

# LIGN177: Multilingualism

October 6, 2009

Childhood multilingualism - 1

## Childhood multilingualism

- Tuesday – acquisition of L1 and L2, focus on bilinguals
- Thursday – continuation, comparison with multilinguals

## Bilingual child

- Child bilingual = child who learns two languages simultaneously in preschool years
- Child may learn both languages in the home
  - One parent, one language
- Child may learn one language in home, other at school
- L2 child = child learns one language first (L1), and then the other (L2)

## Infant speech perception

- Results of a number of studies by Janet Werker (UBC) and others show that infants < 8 months are able to discriminate between sounds of the world's languages *even if the sounds are not found in the infants' 'environment' language*

→ Young infants are 'universal listeners'

## Effects of language environment

- Werker, (1981)

English	/t/	(alveolar)
<u>Hindi</u>	/tʰ/ vs. /t/	(dental and retroflex)
	/tʰa/ vs. /dʰa/	(voiceless and voiced aspirated)

## Young infants are like Hindi adults

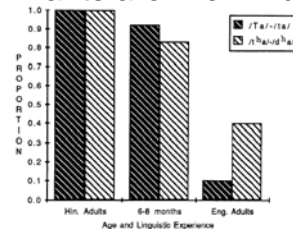


Figure 4.3  
Proportion of subjects reaching criterion as a function of age and language contrast.  
Adapted from Werker et al. 1981.

## What about older infants?

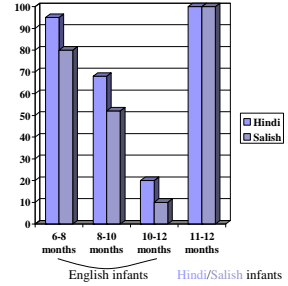
- Werker & Tees tested English 4, 8, 12 year olds and found that all were poor, but 4 year olds were actually the worst at discrimination
- Werker & Tees (1984) compared 6-8 month infants with 10-12 month infants
- Tested Hindi and Nthlakampx (Salish)

## Discrimination in 1<sup>st</sup> year

Werker & Tees (1984)

discrimination of

1. Hindi retroflex [ɽa] and dental [ta]
2. Nthlakampx (Salish) velar [k'i] and uvular [q'i]



## Discrimination in 1<sup>st</sup> year

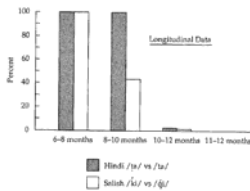
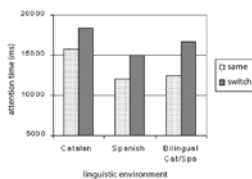


Figure 4.3 Proportion of infant subjects from three age groups and various language backgrounds reaching criterion on the Hindi and Salish contrasts, from Werker and Tees 1984a, 61.

## Summary

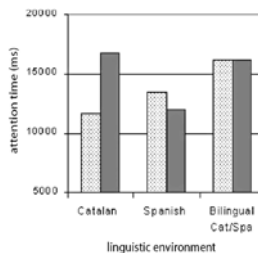
1. Infants adapt their perceptual abilities to the environment by the end of the 1<sup>st</sup> year
2. Experience with the environment language causes some perceptual contrasts to be lost
3. But, adults can be trained to discriminate sounds, and older children can acquire a new language with no accent -> ability shifts later, possibly correlated with word learning

## Bilingual perception

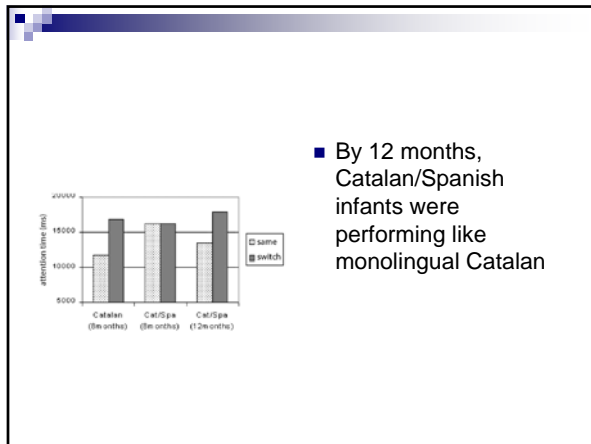


- Catalan/Spanish bilinguals perception of [e] [ɛ] distinction (Bosch & Sebastián-Gallés)
- Distinctive in Catalan, not in Spanish
- 4 months – all babies behave similarly on familiarization-preference procedure

## Bilingual perception



Bilingual infants at 8 months show differentiation from both Catalan and Spanish monolinguals



## Sound production

Children's words have simple syllable structure:  
Consonant+Vowel – emerge around 1 year

The first consonants are typically stops (t k p b d g), nasals (n m), glides (j w)  
Substitution patterns occur:

[tu] 'shoe' [ja] 'light'  
[pa] 'frog' [wi] 'read'

## First words

At the one-syllable stage, children typically produce the stressed syllable:

[dæ] "daddy" [næ] "banána"  
[wɪn] "window" [de] "potáto"

Two syllable stage:

[dædi] "daddy" [næna] "banána"  
[dedo] "potáto"

## First words – consonant cluster reduction

Consonant sequences are reduced:

[koz] "clothes" [bəp] "bump"  
[piz] "please"

In s-k, s-t, s-p sequences, s is not pronounced; in s-n or s-l sequences, s may be pronounced:

[gay] "sky" [so] 'snow'  
[bun] "spoon" [sip] 'sleep'

## Perception and production

Production lags behind perception:

Adult: *Is this your school bus?*  
Child: *Yes, my goose bus.*  
Adult: *Your goose bus?*  
Child: *No, my \*goose bus\*!* (Rejects repeated imitations.)  
Adult: *I see, it's your school bus.*  
Child: *Yes, my goose bus.*

## Production

- Child's productions are a window into developmental stages of language learning
- At the same time, they may be constrained by articulatory difficulties, which may mask the depth of their knowledge

## Bilingual production

- Early differentiation of production of segments (individual sounds)
- But production difficulties that are connected to motor control show up for both languages
- Brulard & Carr (2003) report that Tom avoided initial [f s j] in French/English but used different strategies
- Substitution patterns can differ - /r/ → [w] in English but [l] in Spanish

## Bilingual Lexicon

- Are there two lexicons?
- Children sometimes assign different meanings to synonyms in both languages:
  - bitte (German)– familiar contexts
  - please – formal contexts
- But also translate same denotations: Imedadze (1967) Georgian/Russian child – word for 'ball' was 'toy, radish, stone' in both languages

## Lexicon

- Children may go through an early stage where the lexicon is mixed, and then separation occurs
- Bilingual children generally have smaller lexicons in both languages compared to monolinguals (division of time exposure?)

## Bilingual children

- Show greater metalinguistic awareness
- Separate word from referent (arbitrary nature of sound-meaning) earlier
- More adaptive problem-solving strategies

## L2 Children - sounds

- L1 influences L2 phonology, even if learned at a young age (5-8 years old)
- However, after 1<sup>st</sup> year of exposure, children's phonological acquisition outstrips adult learners – less foreign accent

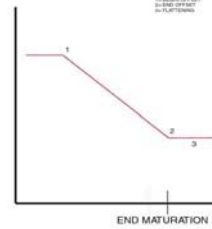
## Is there a critical period?

- The "classic" study says yes.
- Johnson & Newport (1989) compared English proficiency of Korean and Chinese immigrants to U.S.
  - Age of arrival ranged from 3 to 39
  - Length of residence in U.S. at least 3 years
  - Subjects tested on variety of English structures

## Results:

- Clear and strong advantage for early arrivals over late arrivals
- Age of arrival before puberty
  - Performance linearly related to age
- Age of arrival after puberty
  - Performance low but highly variable
  - Performance unrelated to age

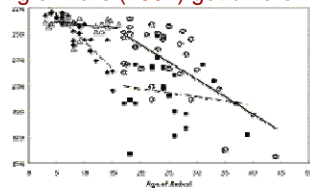
## Features of critical period



- “Temporal features”
  - Heightened sensitivity through early childhood
  - Sensitivity bottoms out when full neurocognitive maturity is reached
  - Continued low sensitivity throughout adulthood

## But...

- Reanalysis of Johnson & Newport suggests that cutoff point is 20, not puberty
- Birdsong & Molis (2001) got different results:



## Phonology

- Flege, Munro & MacKay (1995) study of English pronunciation of vowels by 240 Italians in English-speaking Canada
- Suggests a gradual decline rather than a critical period followed by cut off

