14 Language Acquisition in Special Populations

Today, we will talk about......
- Language acquisition in atypical populations
  - Specific language impairment
  - Autism
  - Intellectual disability
    - Down Syndrome
    - Williams Syndrome
  - Hearing impairment
- What can special populations tell us about the process of language acquisition?

Nativism vs. Interactionism
- Are social abilities and cognition crucial for language acquisition?
  - Nativism: Language (especially language forms; grammar) is __________ social and cognitive abilities.
  - Interactionism: Language is ________________ social and cognitive abilities.

Specific language impairment: Who are they?
- Difficulty with expressive and/or receptive language in the absence of any obvious contributing factors
  - Normal hearing
  - No evidence of motor, social, neurological impairments
  - No significant medical involvement

Language ability seems to fall behind their cognitive levels. What does this tell us?

Specific language impairment
- Cause: Unknown
- Incidence: 7/100 children affected (Tomblin et al., 1996)
- Diagnosis between 3-5 yrs.
  - Early sign is...
  - Language growth:
Communication in specific language impairment

- Phonological problems
- Limited vocabulary size, e.g., shorter MLU, reduced sentence complexity
- More grammatical errors (e.g., *me eat every day), especially omission of ...
  - e.g., *He running.
  - e.g., *The dog jump yesterday.

*Among all components of language, _______________ are particularly affected in children with SLI.*

Why do children with SLI have difficulties with grammar?

- Linguistic accounts (nativist)
  - Linguistic knowledge is innate.
  - Grammar is ...
- What causes difficulties with grammar? Two views:
  - The grammatical knowledge in these children is ...
  - The grammatical knowledge in these children is ...

What does SLI tell us about language acquisition?

- If linguistic accounts are correct– it tells us that …
  - However, why do these kids also have phonological and vocabulary problems?
- If processing accounts are correct – it tells us that ...
  - However, why is syntax more affected than other areas? Why is language more affected than IQ?

Regardless of the theoretical accounts, the problems of SLI reside in ...

Autism spectrum disorders (ASD): Some background info

- Incidence: __________ based on the CDC (2008)
- Diagnosis tends to occur around 30 months
- Cause is currently unknown, but may involve ….
- 38% have intellectual disability. However…”

Autism spectrum disorders: Who are they (DSM-V, 2013)?

- Symptoms: Individuals must show…
  - Persistent deficits in ________ and ________ across contexts, not accounted for by general developmental delays, AND
  - Repetitive and restricted and stereotyped patterns of ____________, e.g., hand or finger flapping or twisting, persistent preoccupation with parts of objects (ASD, 0:45)
  - The symptoms must be present __________
  - Symptoms together limit and impair …

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A. Wakefield
Communication in ASD (1)
- Extent of communication impairment varies.
- 20-35% of children with autism demonstrate early word use and then regress in language between 15 and 30 months.
- Note: Language impairment …

Communication in ASD (2)
- Individuals with autism may have difficulty with:
  - Turn-taking
  - Eye contact
  - Using a range of communicative functions
  - Generalizing communication from one environment/partner to another
  - Interpreting social cues (e.g., facial expression, gesture, intonation)
  - Understanding social intent (i.e., other’s mind)
- Individuals with autism may show echolalia.

Communication in autism
- For children with ASD who speak:
  - Phonology: ________________________
  - Vocabulary: Relatively preserved vocabulary
  - Morpho-syntax: some grammatical problems, which may stem from the social problems
  - Difficulty with pronouns (me/you confusion).
  - Semantics: Concrete understanding of language

What does autism tell us about language acquisition?
- Language and social interaction aren’t exactly the same thing.
  - Social abilities and language abilities don’t always go together.
  - Grammar can be learned independent of social abilities.
- Social abilities are necessary for normal language acquisition.
  - Poor social abilities delay acquisition of language

Intellectual disability
- Criteria:
  - Significant limitations in intellectual functioning, i.e., IQ at or below ________ (bottom 2% of population), AND
  - Significant limitations in __________ as expressed in conceptual, social, and practical adaptive skills.
- Caused by genetic or environmental factors
  - Down syndrome
  - Williams syndrome
  - Fetal alcohol syndrome
  - Childhood neglect
- Note: _________ in speech-language outcomes even in children with the same diagnosis and with the same level of IQ.

Down syndrome
- Cause: __________________
- Incidence: 1/800 infants
- Variable intellectual abilities (IQ=40-70)
- Account for 1/3 of all individuals with intellectual disability
Communication in Down syndrome

- Language is more impaired than other cognitive functions. *What does this tell us?*
  - Delay in phonological, lexical, and syntactic development
  - ______ is especially affected. *What does this tell us?*
  - ______ is a strength.

http://www.youtube.com/watch?v=RwlXyoHMfYA&feature=related

What does this tell us?

Williams Syndrome

- Cause: __________
- Incidence: 1/20,000 infants
- Variable intellectual abilities (IQ=40-70)

Cognitive/social characteristics of Williams Syndrome

- Highly sociable and interested in people – over-friendly
- Significantly impaired ___________ and mathematical abilities

Communication in Williams Syndrome

- Grammar (Morphology and syntax)
  - Grammatical skills is advanced for cognitive levels. *What does this tell us?*
  - However, upon closer inspection, their grammatical skills …

![Typical Williams Percent errors](image)

- Pragmatics: Conversation seems smooth but awkward.

What does Down syndrome and Williams syndrome tell us about language acquisition?

- Cognitive abilities and language abilities do not always go together.
  - Down syndrome:
  - Williams syndrome:

- Therefore, language and cognition are not exactly the same thing. *If you are a fan of interactionism, how could you argue against this conclusion?*

Hearing impairment: What is it?

- Hearing impairment
  - deficiency in the ability to detect/perceive sounds.
  - may vary in different ways
    - Loudness level
      - Mild
      - Moderate
      - Severe
      - Profound
    - Pitch level
Hearing impairment: Who are we focusing on here?
- Focus on children who are prelingually deafened
  - Prelingual:
  - Deaf:

Statistics
- Affects 1/1000 children
- _______ deaf children of hearing parents
- _______ deaf children of deaf parents

Language learning methods
- Language learning methods for children who are prelingually deafened
  - Sign-only method
  - Total communication method
  - Oralist (Auditory-verbal) method

What does this tell us?
- Sign-only method: American sign language (ASL)
  - Tend to have __________ in learning sign language.
  - Tend to follow typical course of (spoken) language acquisition.

Hearing impairment & Language learning methods (2)
- Total communication (TC) method
  - Spoken English plus signed English
- Oralist method (aka. Auditory-verbal method)
  - Spoken English only
- Comparisons:
  - Both teach ...
  - Each has a different view about ...

Hearing impairment & Language learning methods (3)
- Delayed spoken language acquisition
  - Although the capacity to learn language is intact, the access to (spoken) linguistic input is restricted.
  - Extent of (spoken) language impairment is related to how much language exposure (i.e., input) a child gets.
  - Degree of hearing loss
  - Audibility (Stiles et al., 2012)
  - Age of onset: when the hearing loss began (0 vs. 1 yrs)
  - Age of identification (Yoshinaga-Itano et al., 1998)

Pragmatics: similar communicative intents to typical children.
- Phonology
  - Initial phonological development is similar – diverges at the stage of babbling
  - 15-55% attain intelligible speech
- Vocabulary
  - Delayed vocabulary acquisition
  - Smaller vocabulary sizes overall, but similar semantic organization
- Morphosyntax
  - Significant delays
Hearing impairment & cochlear implants (CIs)

- CIs are devices that …

http://www.youtube.com/watch?v=SpKKYBkJ9Hw&noredirect=1 (Simulation of CI)

Hearing impairment & cochlear implants (2)

- CIs appear to provide stronger speech-language outcomes in spoken language for deaf children than hearing aids (Tomblin et al. 1998). However, there is ….

- Controversy: see Sound and Fury on YouTube

(Niparko et al., 2010, *JAMA*)