Psych 56L/ Ling 51: Acquisition of Language

Lecture 8
Phonological Development III

Announcements

HW1 graded – check to see your score and any you may have answered incorrectly (you may need to check with your group mates if you worked in a group)

Be preparing for the midterm on 11/4/14 (review questions, HW1, first part of HW2)
- Given through EEE
- Can be taken either in RH 104 or wherever there’s an internet connection

Midterm review 10/30/14 in class: Remember to bring questions!

Announcements

HW2:
- Update to question 4. Some typos now corrected.
- Also, due date is now 11/20/14
  (due to no class on Veterans Day 11/11/14)

Phonological development once speech begins
Sample speech

http://www.youtube.com/watch?v=j591kkLwauA&feature=related
15-month-old talking about the vegetables she’s eating

Word production

First words: simple syllable structure, often single syllables or reduplicated syllables (baba, dada). Usually involve the sounds that appear in the noncanonical babbling stage.

Phonological idioms: words the child produces in a very adultlike way while still incorrectly producing other words that use the very same sounds. This demonstrates that children don’t really understand that words are broken down into sounds (phonemes), and are just producing some words as unanalyzed chunks (like idioms).

Ex: “ball” [correct: ball, [bɔl]] vs. “widdle” [correct: little, [lɪrəl]]

Phonological process development

18 months: children have developed systematic ways to alter the target language so it fits the sounds they’re able to produce (baby accent). These systematic transformations are called phonological processes. Most often children either drop the tough sounds (deletion) or replace them with sounds they can produce (substitution).

This happens a lot! More than 90% of words produced by some children show deletion or substitution processes.

Example of altered pronunciation

http://www.youtube.com/watch?v=4azD_gNz0rw&feature=player_embedded

Pronouncing “popsicle”
Example of phonological development

The evolution of “water”
http://www.ted.com/talks/deb_roy_the_birth_of_a_word.html
(4:19 - 5:40 of 19:52)

Deletion processes

Deletion happens a lot to word-final consonants.

Final consonant deletion examples:

“dog” /dɑɡ/ → “dah” /dɑ/ “bus” /bʌs/ → “buh” /bʌ/
“boot” /but/ → “boo” /bu/ “because” /bɪkʌz/ → “becah” /bɪkʌ/

Deletion processes

Deletion can also happen when more than one consonant appears together (consonant clusters).

Consonant cluster deletion examples:

“blanket” /blɛŋkət/ →
“bring” /brɪŋ/ →
“bump” /bʌmp/ →
“stop” /stɑp/ →
“desk” /desk/ →
“school” /skul/ →
Deletion processes

Deletion can also happen when more than one consonant appears together (consonant clusters).

Consonant cluster deletion examples:

“blanket” /bleŋkət/ → “banket” /beŋkət/
“bring” /brɪŋ/ → “bing” /bɪŋ/
“bump” /bʌmp/ → “bup” /bʌp/
“stop” /stɒp/ → “top” /tɒp/
“desk” /dɛsk/ → “dek” /dɛk/
“school” /skul/ → “kool” /kul/

Deletion processes

Deletion of unstressed syllables:
Delete a syllable (usually more than one sound, and must include a vowel-like sound) if it is unstressed. (Unstressed syllables in English usually have the a as their vowel.)

Unstressed syllable deletion process examples:

“giRAFFE” /dʒɛəf/ →
“aWAY” /əwe/ →
“AlliGAtor” /ælægətər/ →
“baNAna” /bænænə/ →
“BUtterFLY” /bʌtəflaij/ →

Substitution processes

Substitution: Stopping process
Replace a fricative (consonant produced with continuous flowing air) with a stop (consonant where air flow is completely stopped). Note that the place of articulation (lips, alveolar ridge, velum, etc.) and voicing (vocal cords vibrating or not) does not change.

Stopping process examples:

“church” /tʃɑːf/ →
“sing” /sɪŋ/ →
“zebra” /ˈziːbə/ →
“thing” /θɪŋ/ →
“this” /ðɪs/ →
“shoes” /ʃuːz/ →
Substitution processes

Substitution: **Stopping** process
Replace a fricative (consonant produced with continuous flowing air) with a stop (consonant where air flow is completely stopped). Note that the place of articulation (lips, alveolar ridge, velum, etc.) and voicing (vocal cords vibrating or not) does not change.

**Stopping** process examples:

- “church” /ʃtʃ/ → “turt” /tətʃ/
- “sing” /sɪŋ/ → “ting” /tɪŋ/
- “zebra” /zɪbra/ → “debra” /dɪbra/
- “thing” /θɪŋ/ → “ting” /tɪŋ/
- “this” /ðɪs/ → “dis” /dɪs/
- “shoes” /ʃuːz/ → “tood” /tʊd/

Substitution processes

Substitution: **Gliding** process
Replace a liquid sound like /l/ or /ɹ/ with a glide sound like /j/ or /w/.

**Gliding** process examples:

- “lion” /lɑjan/ →
- “rabbit” /ræbot/ →
- “look” /lʊk/ →
- “rock” /rək/ →
- “story” /stəri/ →

Substitution processes

Substitution: **Denasalization** process
Replace a nasal sound with a non-nasal sound. Note that the place of articulation (ex: labial), manner of articulation (ex: stop) and the voicing (ex: +voice) do not change. (You can get this effect yourself by holding your nose when you say words.)

**Denasalization** process examples:

- “jam” /dʒæm/ →
- “spoon” /spaʊn/ →
- “sing” /sɪŋ/ →
Substitution processes

Substitution: Denasalization process
Replace a nasal sound with a non-nasal sound. Note that the place of articulation (ex: labial), manner of articulation (ex: stop) and the voicing (ex: +voice) do not change. (You can get this effect yourself by holding your nose when you say words.)

Denasalization process examples:

“jam” /dʒæm/ → “jab” /dʒæb/
“spoon” /spun/ → “spood” /spud/
“sing” /sɪŋ/ → “sig” /sɪɡ/

Substitution processes

Substitution: Fronting process
Replace a sound with a sound that is made more towards the front of the mouth. Note that the manner of articulation and the voicing do not change – just the place of articulation does.

Fronting process examples:

“thumb” /θʌm/ →
“ship” /ʃɪp/ →
“jump” /dʒʌmp/ →
“chalk” /tʃɔk/ →
“key” /ki/ →
“go” /ɡo/ →

Substitution processes

Substitution: Assimilation process
A sound becomes more similar to another (usually nearby) sound by taking on one or more of that other sound’s features – voicing, place of articulation, manner of articulation. This is sometimes called consonant harmony or vowel harmony.

Assimilation process examples:

“pig” /pɪɡ/ →
“push” /pʊʃ/ →
“duck” /dʌk/ →
“doggy” /dɒɡi/ →
“self” /sɛlf/ →
“Kathleen” /kæθlɪn/ →

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Assimilation process examples:
“pig” /pɪɡ/ → “big” /bɪɡ/ (/p/ takes on +voice of /g/)
“push” /pʊʃ/ → “bush” /bʊʃ/ (/p/ takes on +voice of vowel)
“duck” /dʌk/ → “guck” /ɡʌk/ (/d/ takes on +velar of /k/)
“doggy” /dɔɡi/ → “goggy” /ɡɔɡi/ (/d/ takes on +velar of /g/)
“self” /sɛlf/ → “felf” /fɛlf/ (/s/ takes on +labiodental of /f/)
“Kathleen” /kæθlin/ → “Kakleen” /kæklin/ (/θ/ takes on +stop, +velar of /k/)

Phonological process development

Often, more than one process will apply to a word - which makes the original word harder to decipher.

/bu/ = ???? (referent in world = poop)
/pup/ ----> final consonant deletion = /pu/
--------> assimilation with vowel = /bu/

Multiple process examples

“giraffe” /dʒəˈrɛf/ → “faffe” /fɛf/

“room” /rʊm/ → “woob” /wub/
Multiple process examples

“tent” /tɛnt/ → “det” /dɛt/

“cracker” /kraekə/ → “gwa” /gwæ/

Why do they make these errors?

Idea: Just a motor limitation. They can’t physically produce it all fast enough, but they can perceive the differences.

Child: “Gimme my guk!”
Father: “You mean your duck?”
Child: “Yes, my guk!”
Father (hands child the duck): “Okay, here’s your guk.”
Child (annoyed): “No, Daddy - I say it that way, not you.”
Recap: Phonological development

Given children’s incomplete development and lesser experience with the words of the language, they often make mistakes producing even words they’re familiar with. However, they make systematic mistakes, reflecting the underlying system they have for representing sounds.

Most of children’s errors may stem from motor limitations, since they seem able to perceive incorrect pronunciations but not correct their own. However, there are also some sounds that children have trouble perceiving correctly – which makes errors on those sounds likely due to perception issues.

Questions?

You should be able to do up through question 5 on HW2, and all of the questions from the phonological development review sheet.