

#### Language Acquisition: Sebastien's Story



- At twelve months, Sebastien said his first word.
- Eight months later he is learning over nine new words a day and produces hundreds of words on a daily basis!
- He is stringing words together in ways that make sense!

#### The Challenge

- Finding clever ways to test infants, who may understand much more than they say.
- To explain how it is that we can learn a language at all.



#### Language: It's Easy, Right?

Sounds --> words --> sentences --> meaning

To a native speaker, language is reflexive, automatic...

In the words of Nike...



#### Language: It's Hard, Right?

Sounds --> words --> sentences --> meaning

To a **non-native** speaker, language goes against natural tendencies and is anything but reflexive, automatic...

In the words of Bonnie Raitt...

"a little mystery to figure out."

#### Today's Talk

- What does it take to learn a language?
- What can the latest scientific research tell us about this magical process?
- How do children learn the sounds of their language, find words in fluent speech, learn the meanings of words, learn grammar, and learn talk?
- What can clinicians, teachers, and parents do to insure a happy outcome for this process?

## What does it takes to learn a language?

- Phonology: Sounds of language.
- Segmentation: Finding units in fluent speech
- Semantics: Connecting words to meaning.
- *Grammar*: The rules for combining units and expressing new meanings.

## What do babies know about all of this?

#### Babies know a lot!

We now think that babies know phonology, segmentation, semantics, & even grammar before age 2.

"So how come it took you so long to figure out how brilliant I am?"



Because we lacked methodologies to allow us to "get into" babies' heads!

Several methods have made all the difference in what we know about babies' linguistic capabilities under age two:

- The sucking paradigm
- The headturn preference procedure
- The preferential looking paradigm

Today, I will show how these procedures help us to know what infants know

## What do infants know about Phonology?

- They suck!
- Literally!
- Ba, ba, ba, ba,... PA!
- Or Ba, ba ba, ba,... Ba!
- Even newborn get the diff!
- They can even hear phonemes they will never use!





## What does this mean for learning a 2nd language?

# NEWSFLASH: Early exposure is better!

- Children exposed to a foreign language when young,
- learn it better!
- have no accent!
- learn two languages as fast as one!



#### Helping Phonology

- Nursery Rhymes
- Alliteration
- Exposure to foreign language



## What do infants know about Segmentation?

- Another of the phonological tasks faced by an infant is to discover the words in the speech stream.
- Speech is not punctuated with spaces, commas, or periods.
- Less than 7% of the speech directed at infants consists of isolated words.

How can we tell if infants segment speech?



#### Sample Passage. <u>Feet</u> The feet were all different sizes. This girl has very big feet. Even the toes on her feet are large. The shoes gave the man red feet. His feet get sore from standing all day. The doctor wants your feet to be clean. Can infants pull the word feet from this passage?





#### Infant-Directed Speech

- We talk funny to infants.
- Infant find this utterly fasinatig, and...
- Infant-directed speech helps children segment. (Theissen, Hill, & Saffran, 2005).

What do infants know about Semantics?

#### Emma's First Word



#### What's wrong with this "word"?

- How would we know a "real" word?
- How could we tell if Emma really understood before she spoke?

#### Preferential Looking Tincoff & Jusczyk, 1999



6-month-olds looked longer at mommy when asked for mommy and longer at daddy when asked for daddy.Although most children's first words aren't until 12-months.







### What do they make of this?



#### Children could

- Overgeneralize
  - Call a cat a dog.
- Undergeneralize.
  - Fail to call Garfield a Cat.
- Frequency gives them time and opportunity to figure this out.





## What difference does it make?

Average IQ at age 3? Professional - 117 Working Class - 107 Welfare - 79

Recorded vocabulary size? Professional - 1,116 Working Class - 749 Welfare - 525 Regardless of SES, greater speech in the environment was strongly correlated with vocabulary size.

Moral of the Story: Frequency Matters!

## Are social cues important?

- Children of deaf parents do not learn spoken language by watching TV.
- The more difficulty infants have following eye gaze (aka Autism), the harder it is to learn a spoken language.
- Tomasello finds that infants only learn a word if speaker intended to label it.

#### Constraints on Meaning

- Children develop heuristics (rules) to guess what new words might mean.
- Words generally label objects and their shape, not color (shape-bias).
- New words label new objects.
- Proper Names label one thing.
- Nouns label nouns, verbs/verbs, etc.

### Grammatical Morphology



"These are blickets OR "These are blickish



# "Blah, blah, blah... apple?





The answer is not in the question! Subject-question: **"What hit the flower?"** Object-question: **"What did the apple hit?"** 

## 20-month-old Results



### Results

- 20-month-olds looked significantly longer to the target for all three question types;
- Not due to preference for one object.
- Not simply looking at object mentioned.
- These results suggest that infants are processing more than just the surface features of a question.

So infants understand some grammar even before they talk





#### Telegraphic Speech: Getting the right order

- 2-year-olds' speech is often telegraphic: just the important words.
  - Elmo eats (agent + action).
  - Big Cookie! (attribute + entity)
  - My Cookie! (possessor + possession).
  - Gimme Cookie (action + object)





Good News to Teachers, Clinicians, and Parents

#### Moral of the Story

- Talk to your children early and often.
- They will better off because of it.

