**MOODLE**

**HEARING SOUNDS and BUILDING WORDS**

**Review from last time:**

**I. *natural perceptual biases*** *– universals of sound physics and perception*

* *suprasegmentals of tone, stress, pitch and intonation help babies distinguish among languages, 0-6 months*
* *learning proceeds along with memory-improving and eventually enables storing sounds and their patterns „efficiently”*
* *babies adapt their hearing within 6-12 months to their mother language and reorganize their sound perception while sorting out phonemes*

 *English develops a bias for consonant voicing vs. Mandarin*

 *English develops a bias for R vs. L vs. Korean*

= “dramatic learning” and “perceptual reorganization” over the 1st year of life (prior to mapping SOUNDS onto MEANINGS in learning words)

* *transitional probability and phonotactic constraints help to identify word boundaries*
* *anchor words help to recognize words acoustically*
* *initial learning is followed by gaining the naming insight/understanding concepts and growing vocabulary*
* *initial learning is followed by rule-learning*
* *initial learning is followed by gradual gaining of sophisticated articulation*

vs. II. CATEGORICAL PERCEPTION is the efficient way of hearing sounds of a l.;

the linguistic aspect of sound production and perception (that implies pairing with meanings) is different from its motor-sensory aspect

III. That babies can memorize stable but meaningless sound clusters doesn’t imply they gradually learn meanings to pair them with. How come?

 Sounds heard > mind representations that are fuzzy **holistic** impressions of sounds (rather than precise sound clusters w. phonetic detail stored as heard) serve as “containers for meaning“

vs. ability to discriminate sounds

14-mo olds confuse sounds if heard in unfamiliar/rare words

e.g. *líf – neem* vs. *bih – dih* where they **hear** but **ignore** the difference

* Babies’ “lexical representations” depend on how mature is their memory: children learn that “small” differences count in differentiating meanings (*bad* vs. *dad*).

CRITICAL ISSUES to consider

1. How do babies make the leap from their first poorly fitted words to composing and decomposing them?
2. How do babies gain the grammar of inflecting and forming words (through derivation and compounding)?
3. How do babies gain the grammar of irregular nouns, verbs etc.?
4. How do babies learn to predict allomorphs and use unpredictable forms?
5. How to account for how toddlers and kids, in general, deal with grammar without the support of UG?

**COMPLEX WORDS Inflection, derivation and compounding TABLE p. 171**

What words are for: Cognitive maturation eventually enables the “naming insight“

Combining morphemes > words and predicting their meanings: TABLE p. 171

3 options of word learning

2 distinct psychological mechanisms in word processing in 2 brain tracts to deal with words cf. w rules

Learning COMPOUNDS with unpredictable meanings

 Cf. Kids’ learning by ANALOGY without depending on RULES

How does the mind arrive at RULES (e.g. irregular noun plurals or past tense verbs)?

Gaining a gradual familiarity with words and storing patterns of sound combinations vs. generalizing rules

Learning allomorphs

**Remembering or** generalizing? the noun plural or verb 3 sg suffix –pronounced S, Z or IZ depending on the consonant preceding the suffix > trucks, beds and watches or...

Does analogy fit in with word-memorizing or word-forming through rules?

Why are verbs a ”problem“ for a baby while learning language if they exist in abundance in all languages? In what stages does the mind learn categories of speech that are less prominent perceptually than nouns?

**Matching words to meanings** is difficult: experiment w. 17-mo-olds p. 150

 Familiarization phase – listening to labels and seeing objects

 Phase 2: switch task – in which cases did babies spot mislabeling?

MUTUAL EXCLUSIVITY bias p. 165

2 pictures & 2 words: since I know that the one object is a hammer, the other must go by the other word that I don’t know yet

Assumption of 1 word per object

Adults’ guessing of meaning happens through associations and expectation abt what the other speaker is likely saying or thinking:

hammer can go by all sorts of names but since the most natural name for it was used it must apply to the hammer-O and not to the other O

**CONCEPTS and CATEGORIES:** What cues help babies form conceptual categories?

Prominence and stability of OBJECTS

Learning through ASSOCIATION supported by REFERENTIAL INTENT of looking, pointing, etc. = filter for learning and associating: Tomasello’s experiment

 Words cue babies’ attention to concepts that words represent

Insights to be gained:

words are social constructs that depend on shared commitment

words belong conceptually to categories – what’s the basic level category?

**QUESTIONS to review:**

What is word and What is word for? What is it in an adult's understanding?

Roughly through what stages do babies figure out what the word is all about?

And what sort of knowledge and experience precedes this "figuring out" in babies?

In the stream of speech, how are words marked/what are their boundaries, in English and another language you know?

For what reasons is the adult's foreign language learning experience so different from a baby's learning the first words in his or her mother language?

Doing sound statistics implies building a baby's grammar foundations. Explain.

What do babies hear when they hear? What do they store when hearing language? And how do they retrieve sound units to be matched against objects? (Hearing doesn't imply making sense in babies' mind.)

Comment of the experiments testing babies matching of (1) words to meanings and (2) words to categories.

Into what two streams is linguistic knowledge separated, as evident in a young baby’s learning of words?

What are the assumptions behind the object-bias seen in babies' cognitive ways to understand?

What’s implied by the fact that babies need to figure out that words aren't just sound clusters but serve to refer to the world, i.e., words are used to label REFERENTS in the process of REFERENCE?

What are some of the natural classes of sounds? What does “natural“ mean here?

What are some of the natural classes of concepts?

What role does the speaker's intent play in child's learning of words? How is joint attention reached between the baby and parents?