any questions or concerns about [child’s name] development?”
  – If you adhered to Suggestion #1, now you will probably get different answers from mom & dad
    • “What do you think about what your [husband / wife] just said?”

• Take the plunge
  – [I / My staff and I] would like to check our perceptions with you about a few things. Have you ever noticed / had any concerns about….?
    • Instead of informing, you are framing a question for the parents to address
    • Parents need to feel that they have been listened to. This is more important than “informing” them.
Talking to parents

• If this is their first intimation of a problem: Be prepared...
  – Shock / Denial / Anger
  – Initially, these are protective responses
• Be an active listener:
  – Respect and validate the parents' feelings
• Remain calm
  – No need to defend your professionalism

Talking to parents

• Offer resources
  – Developmental
    – Early Intervention
      – Google: “Early Intervention PA”
  – Medical
    • Refer back to primary care pediatrician
    • Developmental Pediatrician
      – See “What is a neurodevelopmental pediatrician?” (www.drcoplan.com)

Goals of Developmental Pediatrics:

• Optimize developmental outcome
• Developmental Diagnosis
• Etiologic Diagnosis
• Associated Medical Conditions
• Formulation of Therapy Program
• Prognosis / Iterative re-evaluation
• Optimize Family Function

Talking to parents

• Offer to meet again
  – “I am the first to admit that it’s hard to make predictions in young children, but I also know that the earlier something is identified, the better the outcome.”
  – I would be happy to meet with you again in a few months to re-visit these questions.

Talking to parents

• Be prepared for a certain number of “walkouts”
  – Some parents do not accept the presence of a problem until after their child has been “flagged” by 2 or 3 different preschool programs...
  – Only then to parents realize that the problem is intrinsic to the child, not the school’s ability “to handle my child”
Talking to parents

• It is better to speak up, and risk losing a pupil, than it is to remain silent and “hope for the best.”

– You shall not hate your neighbor in your heart; you shall reprove your fellow and not bear a sin because of him.” (Leviticus 19:17)