

A COGNITIVE MODEL OF CONTACT-INDUCED DIFFERENTIATION


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OVERVIEW

- Contact-induced change
- Contact-induced differentiation (CID)
- A cognitive model of differentiation
- A psycholinguistic study
- From bias to language change
- Conclusion

CONTACT-INDUCED CHANGE

| | CHANGE TO L1 (borrowing) | CHANGE TO L2 (interference/imposition) |
|--|-------------------------------------|---|
| most common  | loan words | structural convergence |
| least common | structural convergence | loan words |

CONTACT-INDUCED CHANGE

| | | |
|--|-------------------------------------|---|
| | CHANGE TO L1 (borrowing) | CHANGE TO L2 (interference/imposition) |
| most common | loan words | structural convergence differentiation of lexical forms |
|  | | |
| least common | structural convergence | loan words |

CONTACT-INDUCED DIFFERENTIATION

- Recently described cases in the literature:
 - François (2011), languages of Northern Vanuatu
 - Harvey (2011), Australian languages
- Explanations given for differentiation of lexical form are grounded in social and cultural factors

ARNAL (2011)

- Another study, Arnal (2011), gave us the initial inspiration for our hypothesis that there is a cognitive explanation for differentiation of lexical form
- Social/cultural factors may then amplify this effect

ARNAL (2011)

- Spanish and Catalan have always been in contact
 - but in recent decades the sociolinguistic situation has changed
- Migration of Spanish speakers *into* Catalonia from 1975
- 48% of Catalan speakers there have Spanish as mother tongue
 - 1998 census

ARNAL (2011)

- For centuries:
 - little contact-induced change in structure
 - non-basic loan words
 - *adorno* ‘adornment’, *resar* ‘to pray’
- Recently:
 - much change in structure
 - differentiation in lexical form

ARNAL (2011)

- *bústia* instead of *buzón* (letter-box)
- *cursa* instead of *carrera* (race)
- *endoll* instead of *enchufe* (plug)
- *entrapà* instead of *bocadillo* (sandwich)
- *llumí* instead of *cerilla* (match)

WHY A COGNITIVE EXPLANATION HYPOTHESIS?

- Differentiation of lexical forms appears to be the work of L2 speakers
- Sometimes social factors are insufficient to explain differentiation
- Distinct lexical forms lessen the cognitive load in code-switching
- Social and cultural factors can amplify this effect

DOPPELS

- CID affects what we call *doppels*

meaning and form similar in L1 and L2

close cognates

loan words

chance resemblances

DOPPELS

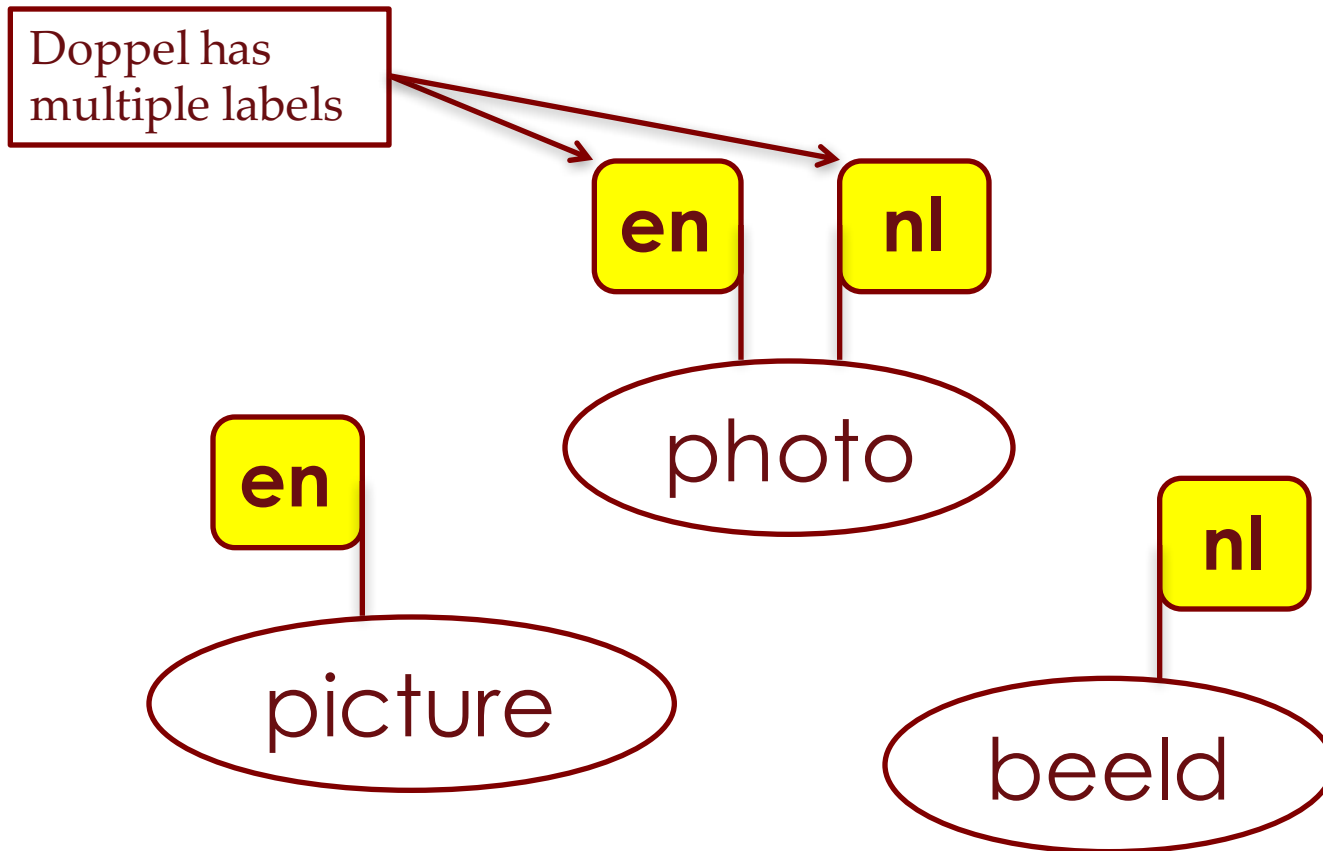
Examples

- *OK* – English and now many languages
- English *worker* Dutch *werker*
- English *information* Polish *informacja*
- English *dog* Mbabaram *dɔk*

THE COGNITIVE MODEL

- Bilinguals:
 - use a common lexical space for both languages
 - doppels are stored as a single lexical item associated with both languages

THE COMMON LEXICAL SPACE

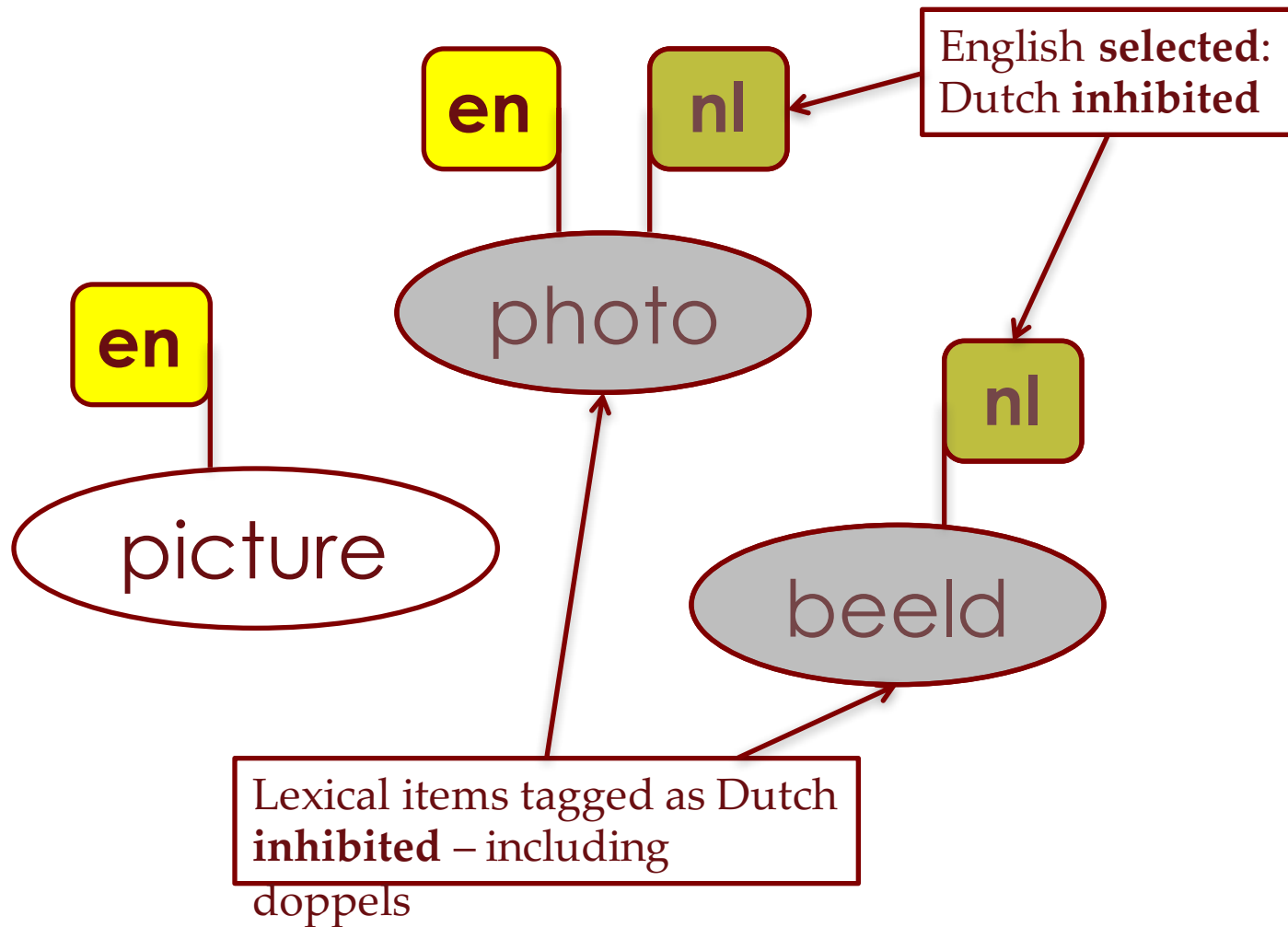


THE COGNITIVE MODEL

In bilinguals:

- L2 selection works by differentially inhibiting L1 lexical items and activating L2 lexical items

LEXICAL SELECTION AND LANGUAGE INHIBITION



THE STUDY

- *Participants:* Dutch/English bilinguals who have Dutch as their first language (plenty of doppels!)
- *Hypothesis:* The bilinguals will use fewer doppels than monolinguals.

THE STUDY

- Compiled a questionnaire
- 41 stimuli (Dutch context sentences, followed by an English sentence with a gap)
- A control group of mostly W.A. English monolinguals

AN EXAMPLE

Gisterenmiddag ben ik naar het strand geweest.

(Yesterday afternoon I went to the beach.)

I wanted to take a _____ of the sunset.

PHOTO vs PICTURE

RESPONSES

- 19 Dutch/English bilinguals
- 25 English (functionally) monolinguals

| Dutch&English | English Only |
|----------------|----------------|
| picture (14) | photo (13) |
| photo (3) | picture (10) |
| view (1) | photograph (2) |
| photograph (1) | |

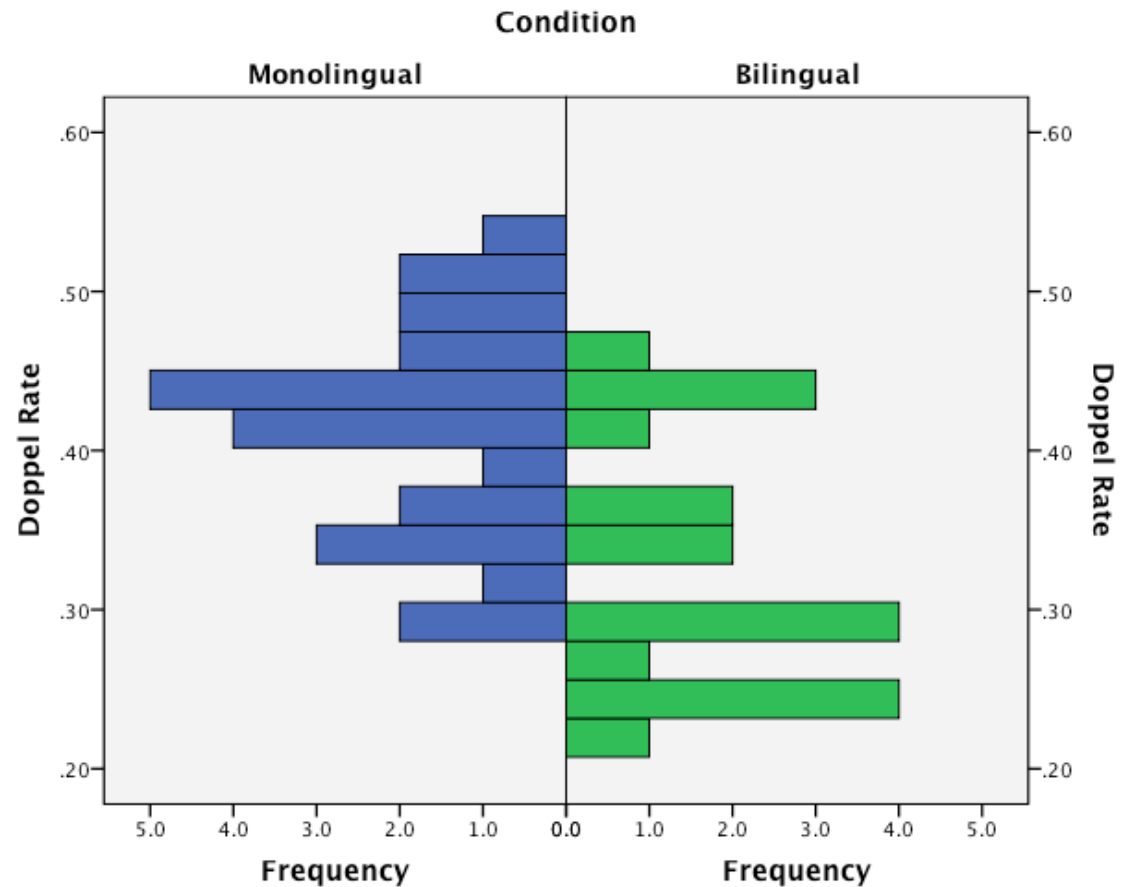
HISTOGRAM OF SUBJECT DOPPEL RATE

t-Test
independent
samples

t: -3.838

df: 42

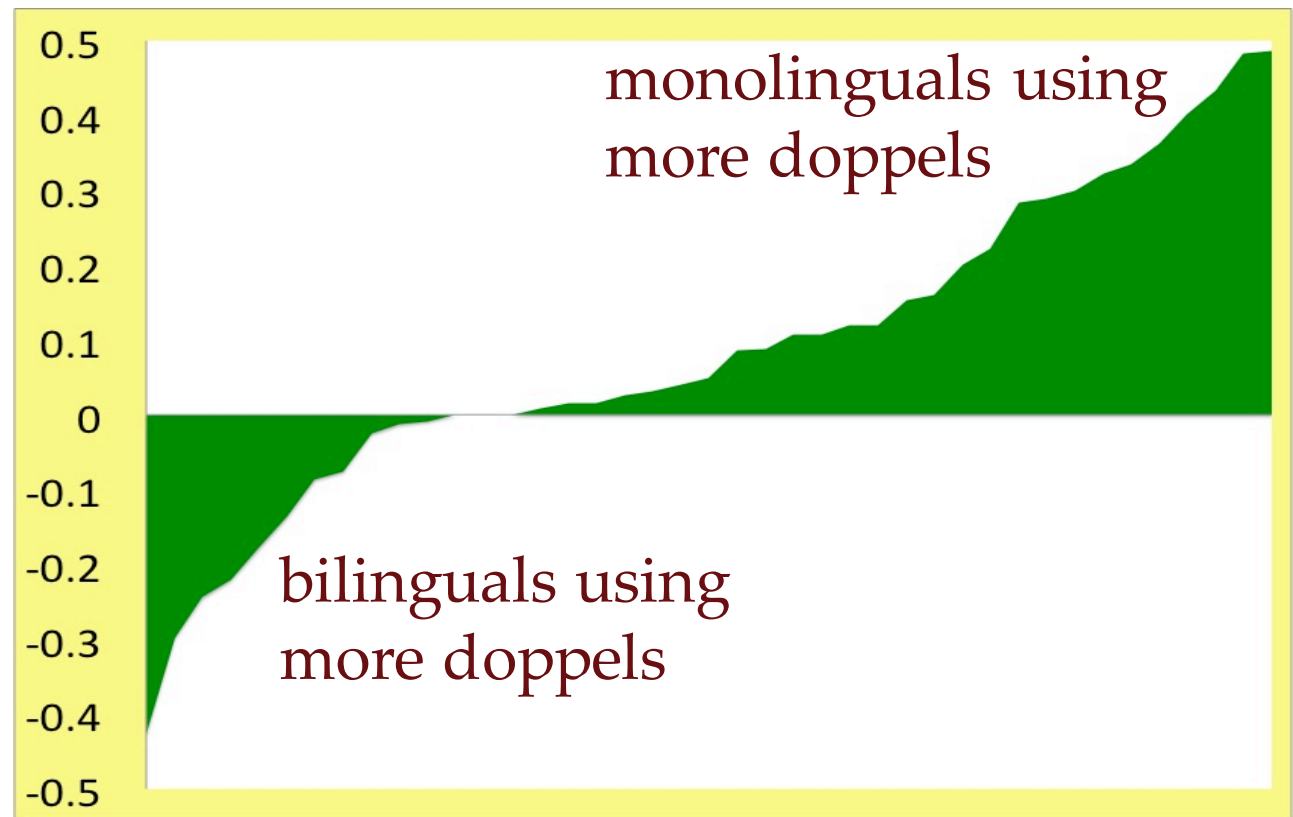
p < 0.001



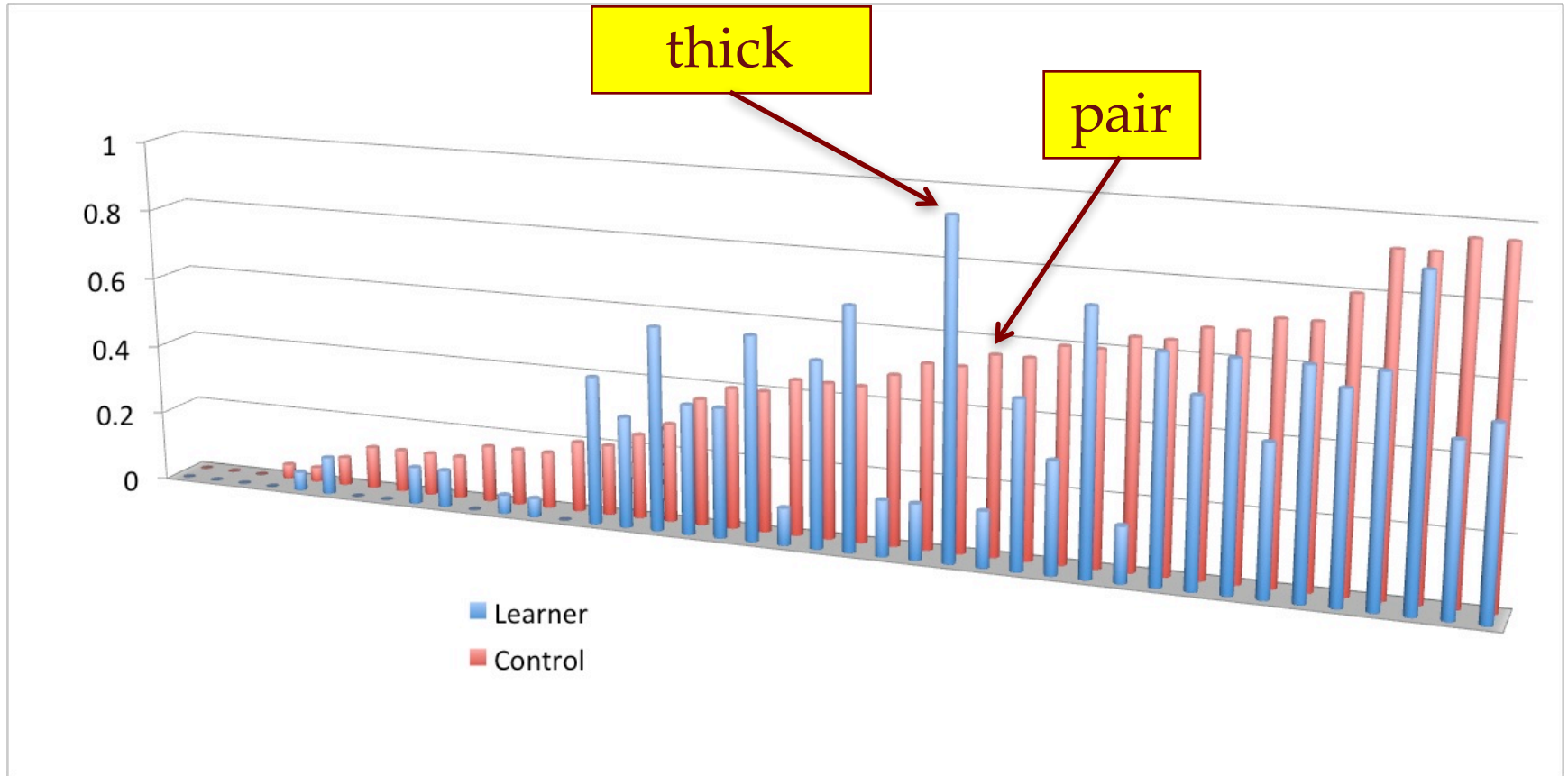
PRELIMINARY RESULTS

More doppels in monolinguals than bilinguals

by stimuli



DOPPEL-USE DIFFERENCES

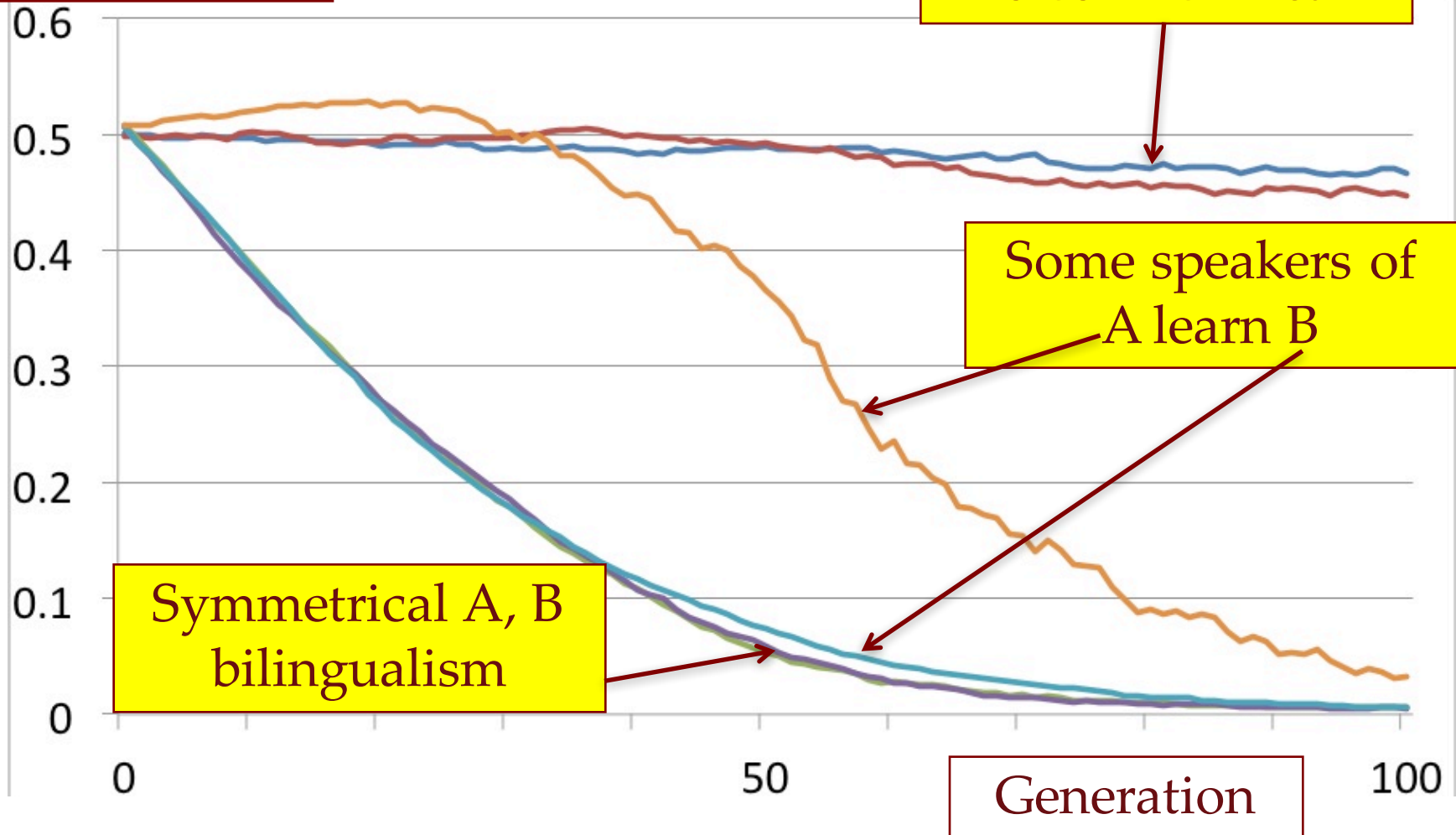


DOPPEL INHIBITION ACROSS TIME

- simulation in two languages: A and B
- one meaning, each language has 6 forms at equal frequency
- 3/6 forms shared, ie 50% doppels
- new generation distribution of forms
 - by sampling distribution of last (1000x)
- doppels' probability reduced by 5%
- 100 generations, 100 simulations mean

SIMULATION RESULTS

Doppel ratio



SIMULATION OUTCOMES

- weak pressure leads to big changes
 - 5% bias drops doppels from 50% to 6% in 50 generations
- generation not necessarily biological
 - speakers update their distributions
- the cognitive bias could be amplified by social pressure
 - leading to faster change

CONCLUSION

A cognitive account of bilingual lexical selection can account for:

- differences in distribution of word use synchronically,
- changes in doppel ratios diachronically.

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