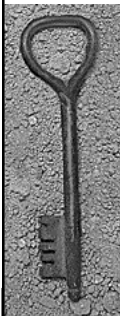




# How Children Learn the Meaning of Words

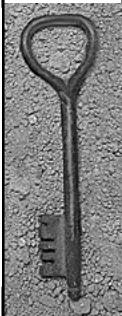
Paul Bloom (2000)

Presented by- Lynn Chan  
Dec 1, 2004

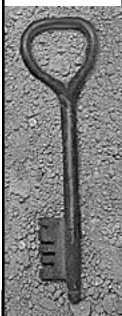


## Lexical development

6-10 months	Babbling
10-18 months	Single-word utterances
18 months	two-word utterances
2 year 6 months	full-sentences



## Very first words of 1 child

## Lexical Acquisition Theories

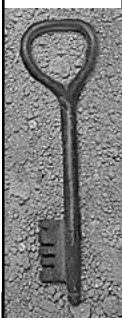
- ◆ Associationism (Skinner, 1957)
  - connects the event and the word
- ◆ Connectism (Plunkett, 1997)
  - statistical based learning from all the stimuli
- ◆ Theory of Mind



Example-



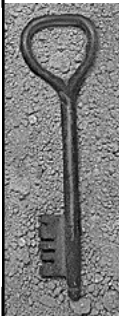
mahu makan biskuit?



Example-



mahu makan biskuit?



## Associationism- Locke (1690)

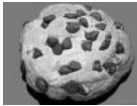
◆ “... to make children understand what the names of simple ideas or substances stand for, people ordinarily

1. show them the thing whereof they would have them have the idea
2. repeat the name that it stands for “



## Associationism

Situation-

1. see an object - 
2. hear the word – “biskuit”

‘Biskuit’ =





## Challenges for Locke's Theory

- ◆ the child is NOT looking at the cookie while hearing the word “biskuit”

Example-

child- look at adult's face (not the cookie)

- hear the word “biskuit”

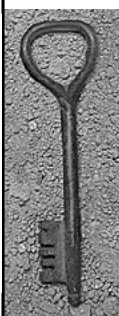
mapping error?

Adult face = “biskuit”



## Theory of Mind (Bloom)

- ◆ Children are active observers (around 12-month old)
  - follow finger pointing
  - observe adult's gaze
- ◆ Instead of a mapping the word to what the baby sees, the baby will know what the adult's referent is using ToM.

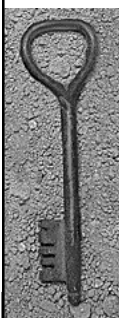


## Experiment (Baldwin, 1991)

- ♦ baby –look at an object A
- ♦ adult – look at an object B in the bucket (where the baby can't see) and say “modi”
- ♦ adult later took out object B from the bucket, baby was told to “find modi”.

Experiment result- “modi”= object B

Locke's Theory - “modi”= object A(the one baby looked at)



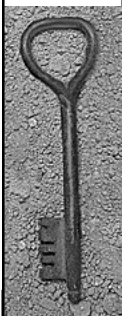
## Lexical Contrast

- ♦ When hearing a new word, children tends to look for an object that they do not have a name for.
- ♦ Mutual Exclusivity Principle (Markmam & Wachtel, 1988)
  - children are bias to think that words should not have overlapping reference
  - ie. each object can only have 1 label



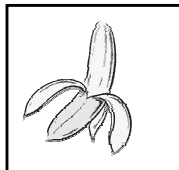
## Lexical Contract -cont

- ◆ Markman → Children apply constraints when learning the meaning of new words.

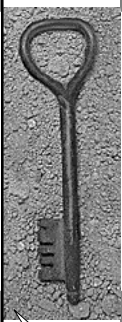


## Lexical Contract -cont

- ◆ Markman → Children apply constraints when learning the meaning of new words.


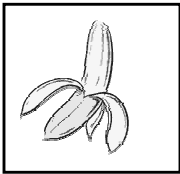


Mutual Exclusivity Bias



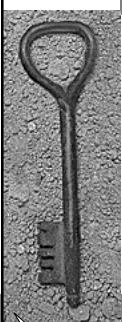
## Lexical Contract -cont

- ◆ Markman → Children apply constraints when learning the meaning of new words.




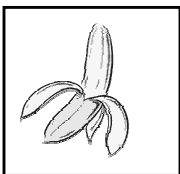
Show me the lax

Mutual Exclusivity Bias



## Lexical Contract -cont

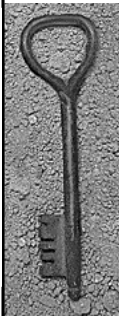
- ◆ Markman → Children apply constraints when learning the meaning of new words.



Show me the lax

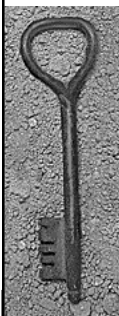
Mutual Exclusivity Bias





## Origin of Lexical Contrast

1. innate or acquired in language development (Mervis, Golinkoff & Bertrand, 1994)
2. General principle of learning (Markman, 1992)
3. Theory of Mind (Bloom)



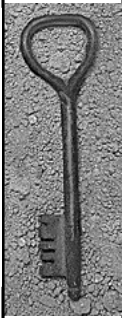
## Lexical Contrast- ToM

♦ “Show me a lax”

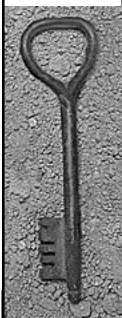


1. I know a banana is call a “banana”
2. If the speaker meant to refer to banana, she would say “banana”
3. But she didn’t, she used a new word “lax”
4. So, she must mean something OTHER THAN banana
5. “Lax” must be





## Very first words of 1 child

## Children's Early Vocabularies

- ◆ object names make up the largest portion of children's early vocab
- ◆ Children are bias to interpret new words as object names. (Macnamara, 1974)



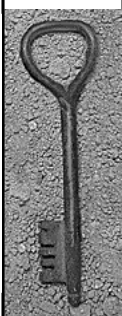
## Spelke-Object

- ◆ Principle of cohesion
  - object is connected and bounded region of matter that maintain these properties when in motion
- ◆ Principle of Continuity
  - objects doesn't pass through each other
- ◆ Principle of Solidity
- ◆ Principle of Contact
  - objects move if and only if touched



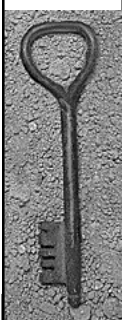
## Whole Object Bias

- ◆ “children is predisposed to treat new words as a whole object because we are predisposed to think of the world as containing whole object” (Gentner, 1982)
- ◆ example
  - a child sees a rabbit, and hear a new word “rabbit”
  - “rabbit” refers to the whole object “rabbit”, not parts of the “rabbit”



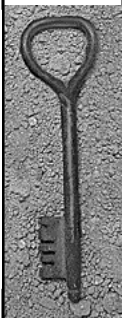
## Challenges

- ◆ how do children learn non-object words?
  1. substances (eg. water, milk)
  2. verbs (eg. run)
  3. adjectives (eg. hot)
  4. collective noun (eg. forest)



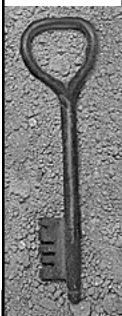
## Overcome Whole-Object Bias

1. pragmatics of the situation
  - ◆ if there are no available object, other candidates rises
    - eg. a child sees a rabbit running, and hear the word “plonk”, if the child know the word “rabbit” refers to rabbit, and don’t know any word that refers to the action of running, then “plonk” must refers to that action



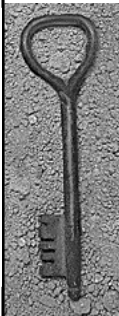
## Overcoming Whole-Object Bias Syntactic Cue

- ◆ He is **glipping** the table.
  - verb
- ◆ This is a **glippy** thing.
  - property of the object



## Discussion

- ◆ how could we implement lexical acquisition using ToM?
- ◆ Challenges for ToM?



## Challenges for Bloom's ToM in lexical acquisition

- ◆ Children are active observers (around 12-month old)
  - follow finger pointing
  - observe adult's gaze
- ◆ Instead of a mapping the word to what the baby sees, the baby will know what the adult's referent is using ToM.
- ◆ Situation
  - the child playing with a toy
  - the adult is washing the dishes while saying “kiss Daffy”

will the child think that “Daffy” refers to the dishes or the toy?