

3rd International Conference on Language Attrition

University of Essex, July 5-7, 2016

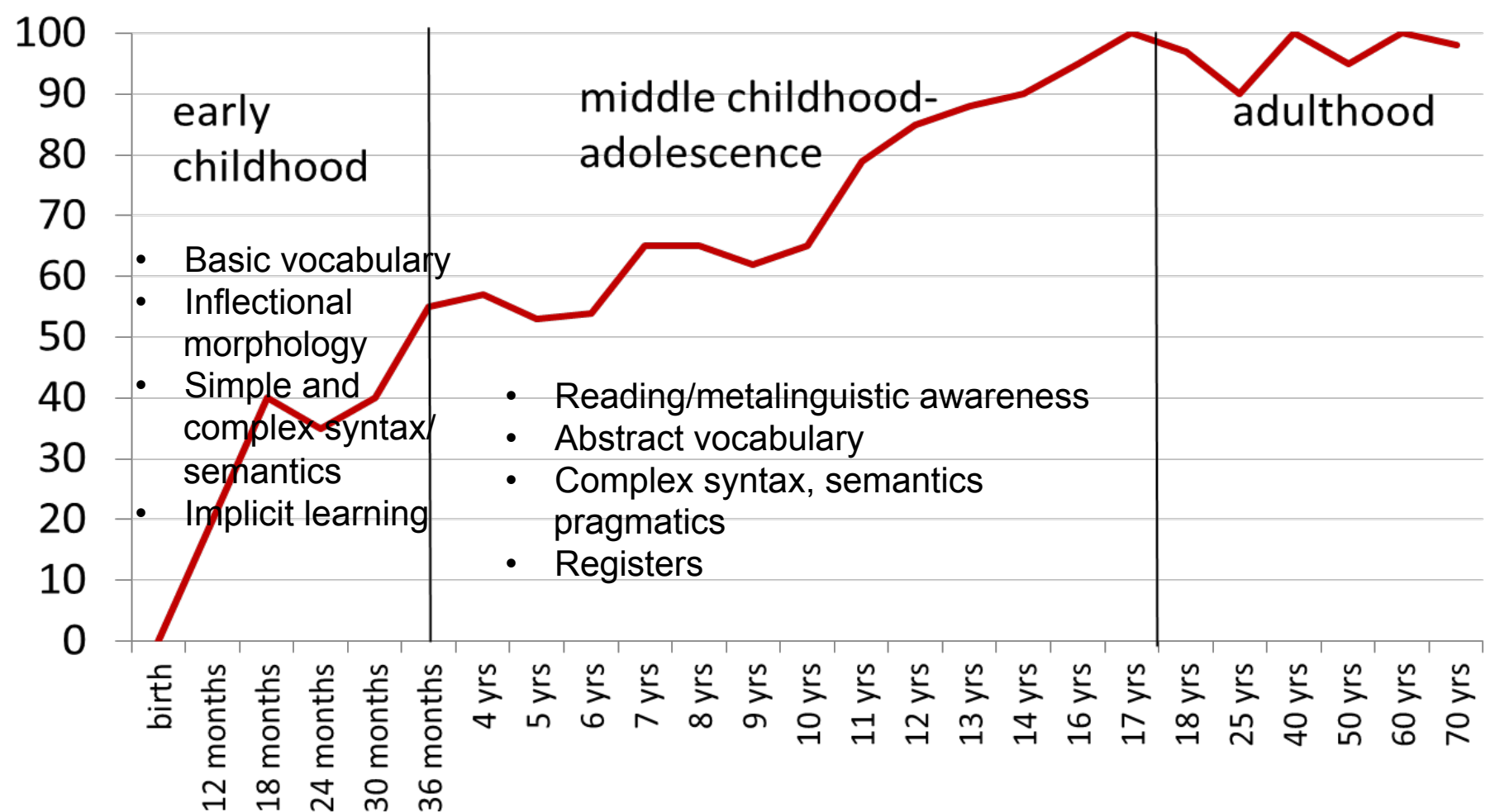
# Language Attrition and Language Transmission?

Silvina Montrul



ILLINOIS

# Idealized Route of Native Language Development



# Bilingualism and Migration

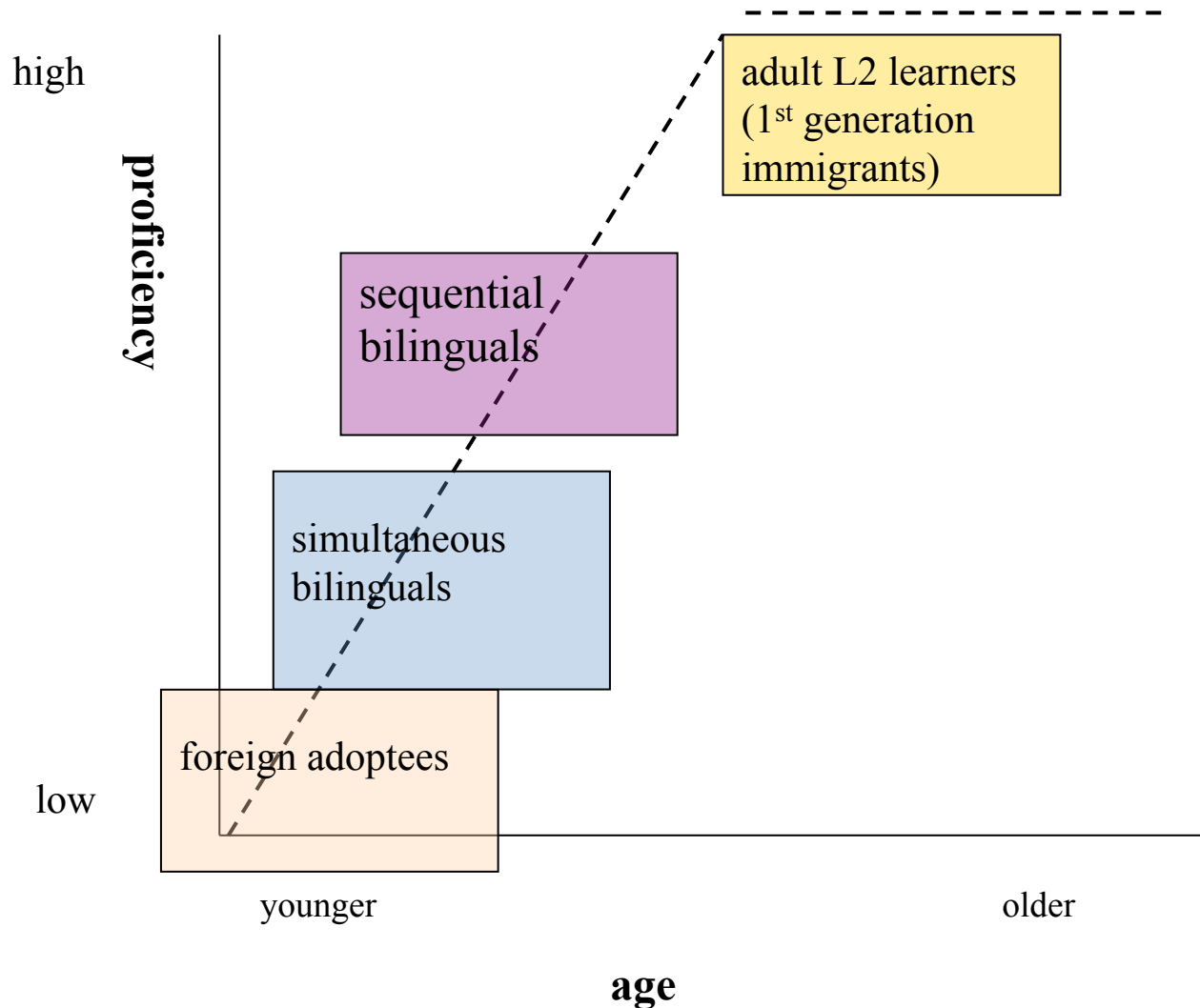
- The children of immigrants— *heritage speakers* — exposed to two languages from birth or in early childhood **do not always attain full linguistic competence** in their family language when they reach adulthood.
- Adults with more than ten years of immersion in a second language environment (immigrants) can experience **first language attrition**, namely forgetting lexical and grammatical aspects of their native language.

# Outline

1. Intergenerational Language Loss
2. **The Problem:** Can L1 attrition in adults affect heritage language development?
3. The state of my answer

# Age effects in L1 Attrition

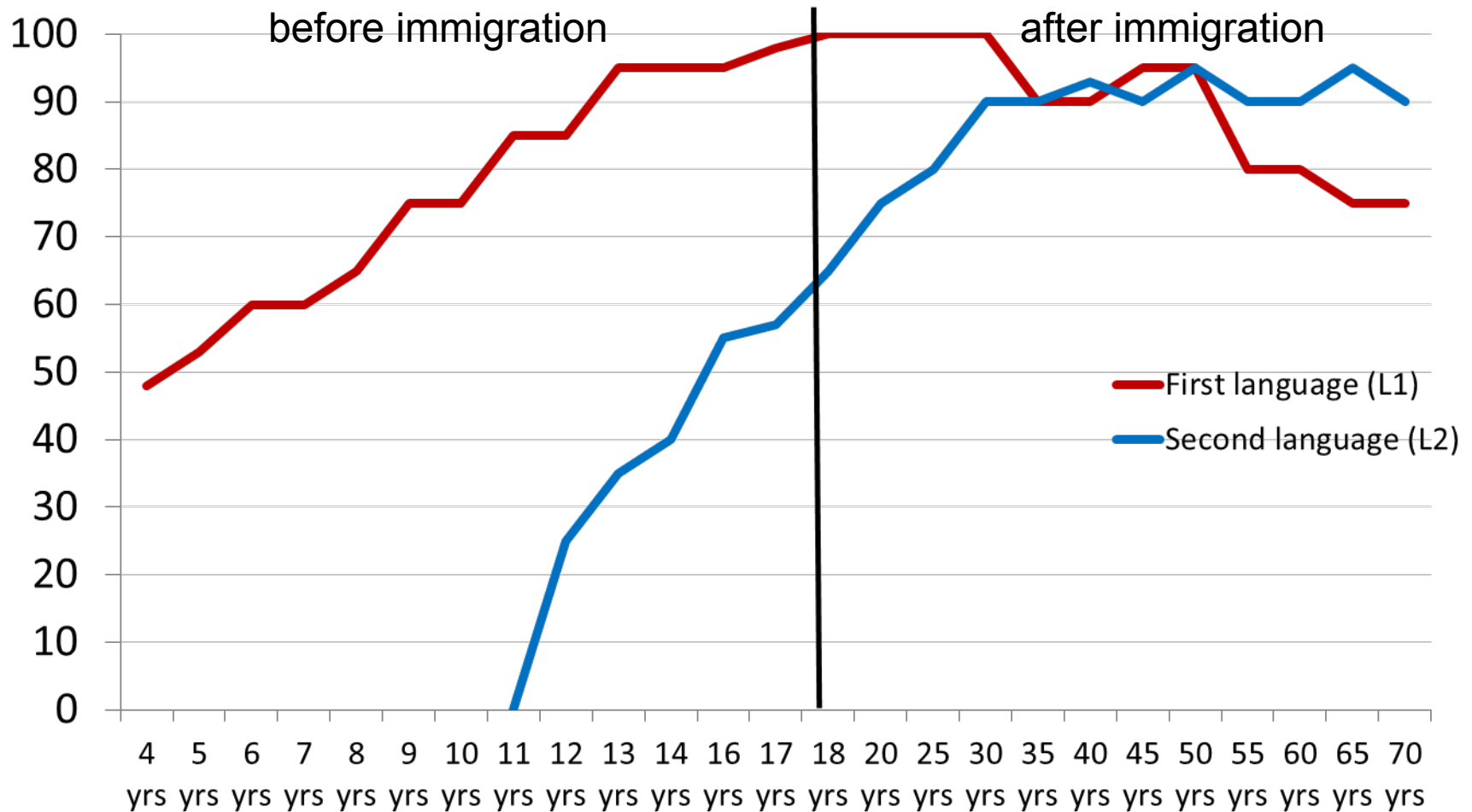
(Bylund 2009, Montrul 2008)



# L1 attrition in Adults

- Age of immigration in adulthood (1<sup>st</sup> generation immigrants)
- More than 10 years of residence in L2 environment.
- Degree of use of L1 varies (from no use to some use)
- Degree of L2 proficiency varies (from near-natives to non-natives)

# Idealized attrition of the native language in adults



# Morphosyntax

**Keijzer (2007):** Study of Dutch immigrants in Ontario Canada

- 3 groups: adult L1 attriters, L1 acquirers (13-year olds), Dutch control
- 15 grammatical features (including verbal and nominal morphology, V2, passives, subordination)
- Different elicitation measures



# Keijer (2007)

Errors in this study—as in most other attrition studies of adult attrition—**were minimal**, but when attested, errors affected morphology more than syntax.

*“At no point were dramatic changes perceived in the attrition of Dutch in Dutch Canadian émigrés” (Keijzer 2007, p. 266).*

# Schmidt & Hopp (2014): Foreign Accent

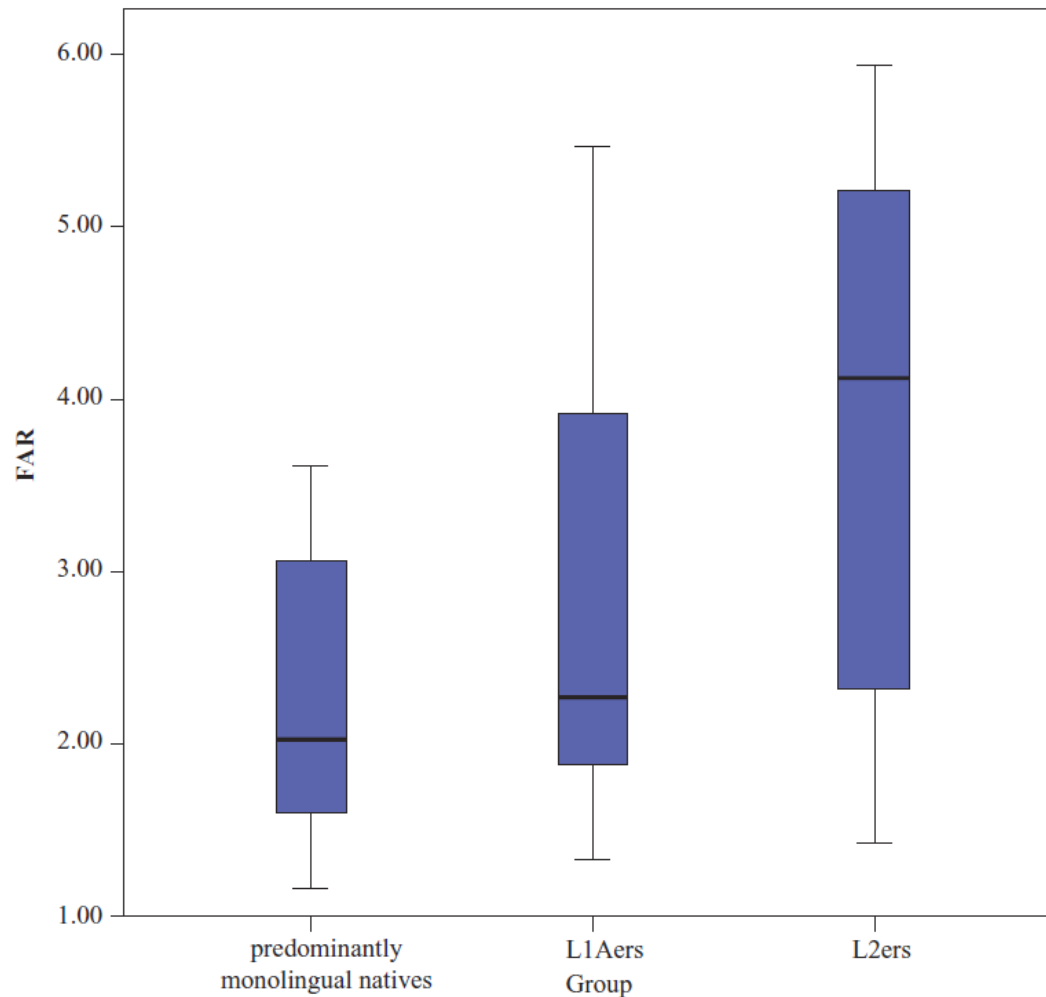


Figure 3. The foreign accent ratings (FARs) across populations. [A color version of this figure can be viewed online at <http://journals.cambridge.org/aps>]

# Schmid (2014)

- German NP morphology
- Case
- Gender
- Plural
- VP morphology
- Word order (V2)

# Results: NP morphology

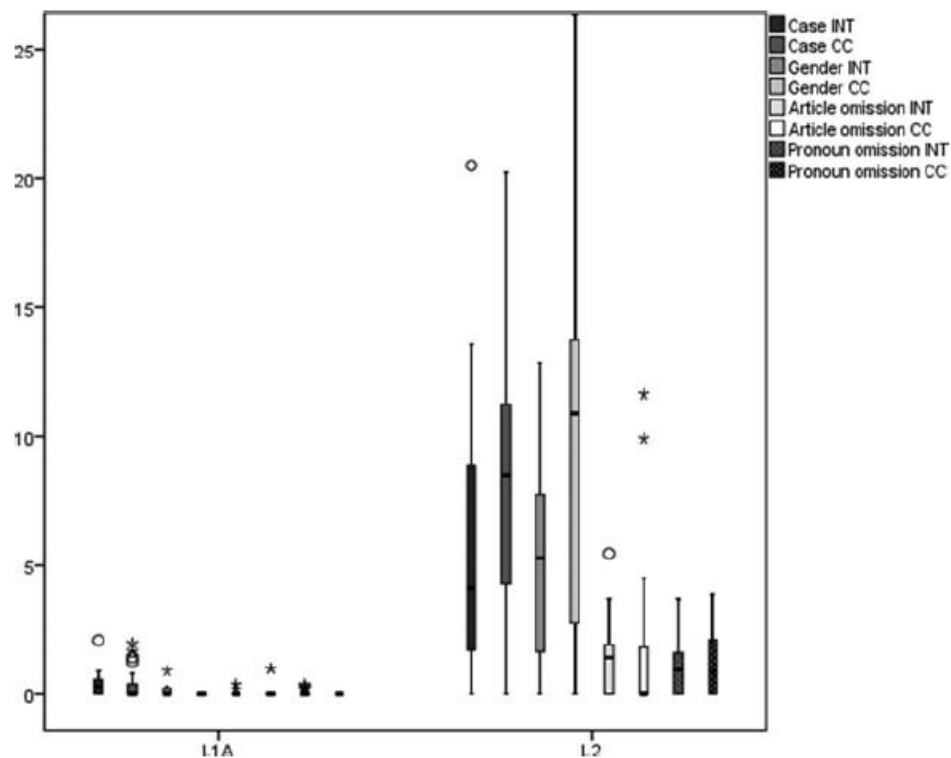


FIGURE 2a A comparison of errors per 1,000 words in the domain of NP morphology across samples and bilingual populations.

# Results: VP and Word Order

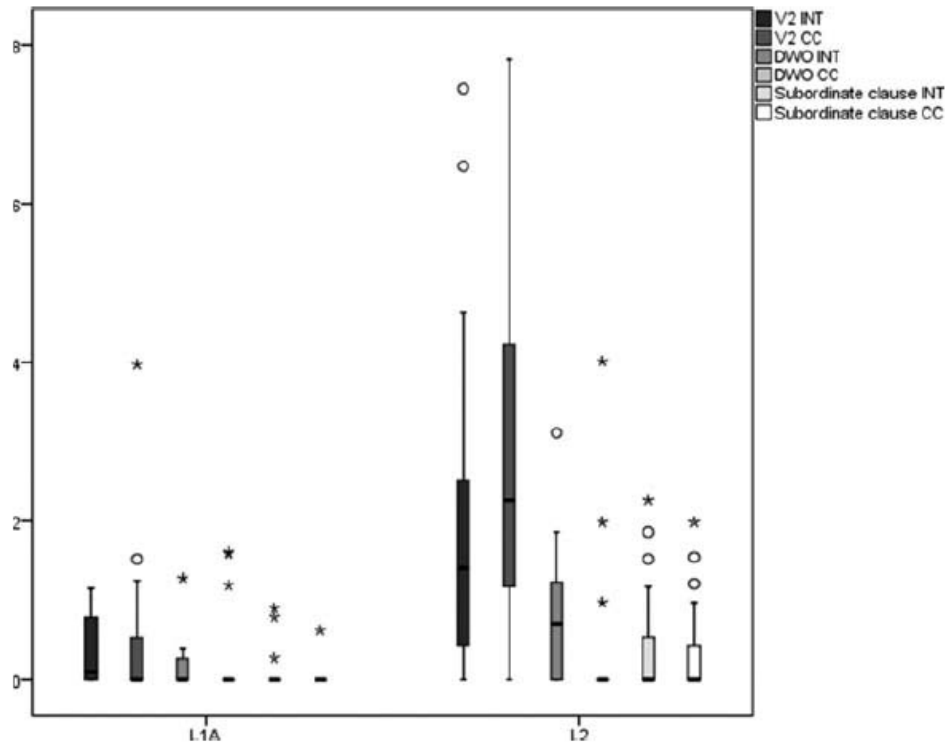


FIGURE 2b A comparison of errors per 1,000 words in the domain of word order across samples and bilingual populations.

## **Schmid and Jarvis (2014)**

- Lexical access (psycholinguistic experiments)
- Lexical diversity (speech samples)
- Dysfluency phenomena (speech samples)

Is the problem of attrition at the lexical retrieval (activation threshold) level or at the production level (cognitive inhibition/control)?

# Participants

159 Native speakers of German

53 emigrated to Canada

53 emigrated to the Netherlands

53 were residents of Germany and had lived in Germany all their lives

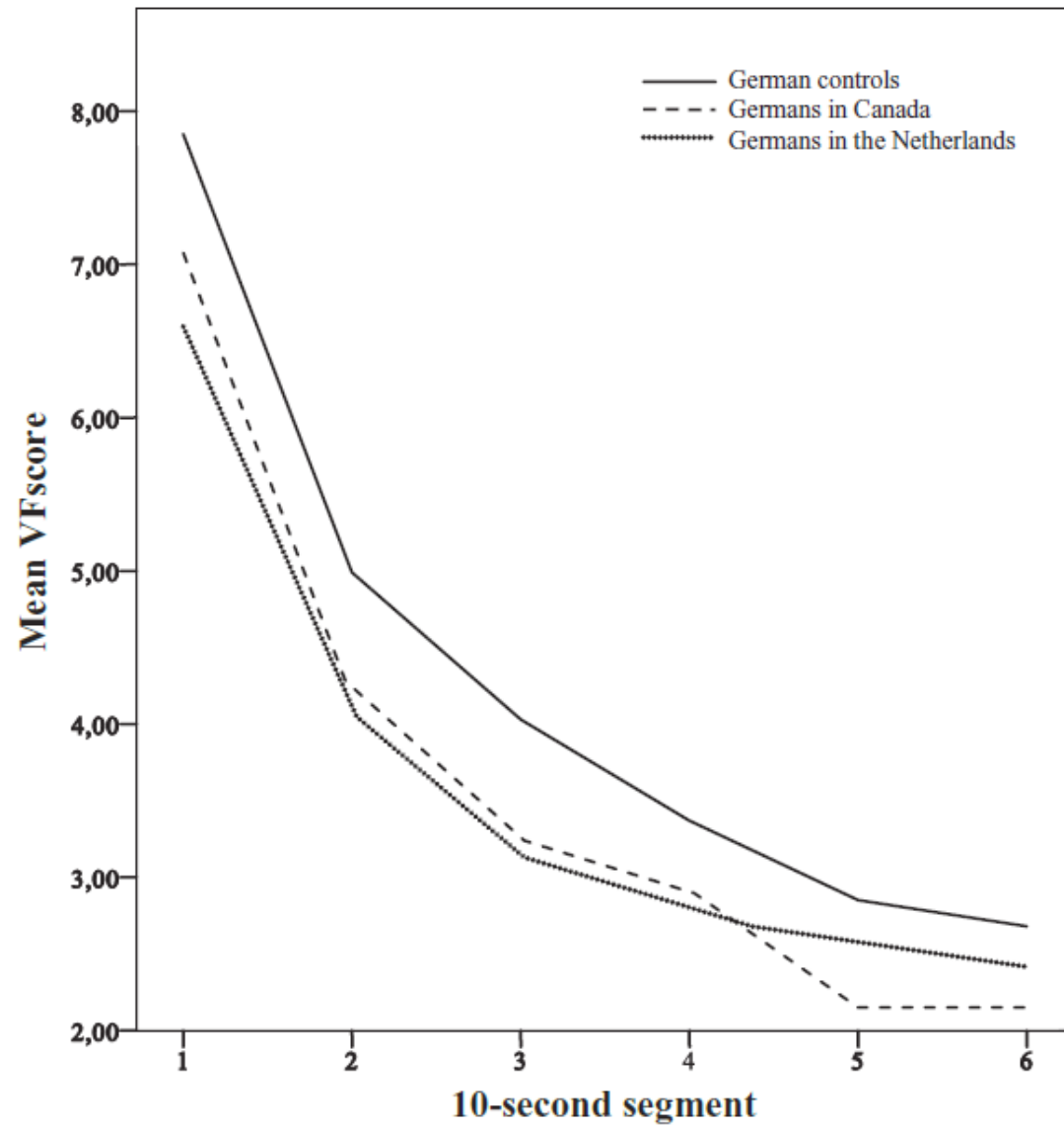


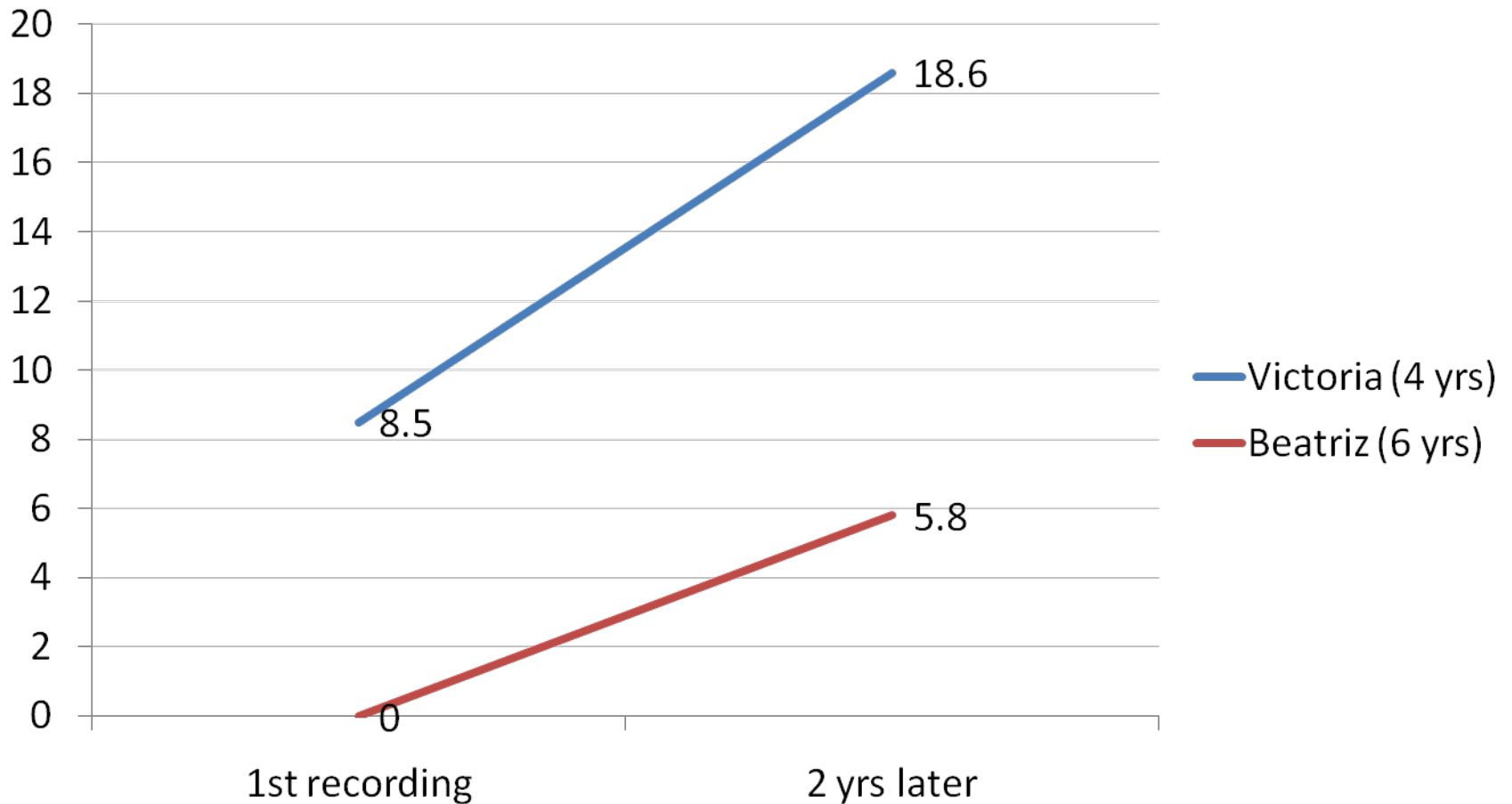
Figure 1. Average productivity in each ten-second segment of the two verbal fluency tasks across populations



# Children

- Have not reached linguistic maturity and mastery.
- *Incomplete acquisition* or *attrition*?
- **Attrition** assumes that something was acquired and then weakened or lost.
- **Incomplete acquisition** assumes that something was not fully acquired or mastered in the first place.

# Increase in Error Rates



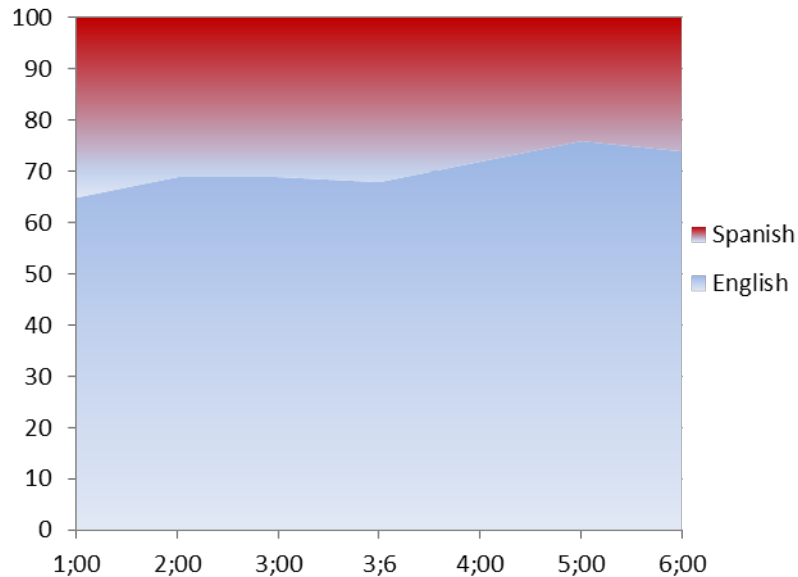
Error Rates with Gender Agreement in Spanish (Anderson 1999)

# Silva-Corvalán (2014)

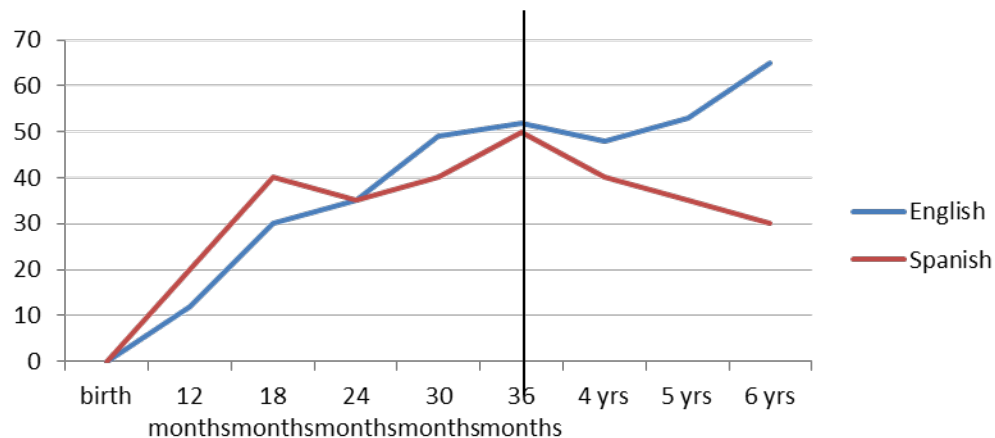
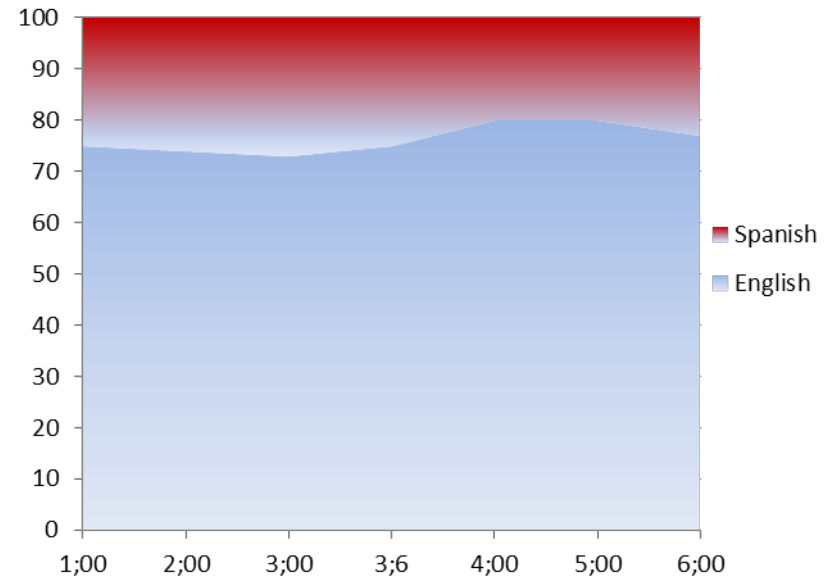
- Study of two simultaneous Spanish-English bilingual siblings from age 1-6. (her grandchildren)
- Only one parent spoke Spanish (father) and always addressed the children in Spanish.
- TAM system
- Copulas
- Subject expression

# Amount of Input in the Two Languages

Nico



Bren



# Findings

- The siblings' developing knowledge of verbs and verb tenses up to about the age of 4;0 is comparable to that of monolingual children in their respective languages.
- The siblings show full development of English complex tenses by age 6.
- Complex tenses (perfect tenses, conditional, subjunctive) do not develop in Spanish, the weaker language after age 3.
- The siblings show **incomplete acquisition** of the verbal system of Spanish by age 6: the older sibling is more proficient than the younger sibling.

# Summary

- Attrition in adults at the morphosyntactic level is rare and minor.
- It could be processing effects.
- Attrition in children affects the developing linguistic competence (not just processing)

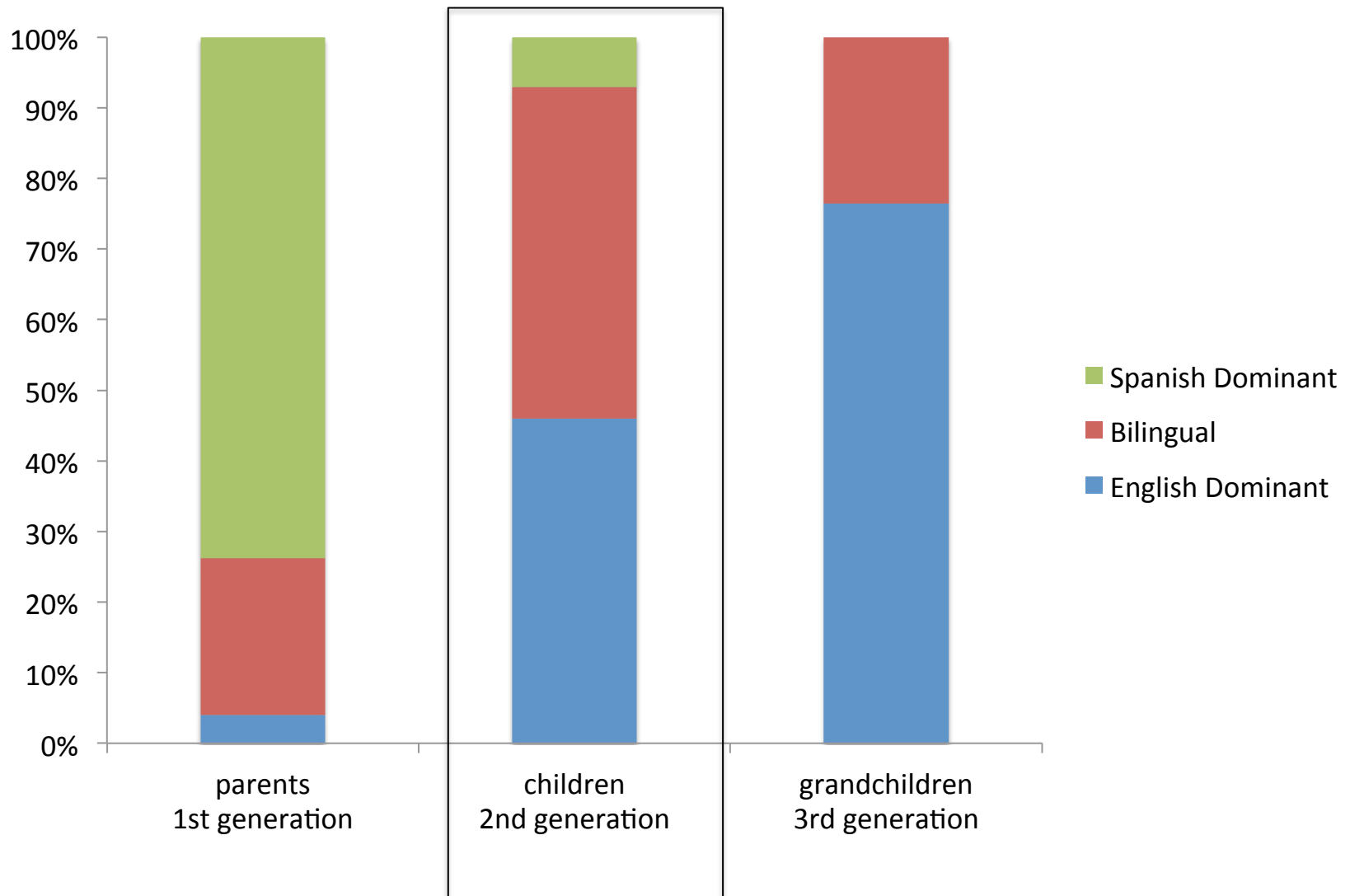
# Intergenerational Bilingualism

## Proficiency in the two languages

		<b>Spanish</b>	<b>English</b>
1 gen.	parents	strong (dominant)	weaker
2 gen.	children	Same-weaker	Same- stronger
3 gen.	grandchildren	Very weak to none	Very strong



# Language Shift with Spanish in the USA

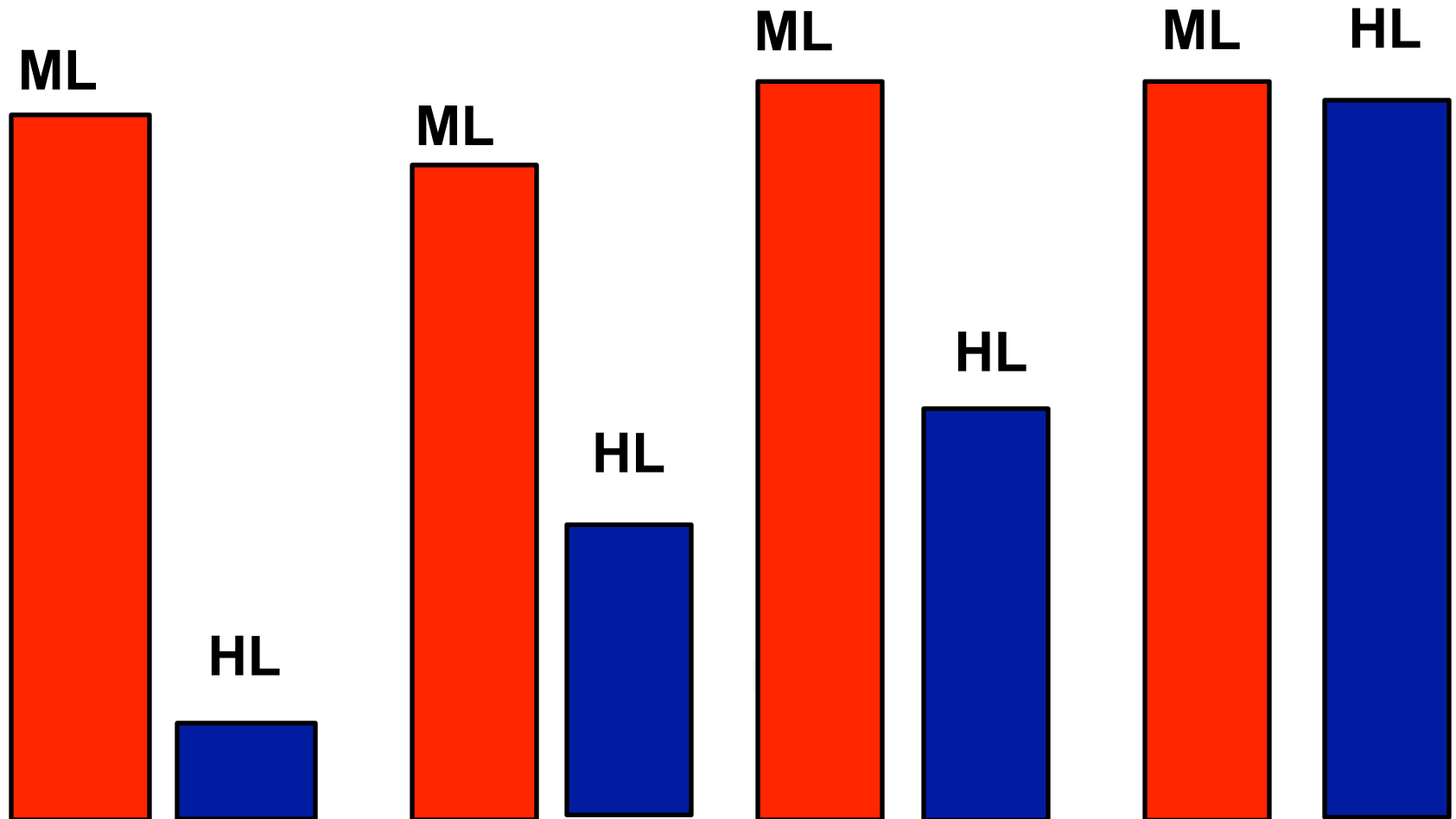




# Adult Heritage Speakers

- Cases of unbalanced early bilingualism (even when the two parents speak the majority language at home).
- Cases of successful L2 acquisition but of incomplete L1 acquisition.
- They display non-uniform levels of proficiency and many of the patterns found in L2 acquisition

# Variation in HL proficiency in heritage speakers in the United States



**ML = English**

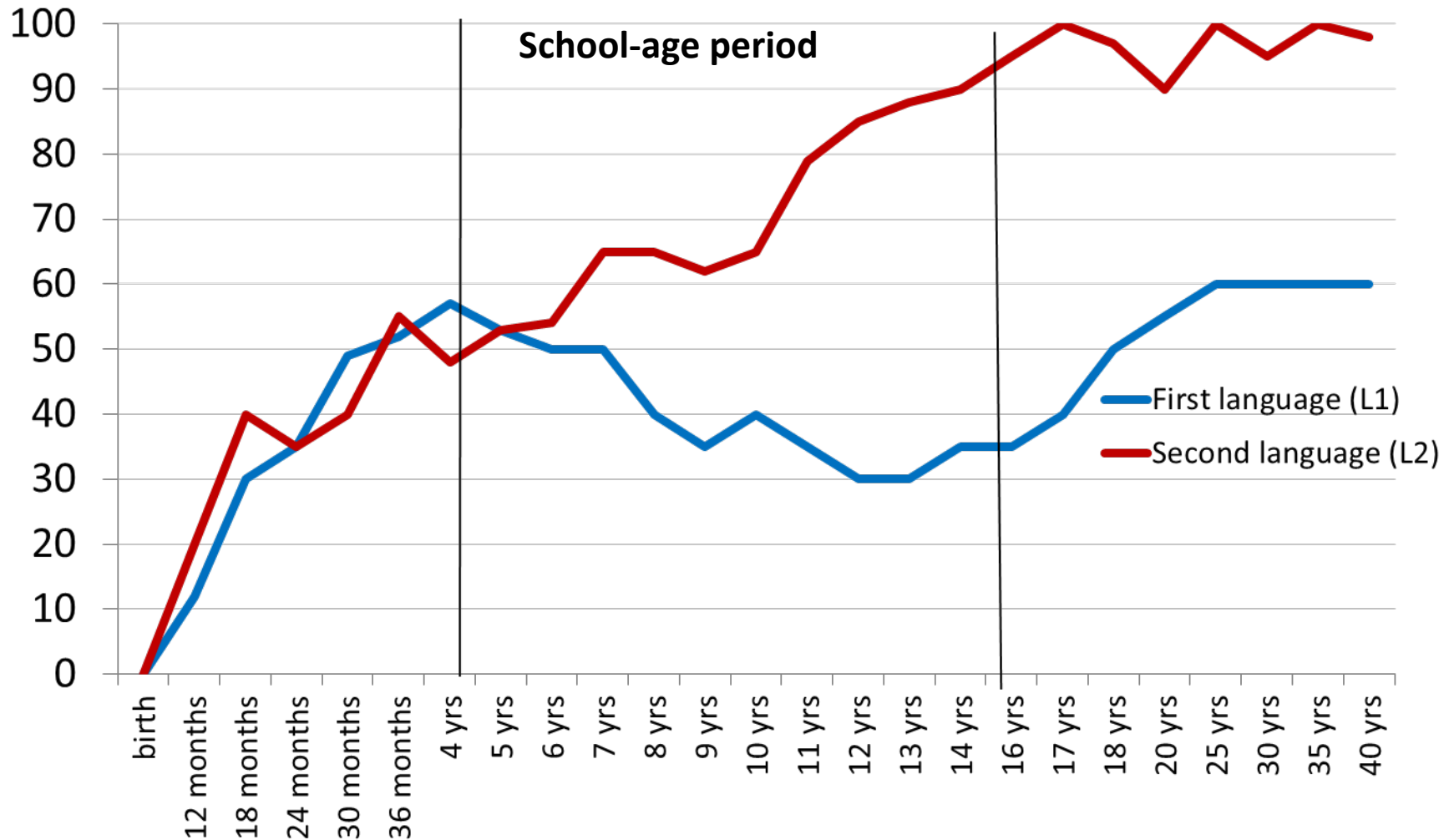
**HL = Spanish/Japanese/Russian/Hindi . . .**

# Language Learning

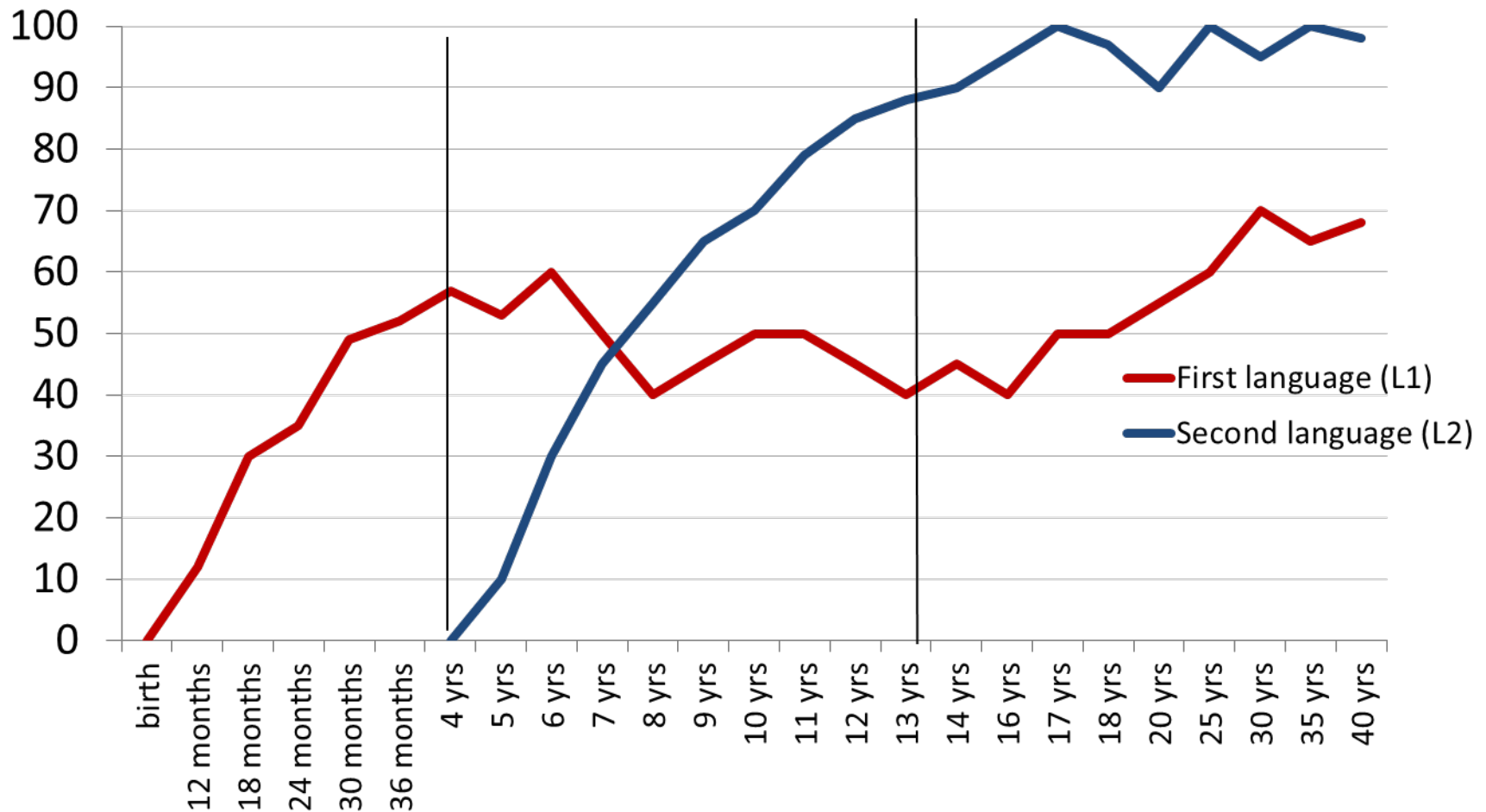
During the pre-school years, children **acquire** their native language(s), and the basic structural foundation is assumed to be in place.

To achieve native language **proficiency or mastery** is a long process of development from birth to adulthood (Berman 2004).

# Unbalanced development in simultaneous bilinguals



# Language shift in sequential bilinguals



# Grammatical competence of adult heritage speakers

- The heritage language tends to be the weaker language.
- **Structural changes** with respect to the grammars of age-matched monolinguals in country of origin and with respect to parental generation of adult immigrants.
- Differences in phonology, syntax, morphology, semantics, interfaces, etc.

# Some potential reasons for structural changes in adult Heritage Speakers

- Insufficient input and use
- Changes in frequency
- Dominant language transfer
- Incomplete acquisition
- Attrition
- **Exposure to different input, i.e. “attrited” variety?**
- All of the above?

# The study

Differential Object Marking (DOM) in Spanish,  
Hindi and Romanian heritage speakers in the  
United States.



# Acknowledgements

- National Science Foundation grant ARRA # 09175939 (with Rakesh Bhatt and Roxana Girju)
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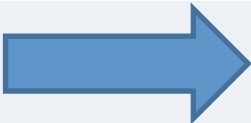
*Francisca Medrano*

*Luminita Marcus*

*Andreea Faur*

*Bogdan Buricea*

# Spanish DOM = preposition *a*

	animate object	inanimate object
specific	1. Juan vio <i>a</i> la mujer.	3. Juan vio la película.
	2. *Juan vio la mujer.	4. *Juan vio <i>a</i> la película.
	"Juan saw the woman."	"Juan saw <u>the</u> movie."
non-specific	5. Juan vio <i>a</i> una mujer.	7. Juan vio una carrera.
(optional)	6. Juan vio una mujer.	8. *Juan vio <i>a</i> una carrera.
	"Juan saw <u>a</u> woman"	"Juan saw <u>a</u> race"

# Hindi DOM: postposition *ko*

	animate object	inanimate object
specific	1. Mira-ne Ramesh- <i>ko</i> dekhaa Mira-Erg Ramesh-DOM saw 3. *Mira-ne Ramesh dekhaa Mira-Erg Ramesh saw “Mira saw Ramesh”	2. Mira-ne vah ghar dekhaa Mira-Erg that house saw 4. Mira-ne us ghar- <i>ko</i> dekhaa Mira-Erg that house-DOM saw “Mira saw <u>that</u> house”
		OPTIONAL
non-specific	5. ?Mira ne aadmi - <i>ko</i> dekhaa Mira-Erg man-DOM saw 7. Mira ne aadmi dekhaa Mira-Erg man saw “Mira saw <u>a</u> man”	6. Mira-ne ek ghar dekhaa Mira-Erg a house saw 8. *Mira ne ek ghar- <i>ko</i> dekhaa Mira-Erg a house-DOM saw “Mira saw <u>a</u> house”

# Similarities between Spanish and Hindi

DOM is the same marker as the obligatory dative case marker of indirect objects and dative subjects.

	Spanish	Hindi
<b>Indirect objects</b>	Juan dio un libro <b>a</b> María Juan gave a book to Maria “Juan gave a book to Maria.”	Rakesh-ne Sita <b>ko</b> kitaab dii. Rakesh-erg Sita-dat book gave “Rakesh gave a book to Sita.”
<b>Dative subjects</b>	<b>A</b> Juan le gusta esa niña. dat Juan cl likes that girl “Juan likes that girl.”	Rakesh- <b>ko</b> vah laRkii pasand hai Rakesh-dat that girl likes “Rakesh likes that girl.”

# 3 studies

- Spanish
- Hindi
- Romanian

Target population: 2<sup>nd</sup> generation immigrants in the United States

US-born Spanish, Hindi and Romanian

Spanish, Hindi and Romanian child immigrants

# Methodological challenge

Who is the right control group or baseline for heritage speakers?

- A. Their parents' generation (adult first generation immigrants) in the US?
- B. Their age peers in the country of origin?
- C. Their parents' peers in the country of origin?

# Overall Research Design

## US groups

- Simultaneous bilingual heritage speakers
- Sequential bilingual heritage speakers
- Adult immigrants (40-60 year olds)

## Mexico, India and Romania Groups

- Age matched native speakers in country of origin (18-25 year olds)
- Adults in country of origin (40-60 year olds)

# Screening Instruments

- 6-page linguistic profile questionnaire for each language *(age of onset of bilingualism, language of parents, level of education, patterns of language use in childhood, elementary school, middle school, high school, present, self-ratings in each language question about attitude toward language)*
- Written proficiency measures
  - parts of DELE and MLA tasks for Spanish
  - developed cloze tests for Hindi and Romanian



# Tasks in the three languages

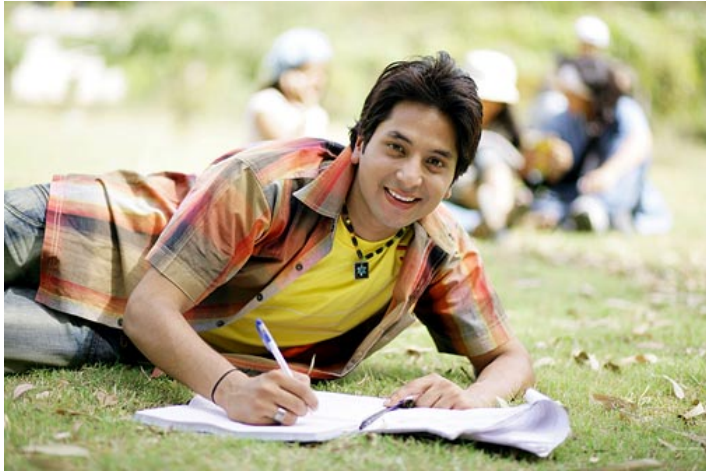
- 1. Oral narrative task**
- 2. Oral picture description Task**
3. Aural comprehension task
4. Written comprehension task
5. Written production task
- 6. Bimodal, untimed acceptability judgment task**

# Participants

	Spanish	Hindi
<b>country</b>	US	US
Heritage speakers (sim. bil.)	32	30
Heritage speakers (seq. bil.)	24	6
Adult immigrants	21	21
<b>country</b>	Mexico	India
Younger NS (18-25)	20	20
Older NS (40-60)	20	22
<b>SES</b>	Low-mid	High

Hindi

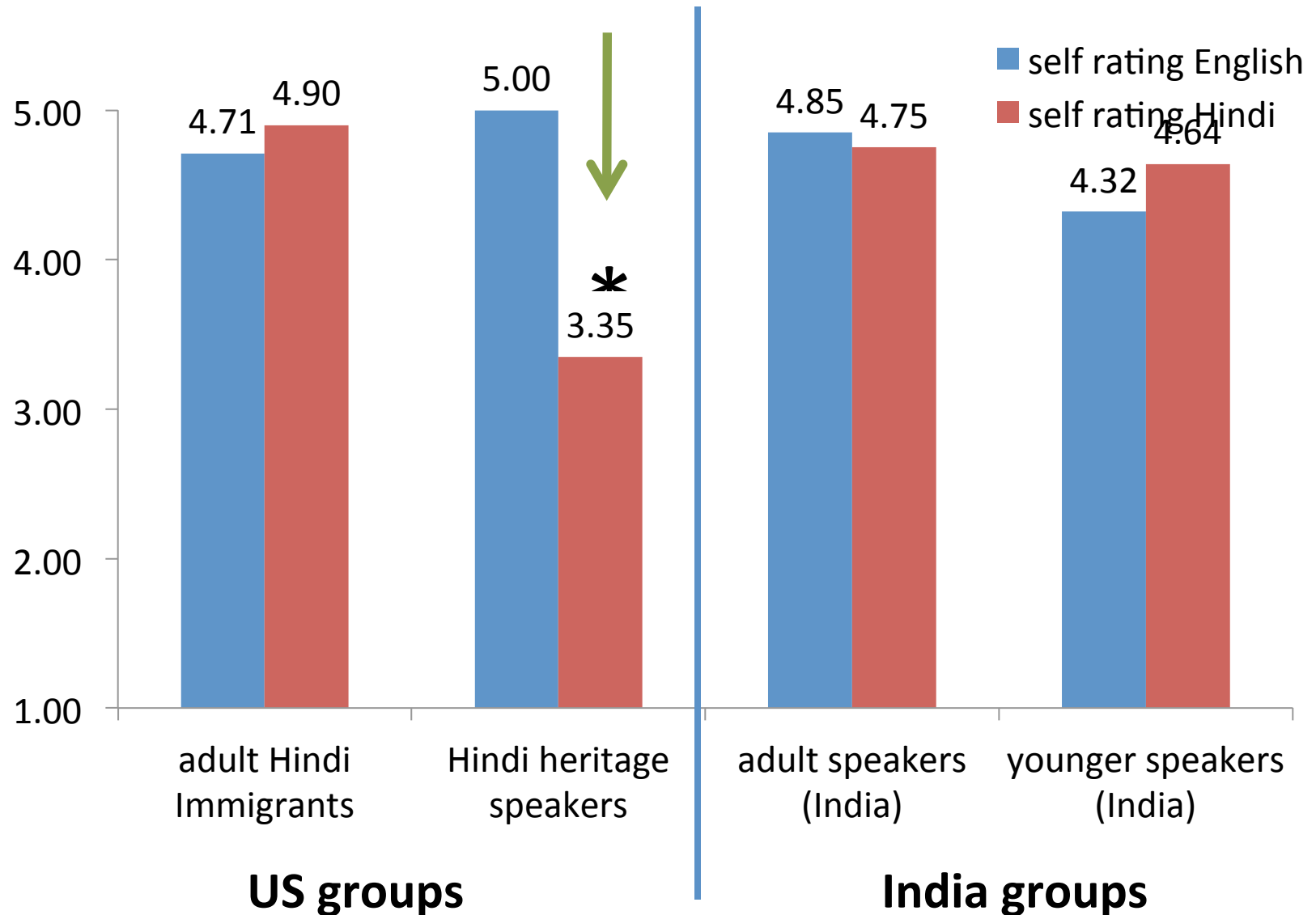
# Hindi: Rajesh, 22 years old



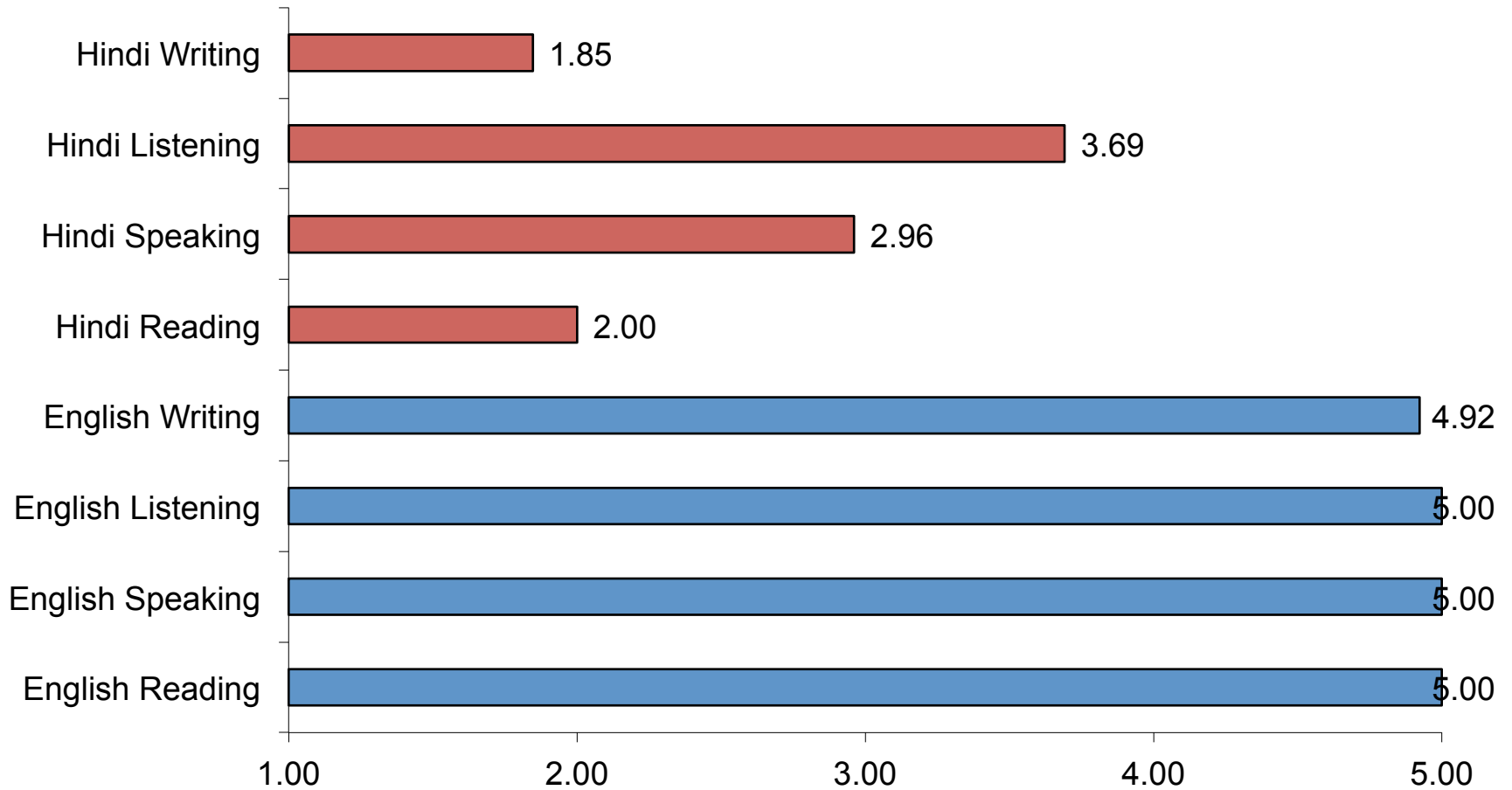
## Born in the United States

- ☐ Hindi speaking parents
- ☐ High SES (parents are doctors or engineers)
- ☐ Schooled in English
- ☐ Parents spoke Hindi at home, Rajesh used some Hindi but often responded in English
- ☐ **Knowledge of English:** native in all skills
- ☐ **Knowledge of Hindi:** intermediate in spoken and aural comprehension, **cannot read/write the language very well**

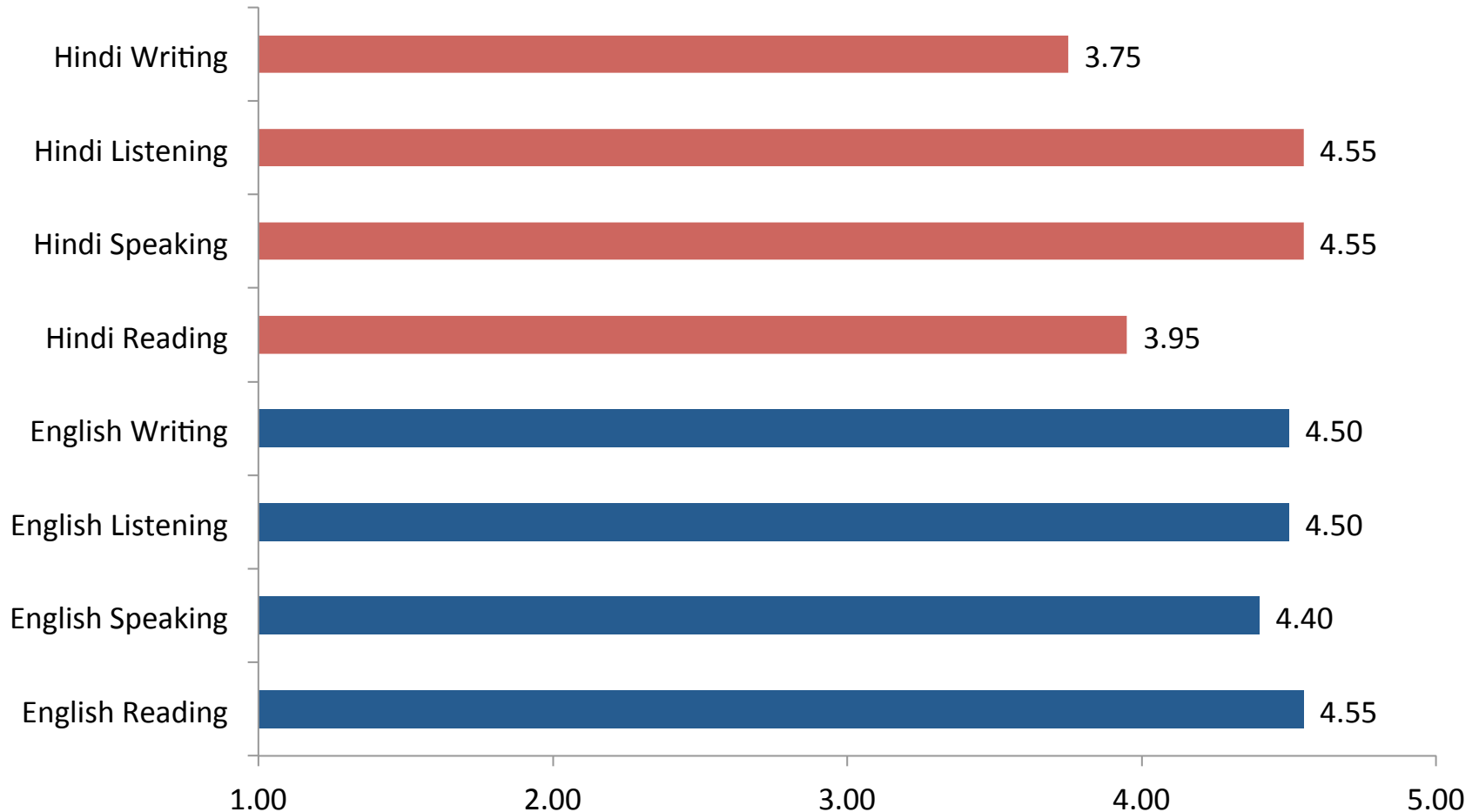
# Hindi: Self-ratings



# Hindi Heritage Speakers: self-ratings by skill

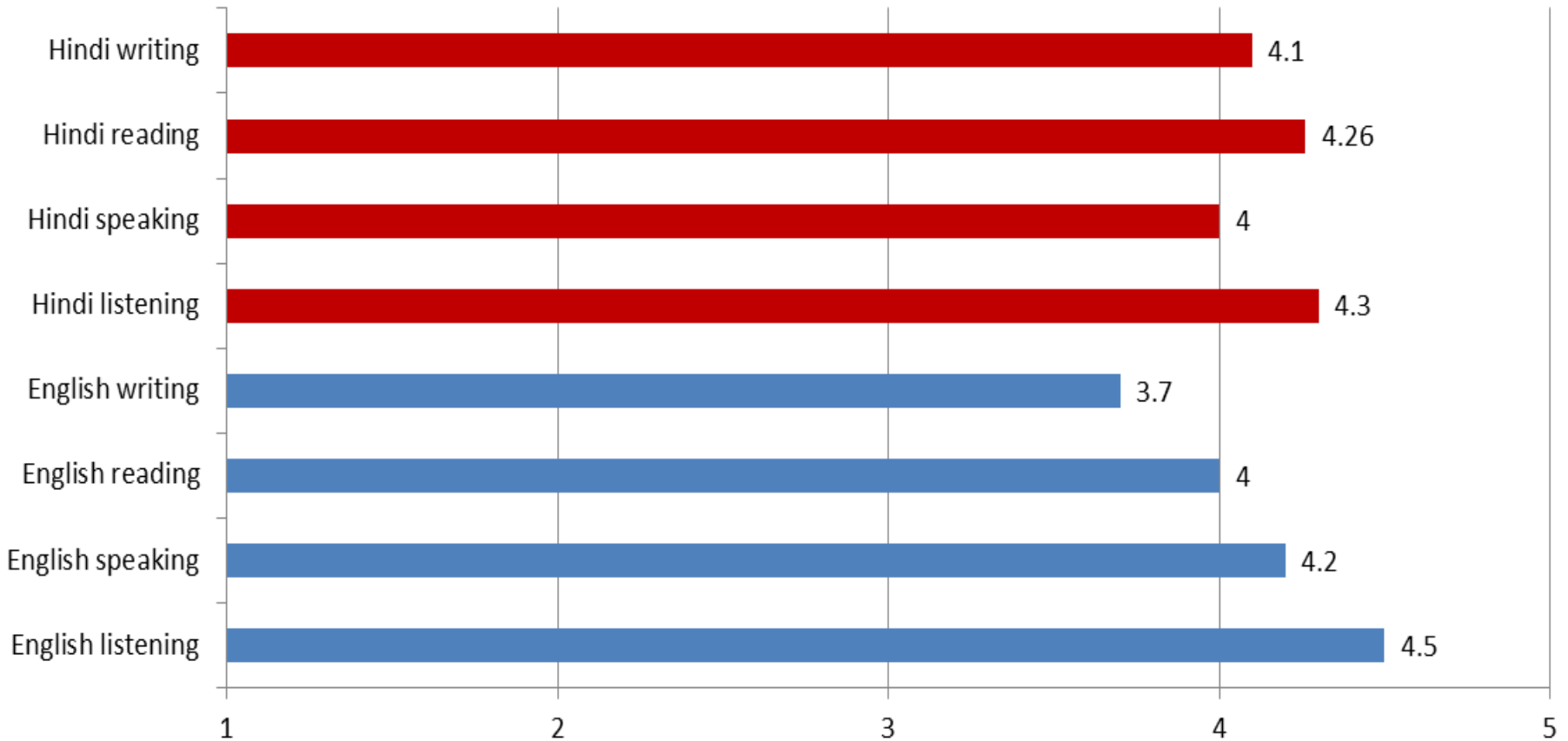


# Hindi native speakers from India (older cohort): self ratings by skill (Montrul, Bhatt, Girju 2015)



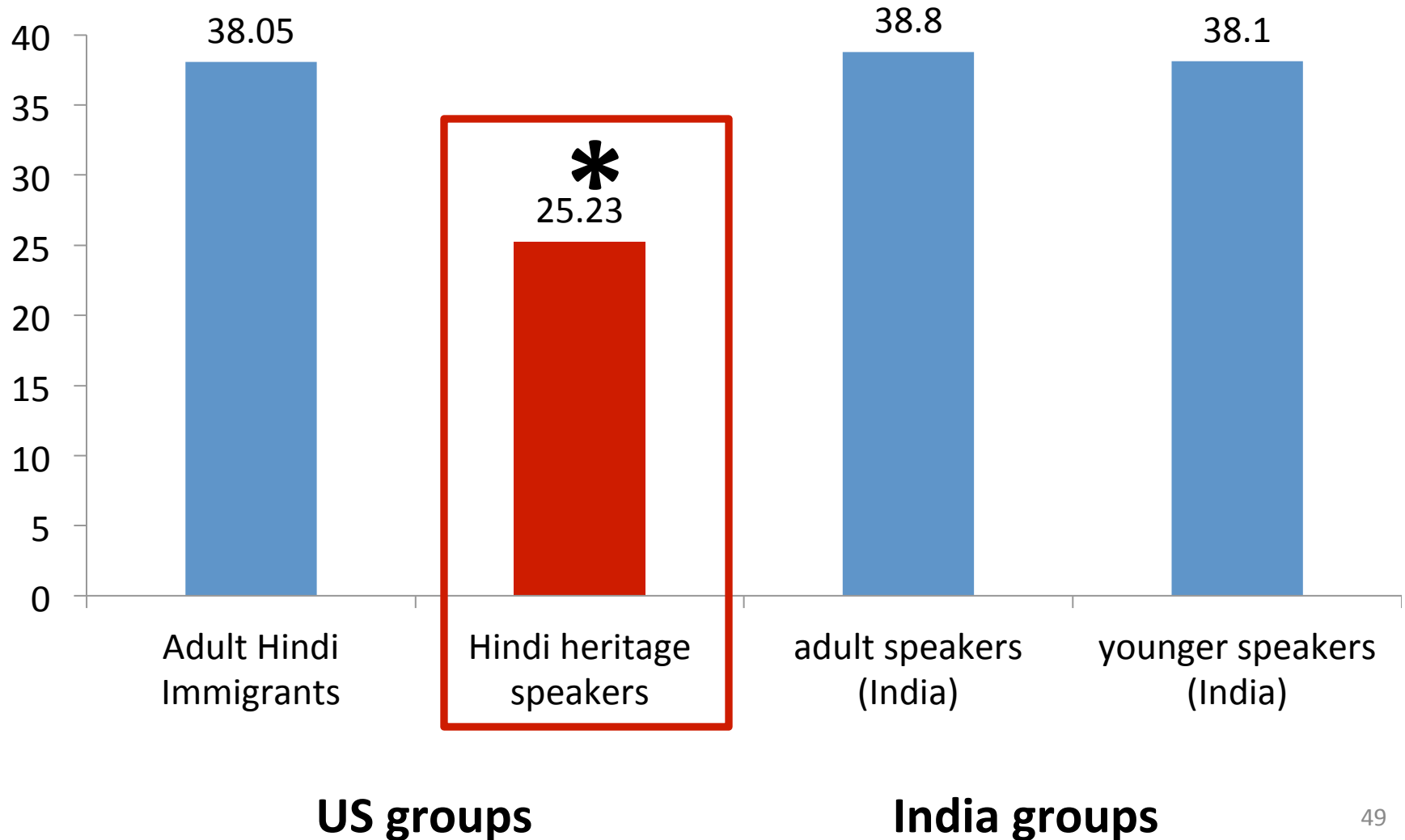
# Hindi speakers in India: self-ratings by skill

(Montrul, Bhat & Girju, 2015)





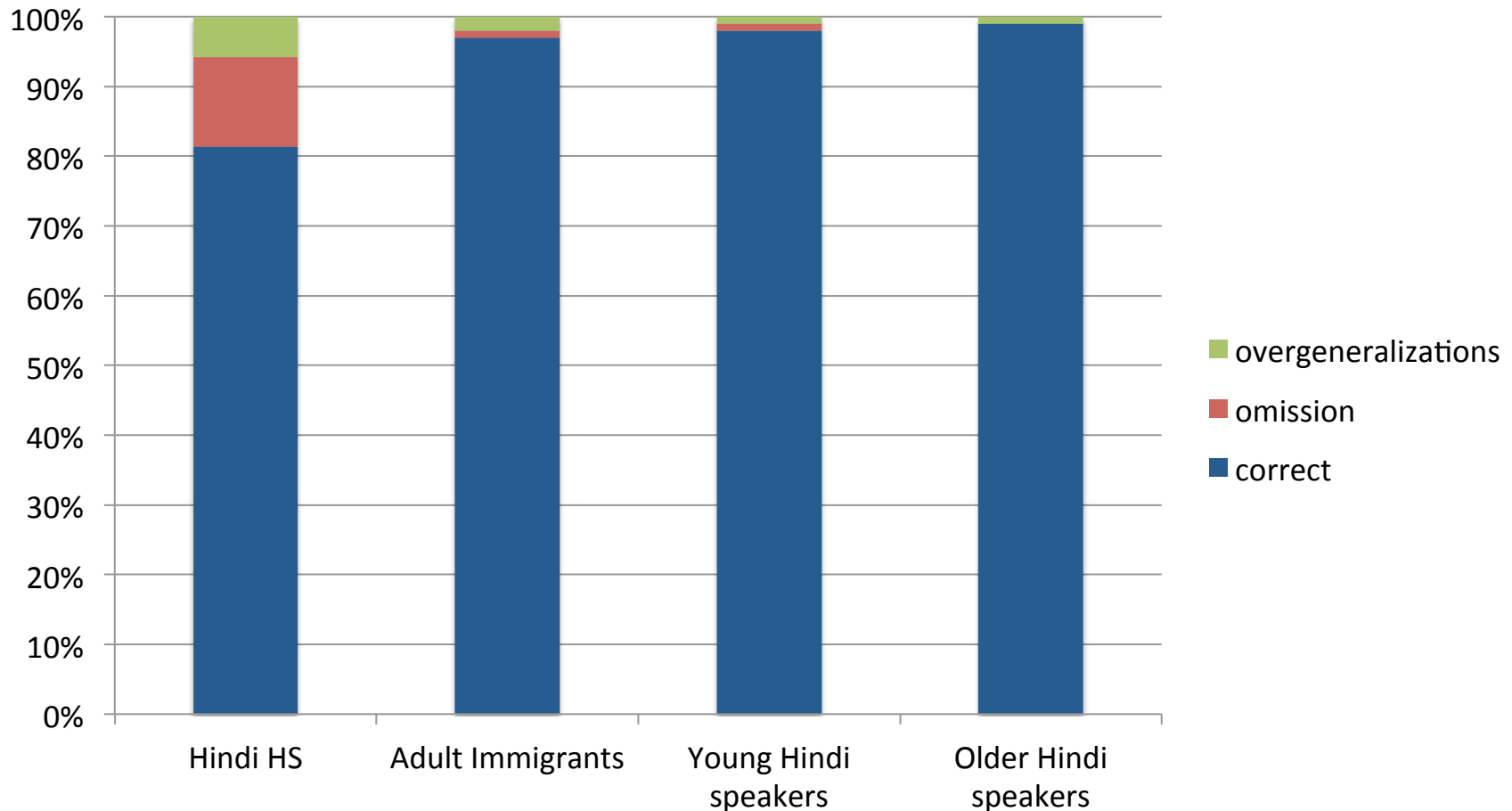
# Hindi Written Proficiency Cloze Test



# Oral Narrative

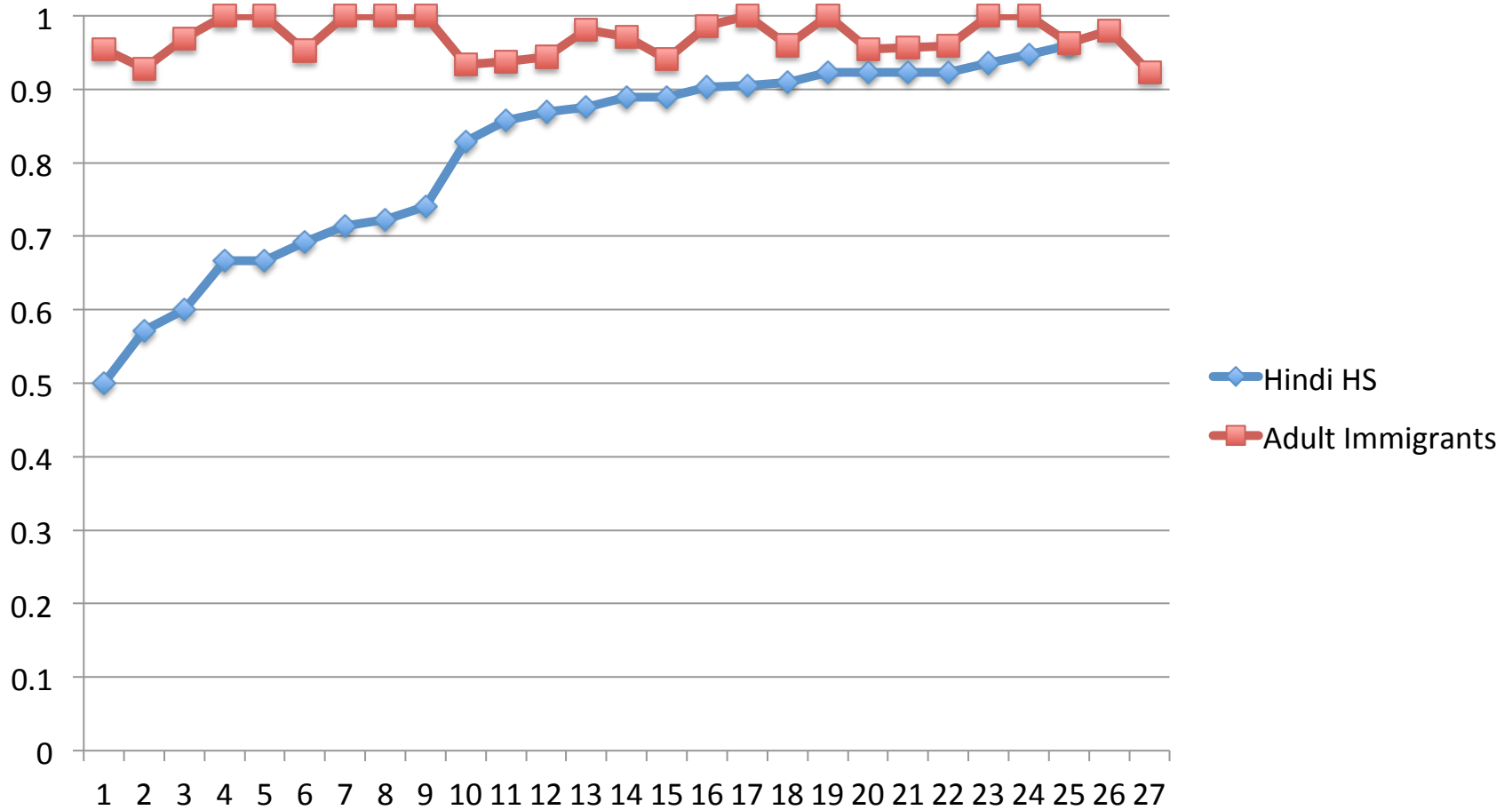
## -ko with animate, specific objects

Mira-ne Ramesh-ko dekhaa

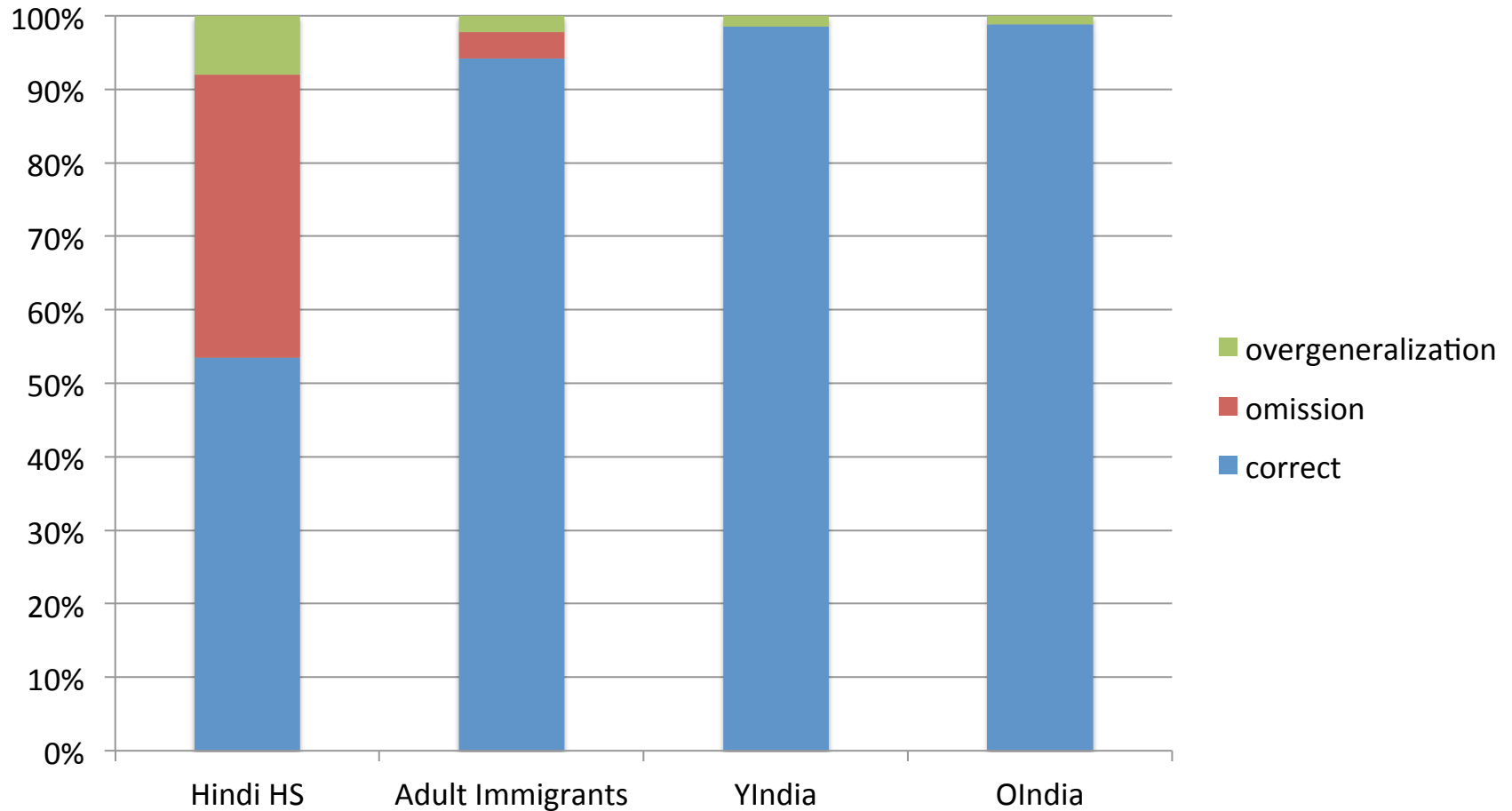


**\*Mira-ne Ramesh dekhaa**

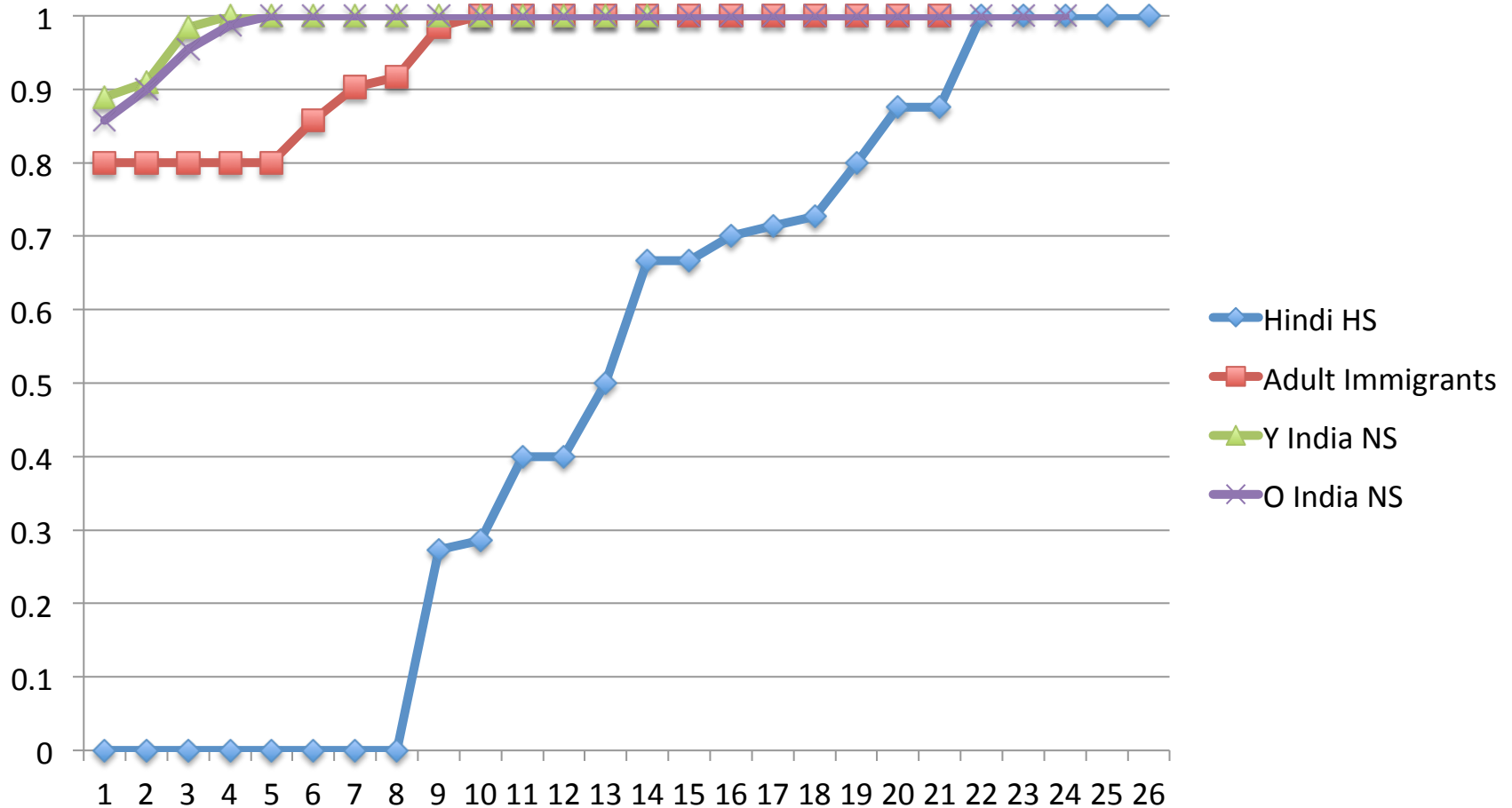
# Individual Results: -ko marking



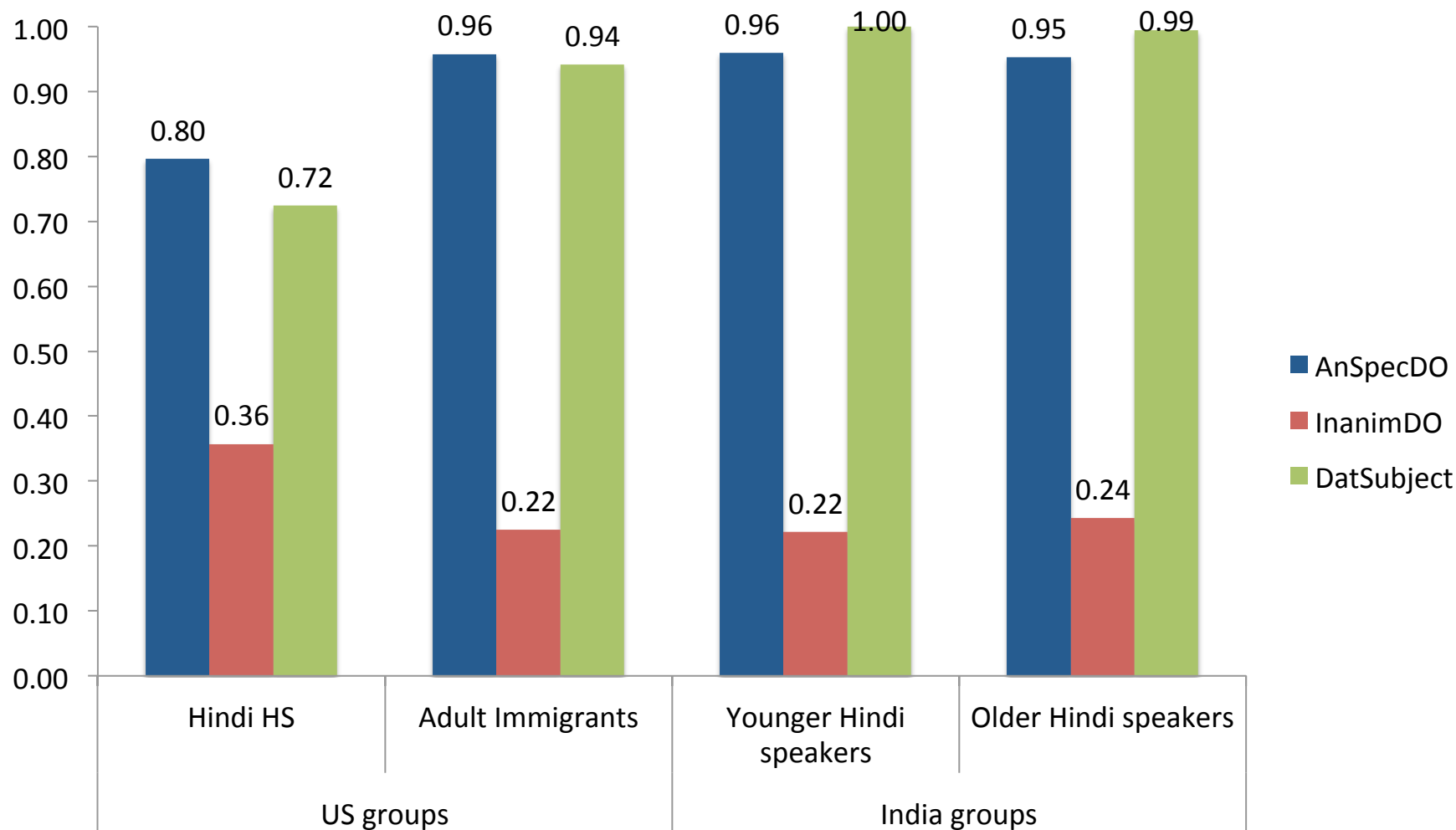
# Oral Narrative: ergative marking



# Oral Narrative: ergative marking

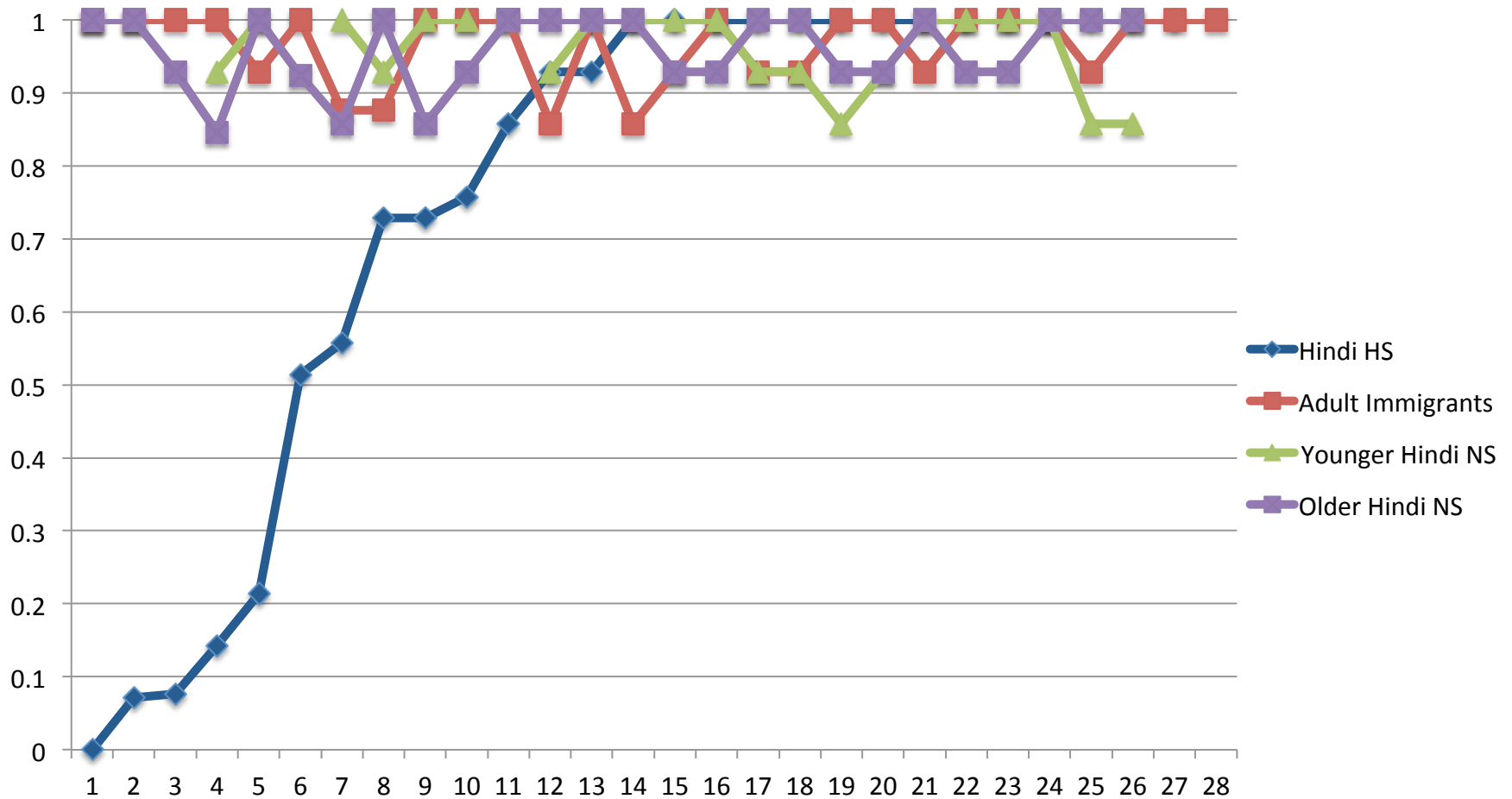


# Oral Production Task: -Ko



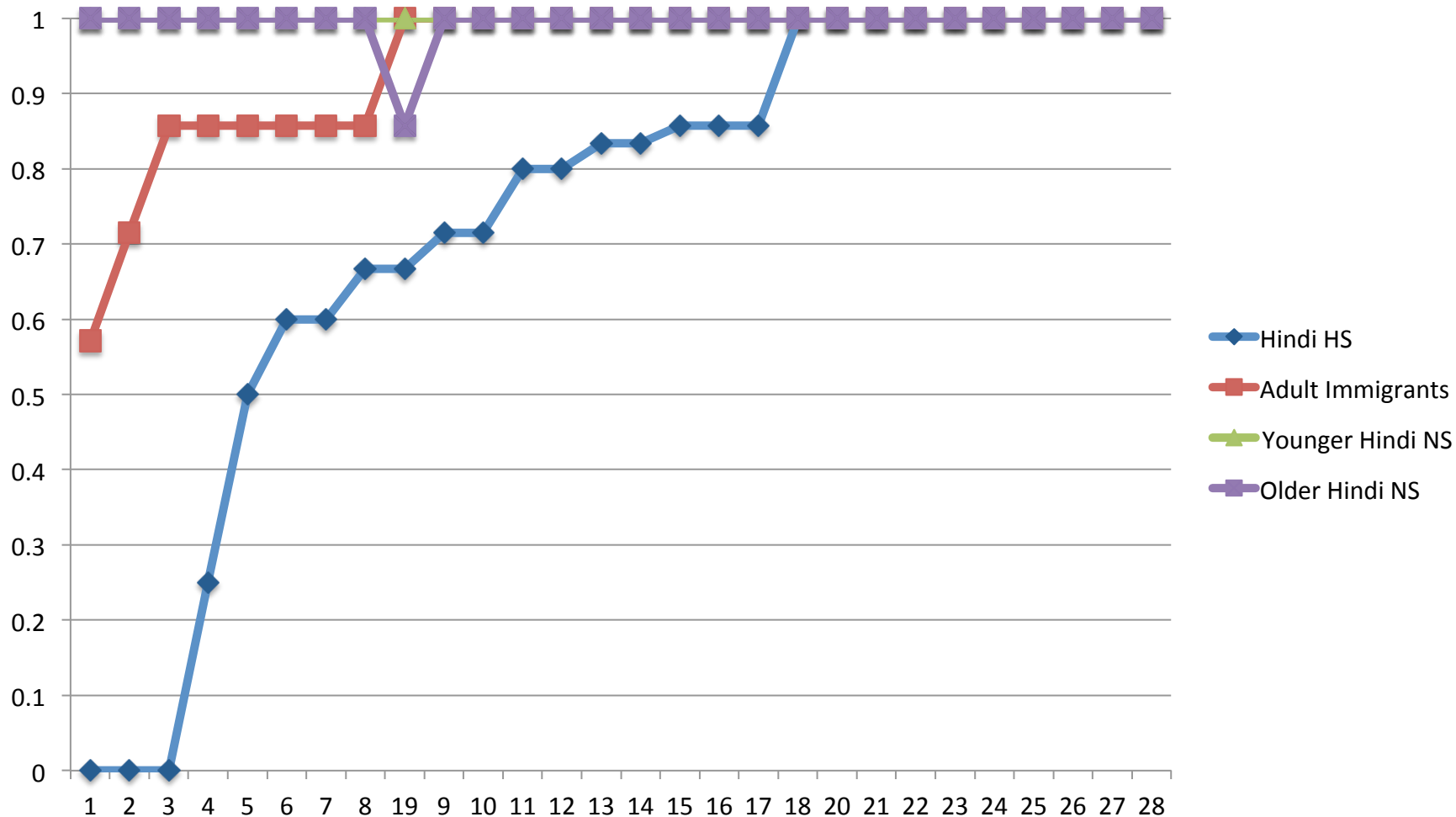
# Individual Results

## -ko with animate direct objects



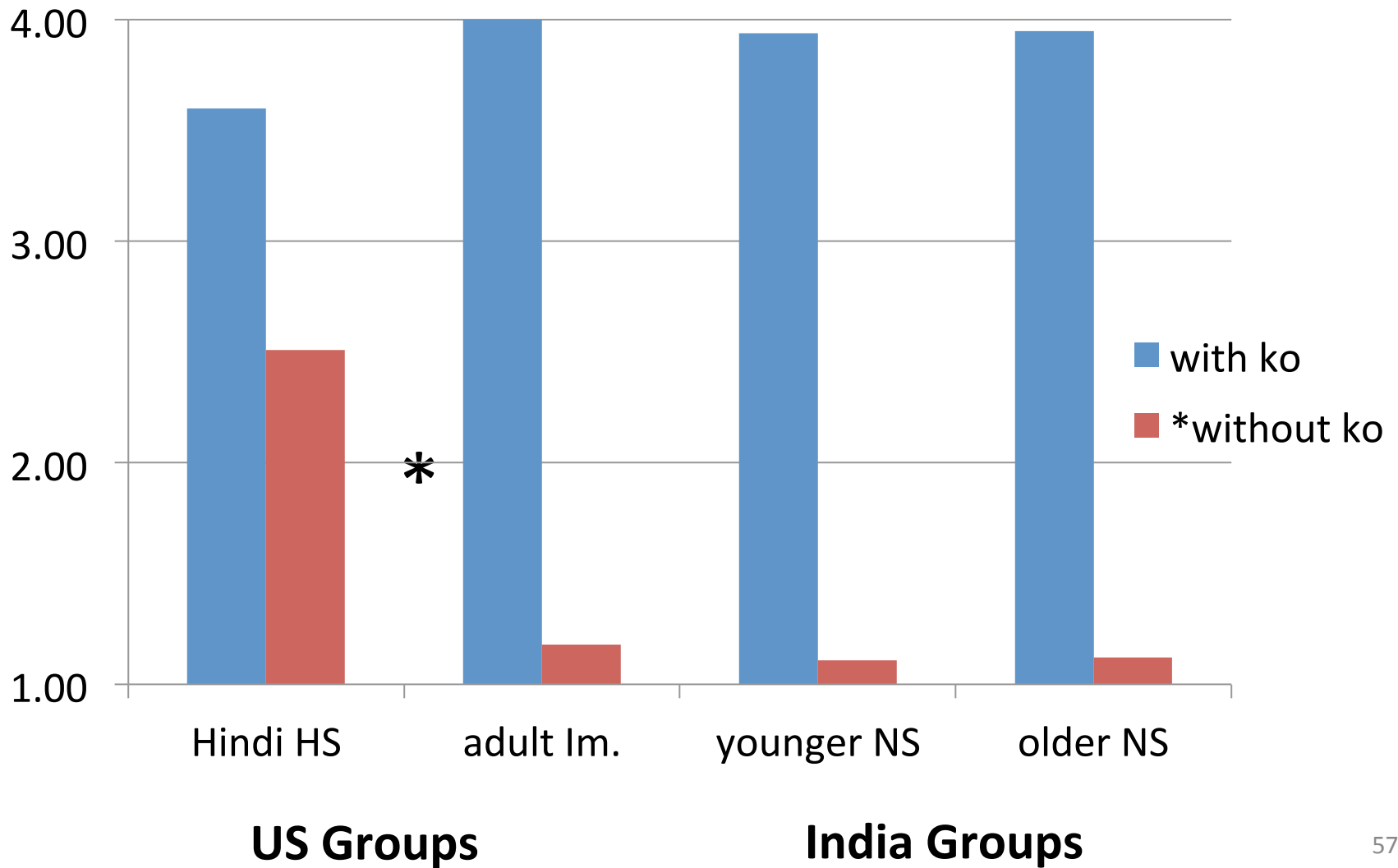
# Individual Results

## -ko with dative subjects

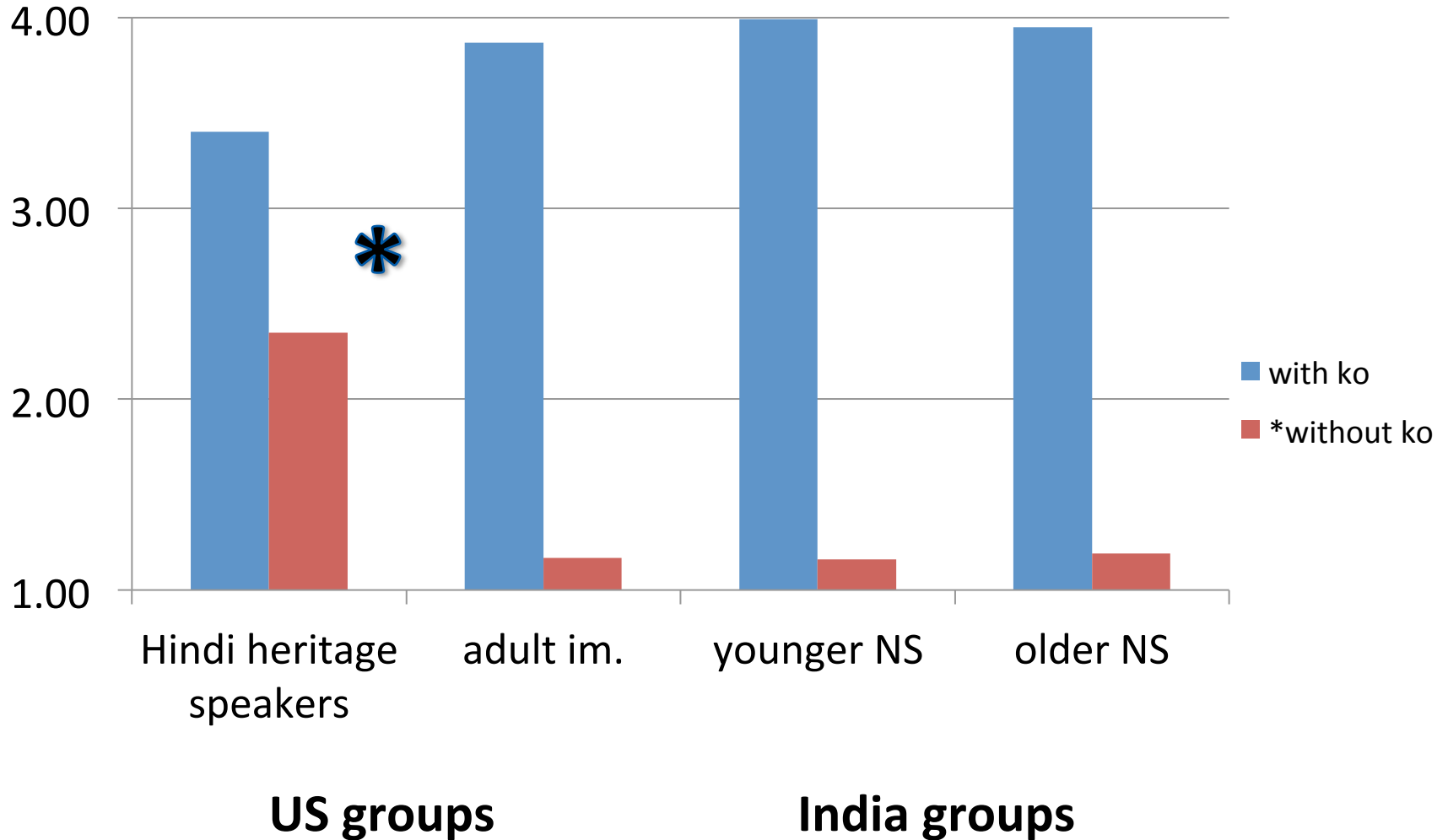




# Animate Specific Direct Objects



# Dative Experiencer Subjects



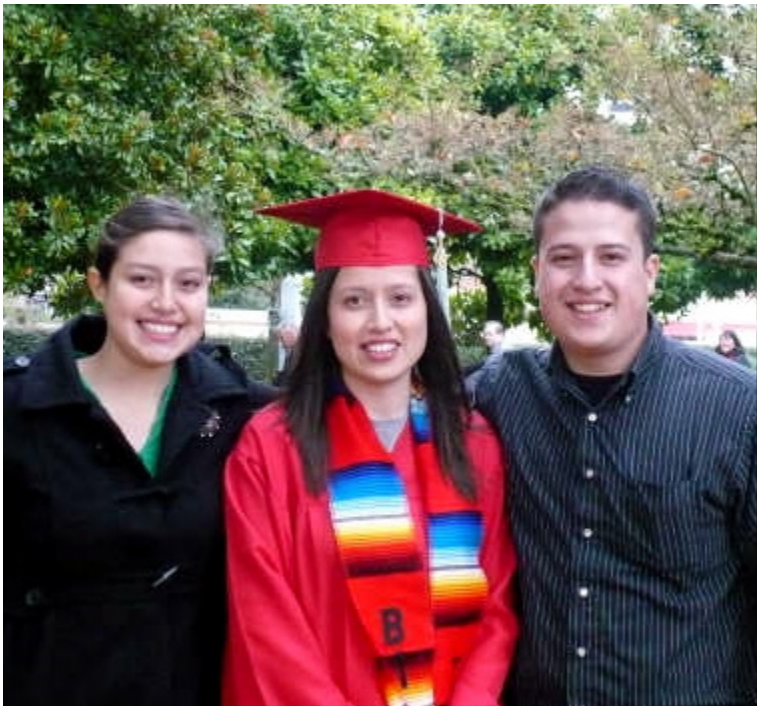
# Summary Hindi Study

- In comparison to Hindi native speakers who immigrated to the US as adults and age-matched controls in India, **US-born Hindi heritage speakers accept DOM omission** with animate, specific direct objects and with dative subjects.
- There is also significant omission of ergative-ne marking.
- **Little evidence for L1 attrition** in the adult immigrant Hindi group.

**SPANISH**

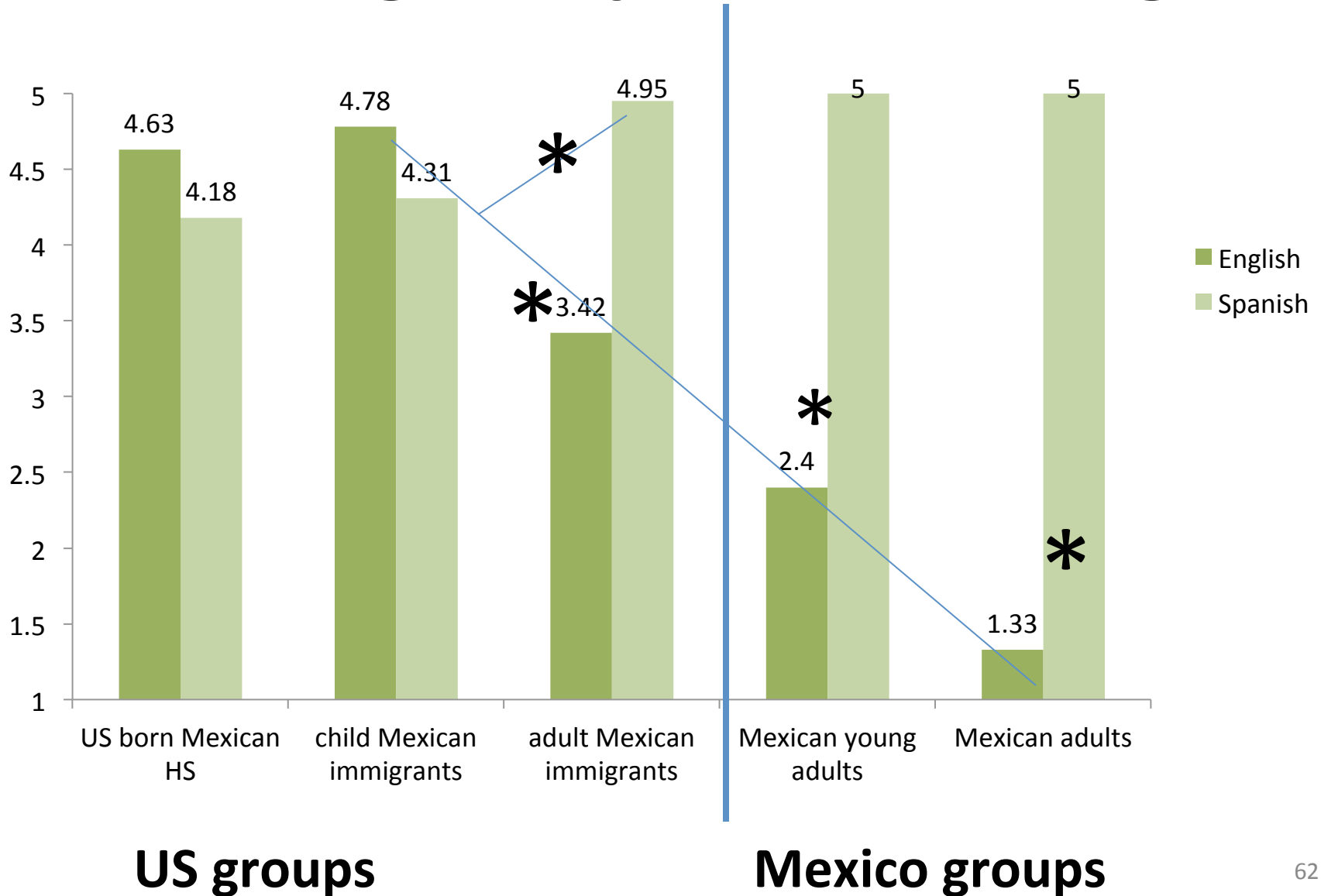
# Some typical Cases

**Carlos (29), Alicia (24) and Beatriz (22)**

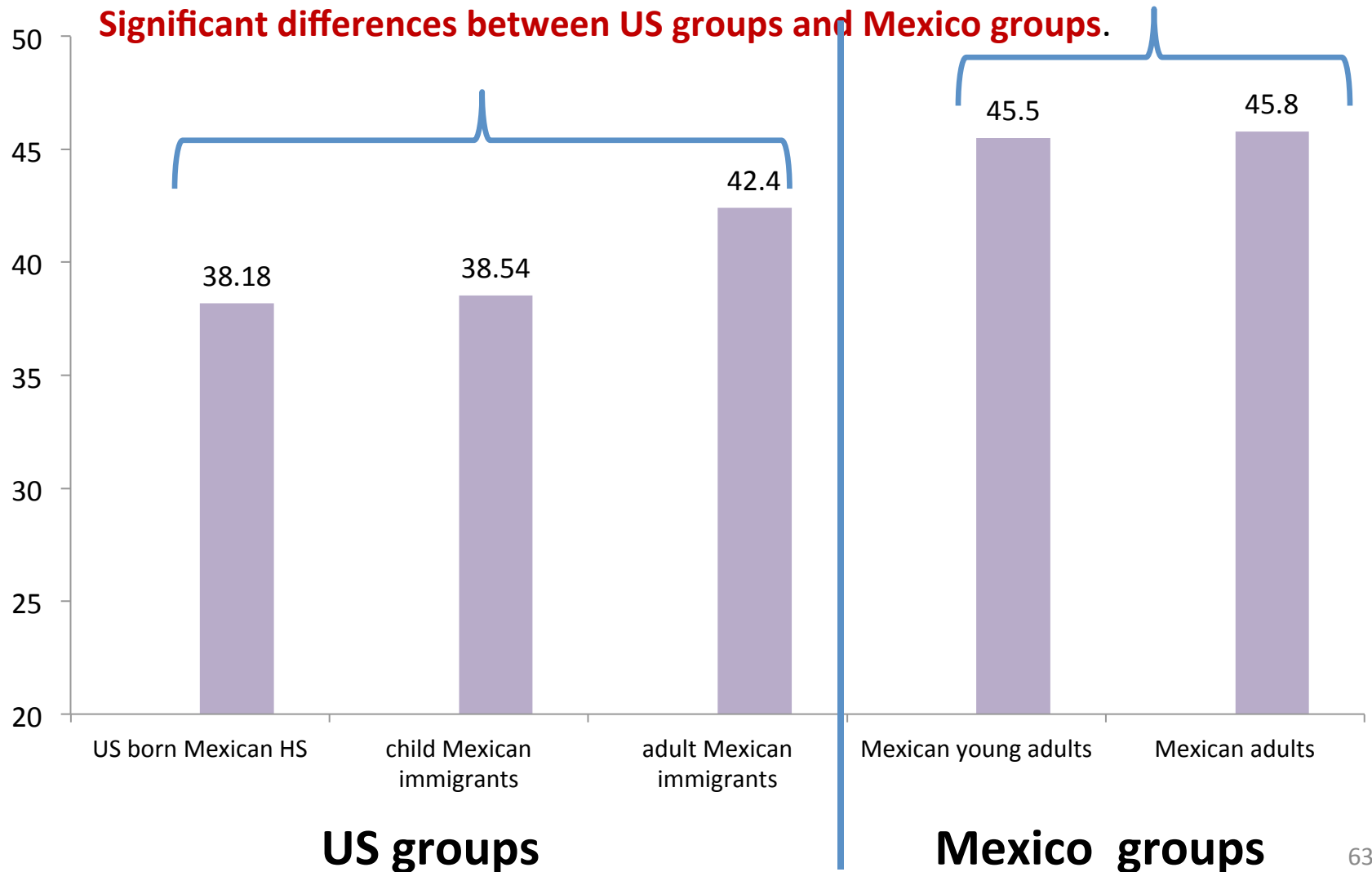


- Born in Northern Mexico.
- Immigrated to the US at ages 2 (Beatriz), 4 (Alicia) and 9 (Carlos).
- Carlos went up to 3<sup>rd</sup> grade in Mexico and then was enrolled in English-only school in the US. Had to take ESL classes.
- Alicia spoke Spanish when she arrived in the US, while Beatriz was learning Spanish. They were both enrolled in full-time English daycare.
- At home, parents spoke Spanish with the children.

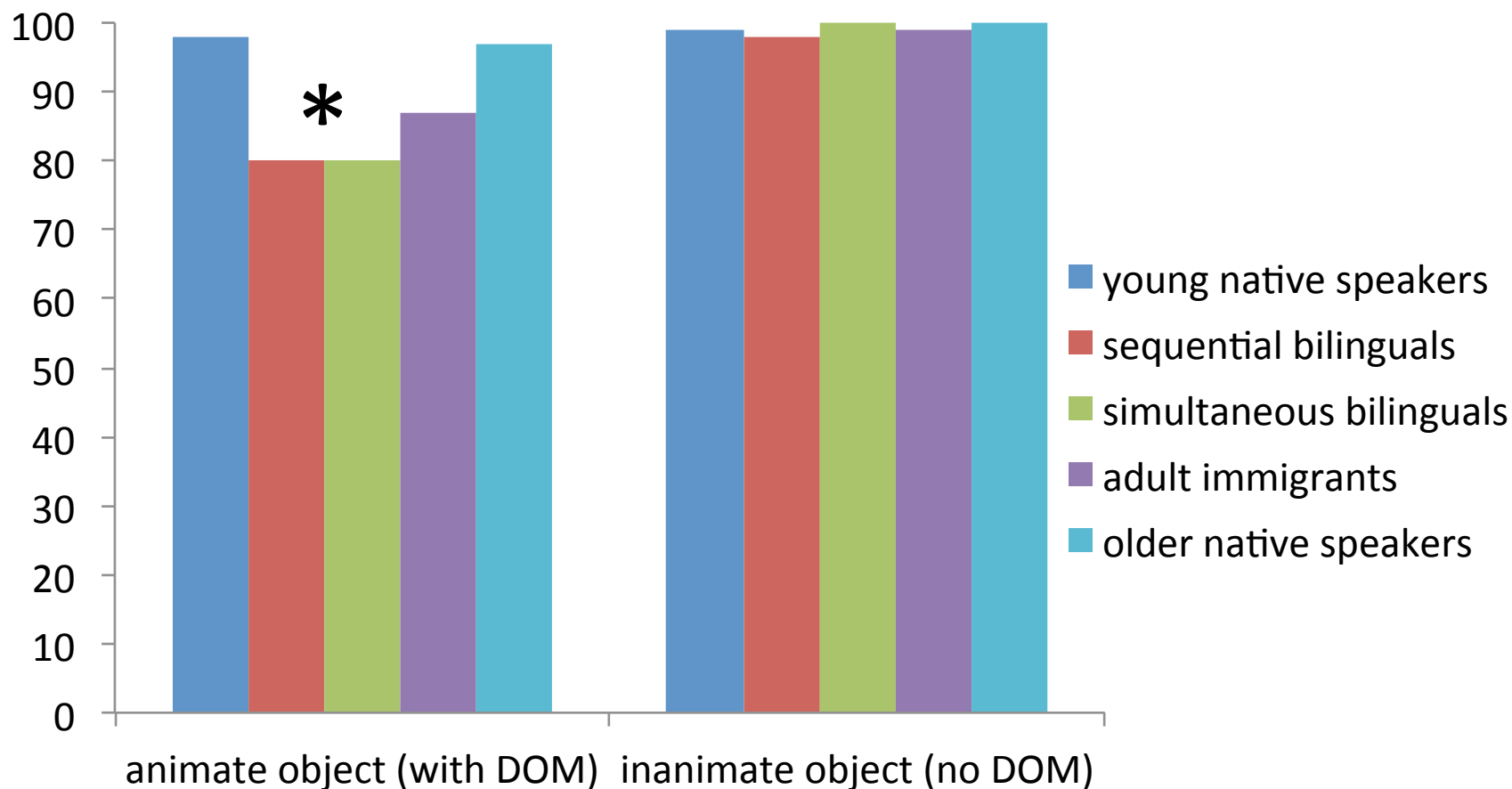
# Self-ratings in Spanish and English



# Written Proficiency in Spanish



# Accuracy Oral Narrative Task

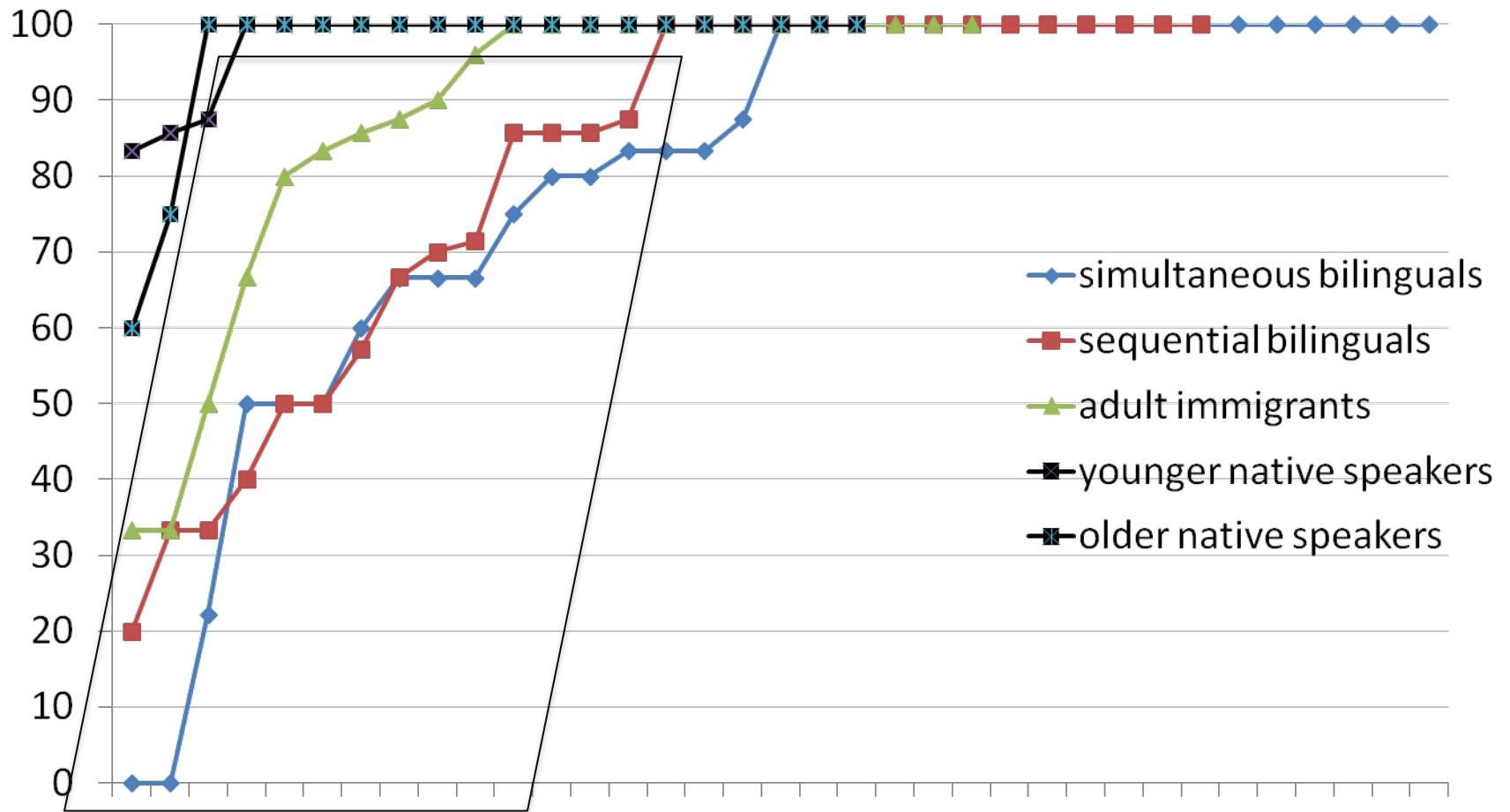


\*Juan vio María.

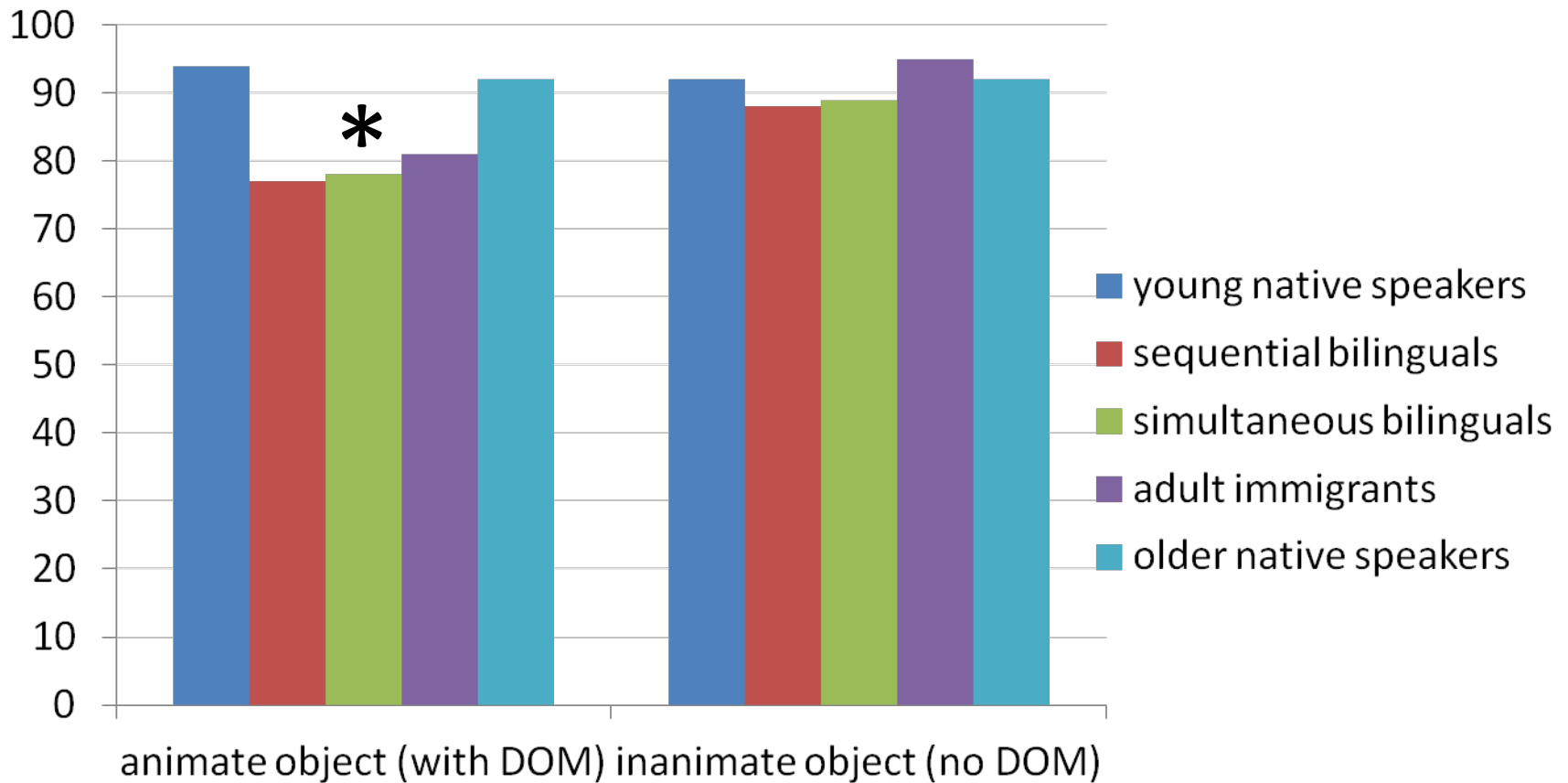
Juan vio la película.



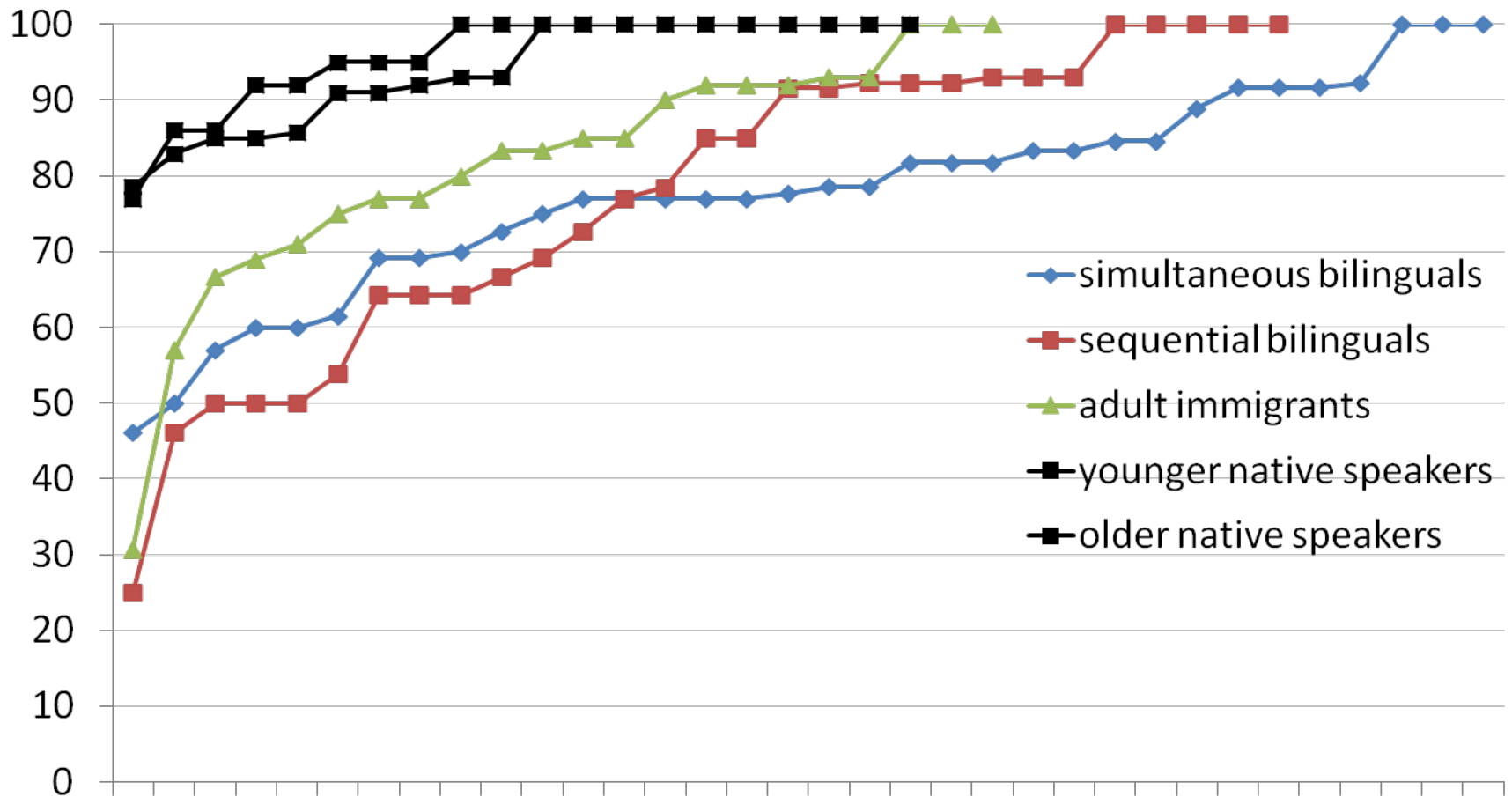
# Accuracy on animate objects by participants



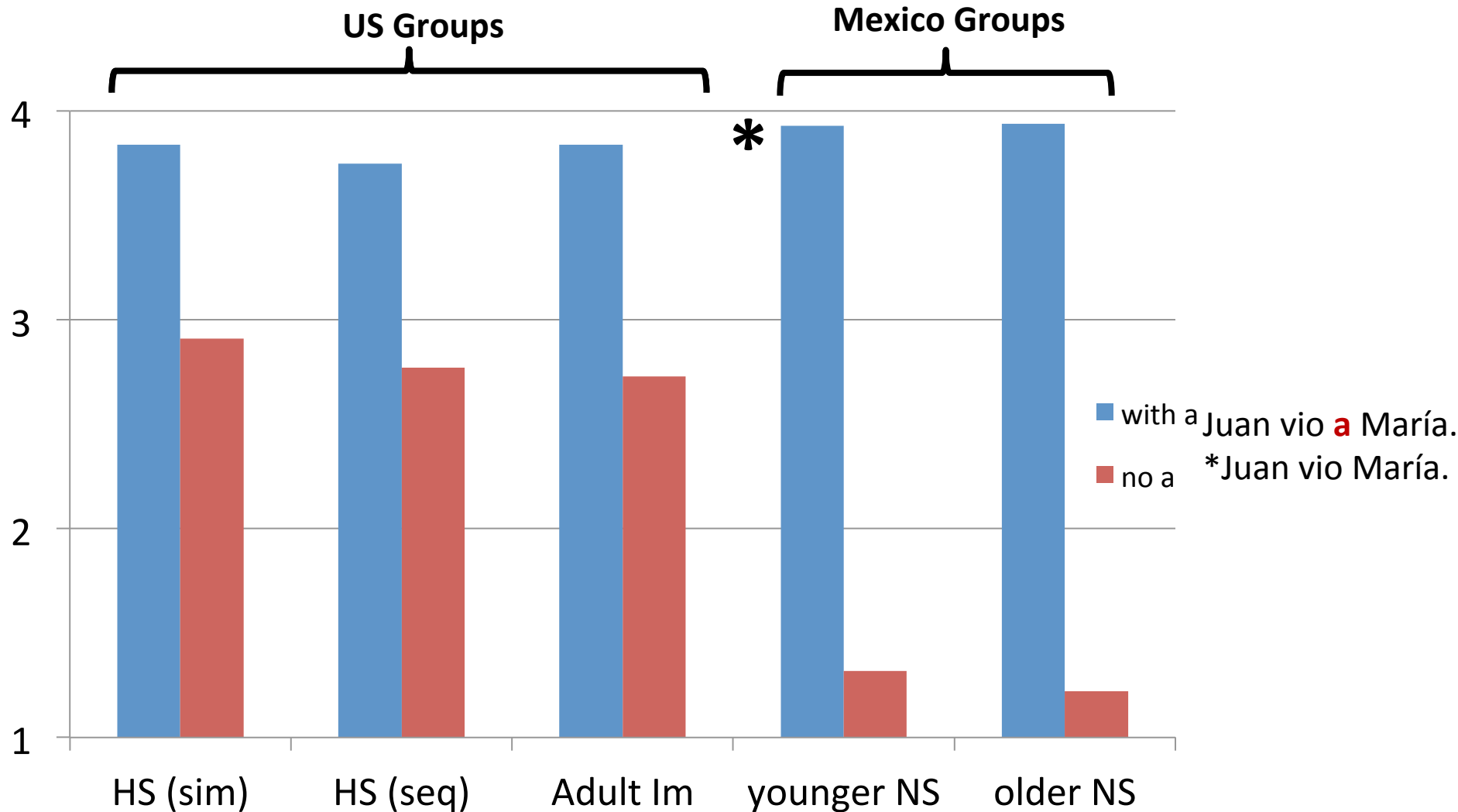
# Accuracy Picture Description Task



# Accuracy on animate objects by participants



# Spanish: Animate Specific Direct Objects



# Adult Immigrants

(Montrul & Sánchez-Walker 2013)

- Oral Narrative Task
- The adult immigrants were split into *omitters* (n = 10) and *non omitters* (n = 13).
- The *omitters* were older than the *non-omitters* at time of testing (48.3 vs. 43.2), acquired English later in life (22 vs. 20.2), and had resided in the US longer (27.3 years vs. 23.1 years).
- The two immigrants with the lowest accuracy on DOM (both 33%) had been in the United States for 33 and 37 years, respectively.

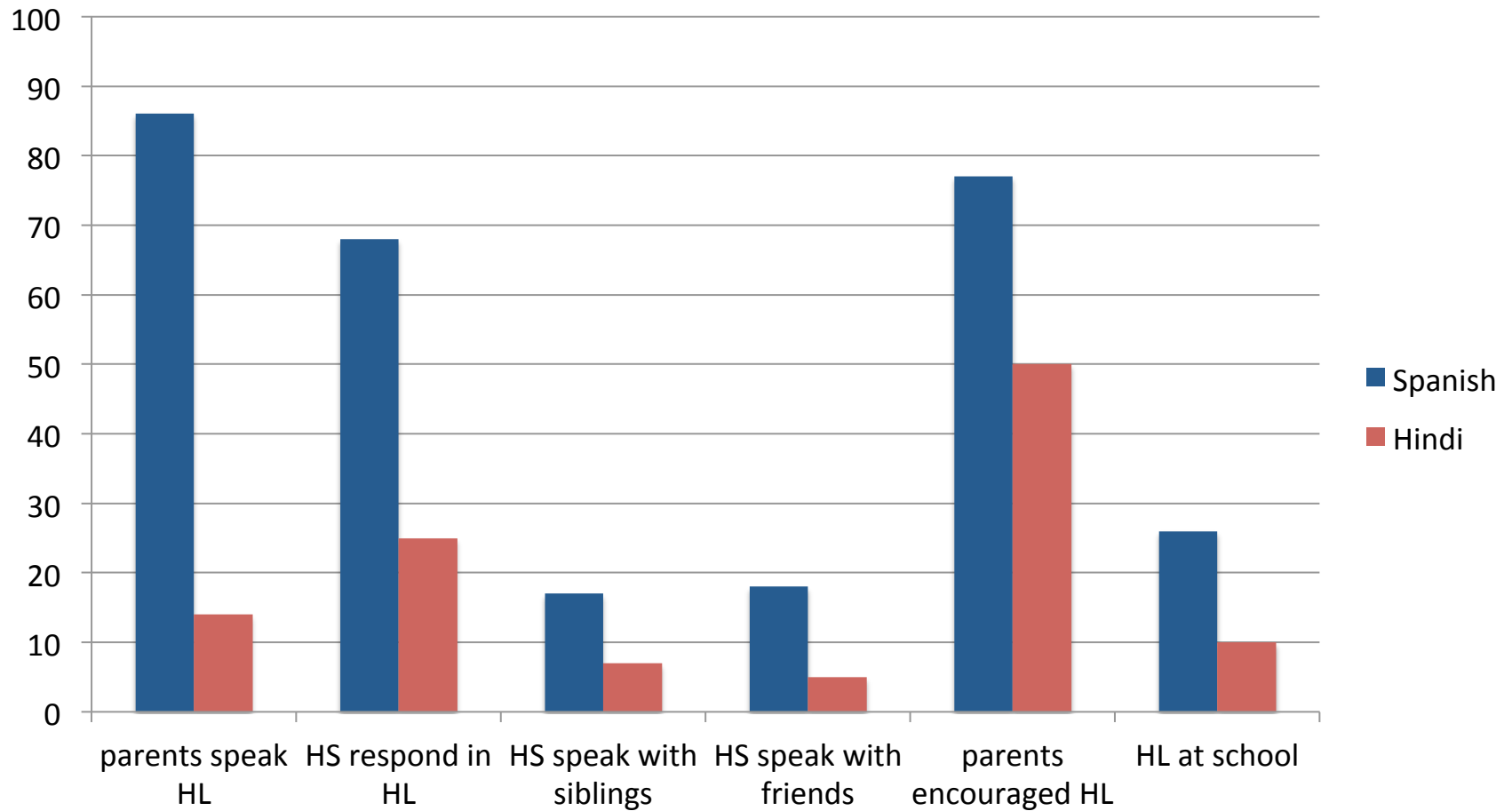
# Summary Spanish Study

- DOM seems to be more affected in Spanish-speakers in the US, including late arrivals (adult immigrants) who have been living in the US for several years.
- It is not affected in the groups of native speakers tested in Mexico, younger or older.
- **DOM may be subject to L1 attrition in Spanish**, not just incomplete acquisition (or child attrition) as previously thought.

# Patterns of language use?

1. % of parents who spoke HL exclusively to children
2. % of HSs who always responded in the HL
3. % of HS who spoke the HL with siblings
4. % of HS who spoke the HL with HL-speaking friends
5. % parents who encouraged the HS to speak HL at home
6. % HS who received some HL instruction in elementary school

# Patterns of Language Use





# Puzzle

- Spanish has a wider speech community and enjoys more vitality and use in the US in comparison to Hindi. YET, it exhibits higher degree of erosion of DOM.
- It affects both the first and the second generation.

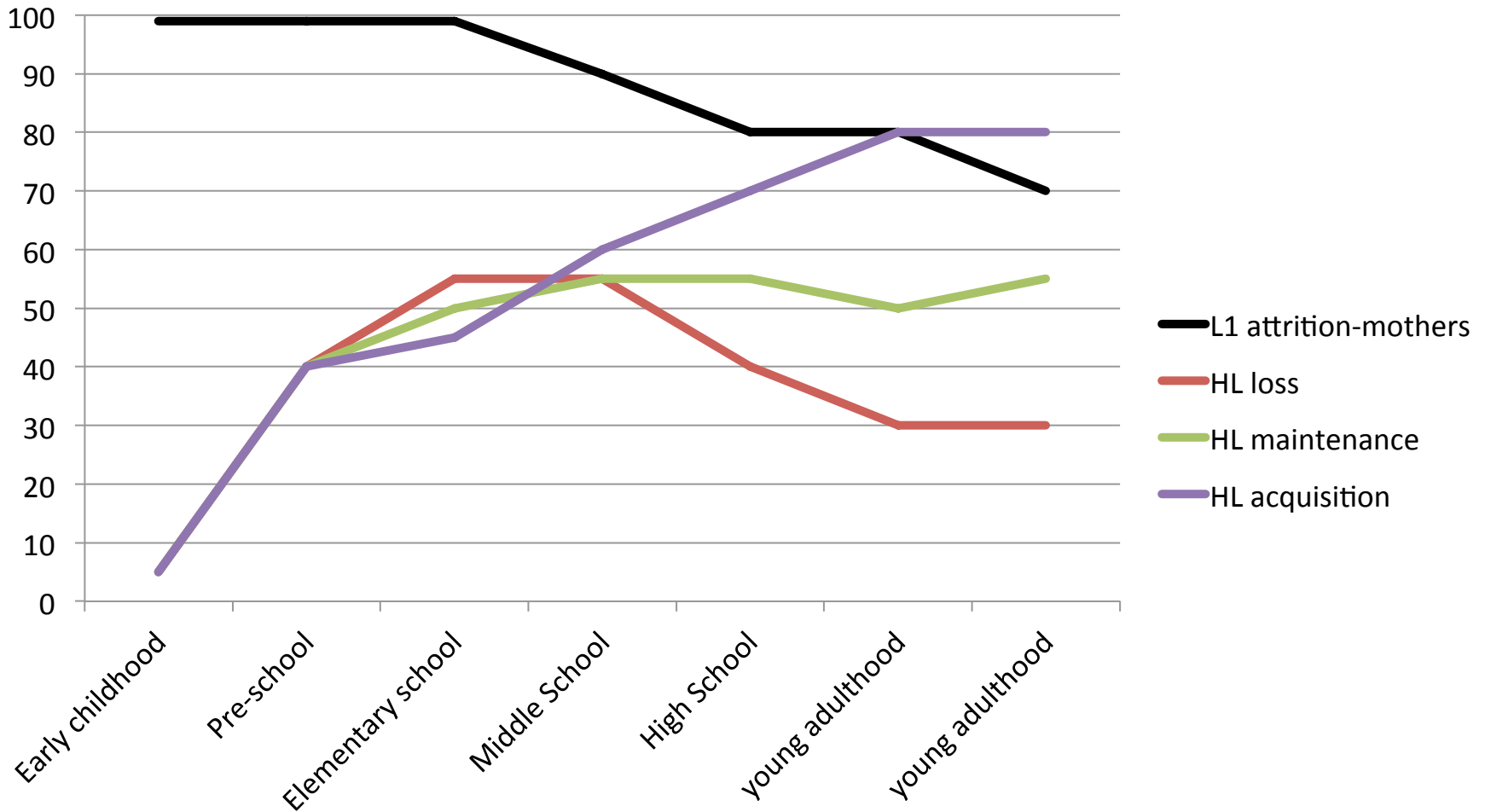
# Questions

- I have argued extensively that the structural changes observed in the heritage speakers are mainly due to reduced input and use (incomplete acquisition in childhood).
- But can they be due to the *nature of the input*? (Sorace 2004, Rothman 2007, Pascual y Cabo 2013)
- Some of the speakers of the first generation show attrition.
- Heritage speakers speak the language with the first generation (adult immigrants).
- **Can speakers of the first generation (parents) transmit patterns of attrition to the second generation (children)?**

# My answers

- It is **unlikely** that the parental generation transmits “attrited” patterns to the second generation.
- What is likely is the opposite: ***that the heritage speakers influence the parental generation.***
- Heritage speakers may be the agents of language change, at least in Spanish in the United States.

# Developmental Scenario



# Attrition

- No immigrant could be attrited upon arrival in the new country.
- It takes at least 10 years to start seeing signs of attrition in morphosyntax, in most cases more than 20 or 30 years.
- Therefore, *as bilingual children are growing up if they show non-target development, it cannot come from their parents' input.*

# Logic

- Patterns of incomplete acquisition in the heritage speakers could be traced back to earlier stages of bilingual development.
- Children interact exclusively with parents early in linguistic development (pre-school)
- During the school-age period the social group of the child widens. Parents are no longer the main source of input (although they could be for the heritage language).
- Main source of input is the peer group.

# Logic

- As families start using the majority language at home, the parents may start using more English in the home with the children as well, gradually.
- By the time heritage speakers are teenagers or young adults, the parents might be attrited.
- Many heritage speakers start using the heritage language more in young adulthood than earlier.
- By now, their patterns of incomplete acquisition may reinforce the grammar of the parents.

# Shin and Otheguy (2013)

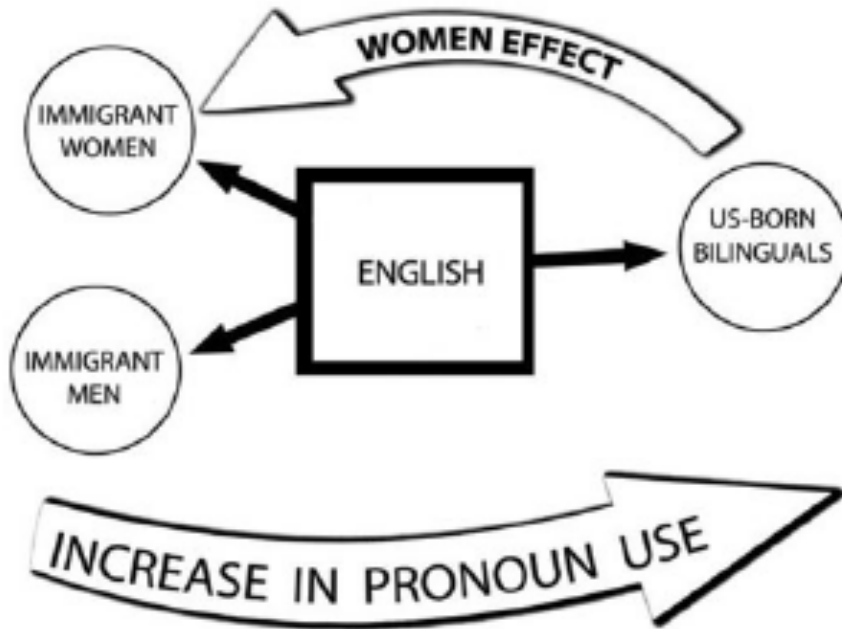


FIGURE 3. Sources of change in pronoun rates in Spanish in NYC.

“We propose that the position of linguistic leadership occupied by women is the result of their extensive contact with high-pronoun using second-generation Latinos.” (p. 432)



# Kerswill (1996)

- Models linguistic change by taking into account age of acquirers and transmitters and linguistic features likely to change.
- Nature of relationship between interlocutors  
Infant child-parents, older child/preadolescent-peer group, adolescent/young adult-adult
- **Adolescents may be the most influential transmitters of change**

# Meisel et al. (2013)

- Only successive bilinguals (L2 learners) can be agents of language change, when they acquire the second language incompletely.
- L1 learners, monolinguals as well as bilinguals, are unlikely agents of language change.
- “Heritage language learners are the least likely group to exert a significant influence on **learners of the majority language**” (p. 163)

# How do we test for this?

- Compare child heritage speakers to adult heritage speakers.
- Test mothers and children of different ages.
- Woman/mother effect on bilingual children (Shin and Otheguy, 2013)
- Heritage speakers of bidialectal parents adopt the dialect of the mother (Potowski 2008)

# **How is DOM acquired by children?**

Rodríguez Mondoñedo (2008)

Spanish-speaking children data available in CHILDES (Maria, Koki, Juan, Emilio), ages ranging from 1;07 to 3;00.

Spanish-speaking children have an adult grammar. (98.8% accuracy at age 3)

# Bilingual Children (ages 1;00-3;00)

## (Ticio, 2015)

- CHILDES data base
- 6 simultaneous bilingual children (5 Spanish-English, 1 Catalan-Spanish)
- **74.62%** omission of DOM with animate, specific direct object by age 3;00
- Unlike what has been reported in monolingual acquisition of Spanish, simultaneous bilingual children do not develop acquisition and mastery of DOM by 3;00 years of age.

# **Three Follow -ups**

# School-Age Bilingual Children

## Montrul & Sánchez-Walker (2013)

groups	N	Mean age	Parental rating English	Parental rating Spanish	PPVT (English) Standard score	TVIP (Spanish) Standard score
Simultaneous bilinguals	17	10;1	5	<b>3.8</b>	98.9	<b>83.1</b>
Sequential bilinguals	22	12;2	4.7	4.4	97	<b>86.9</b>
Native speakers	20	11;0				<b>122.1</b>

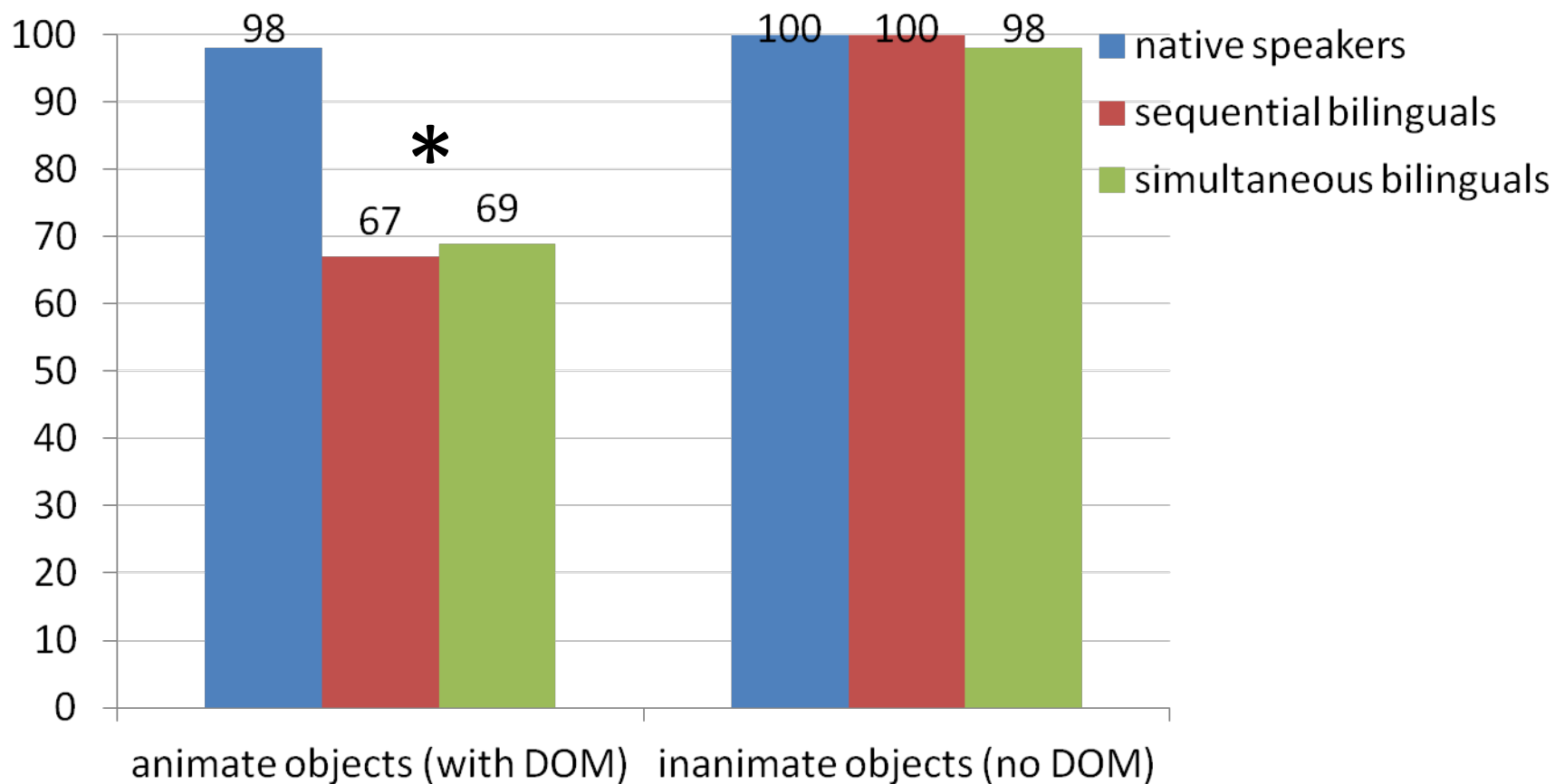
**Age:** ns

**Parental ratings** English > Spanish both bilingual groups

**PPVT** simultaneous bilinguals = sequential bilinguals

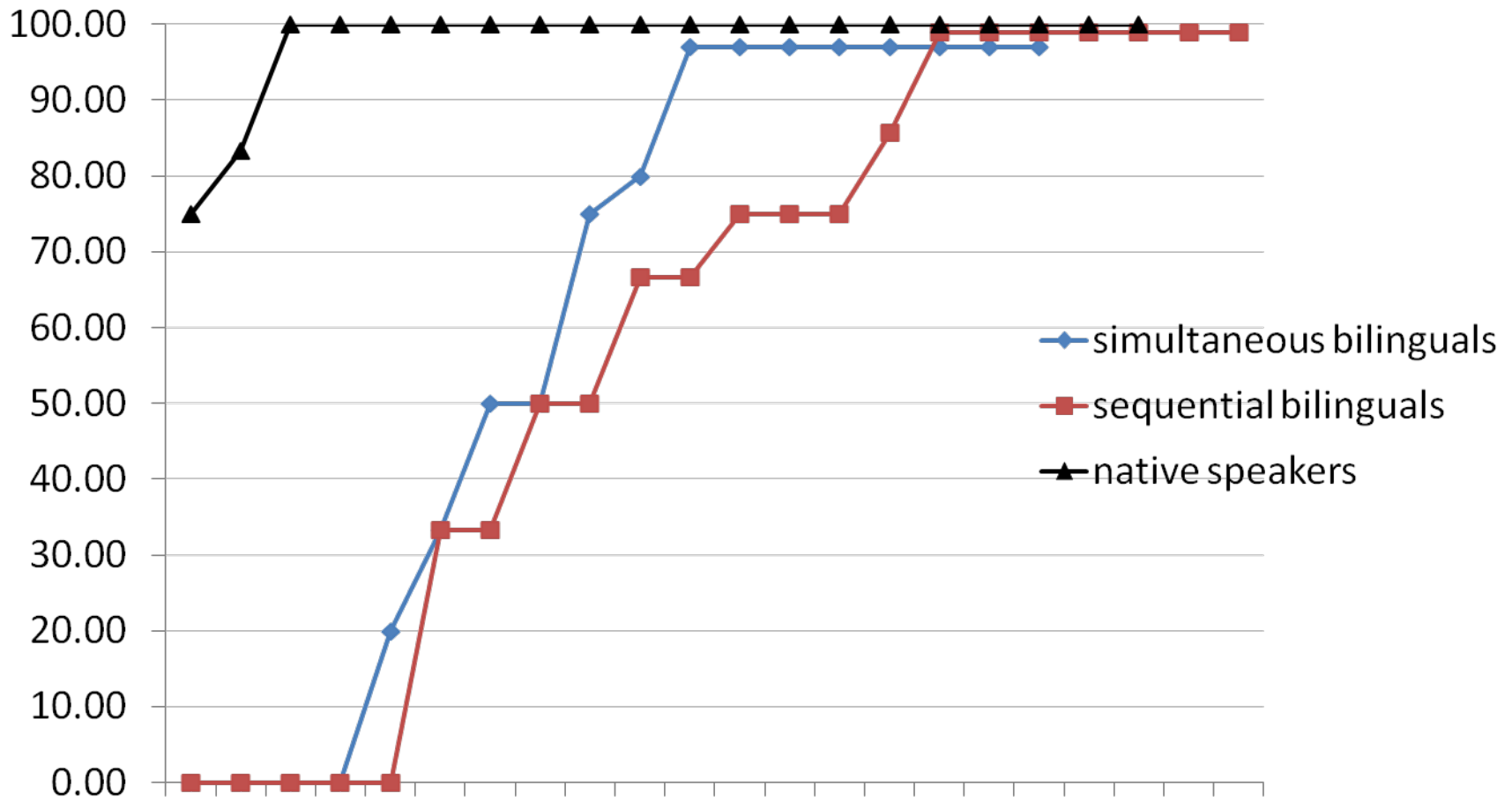
**TVIP** native speakers > simultaneous and sequential bilinguals

# Accuracy on DOM Oral Narrative

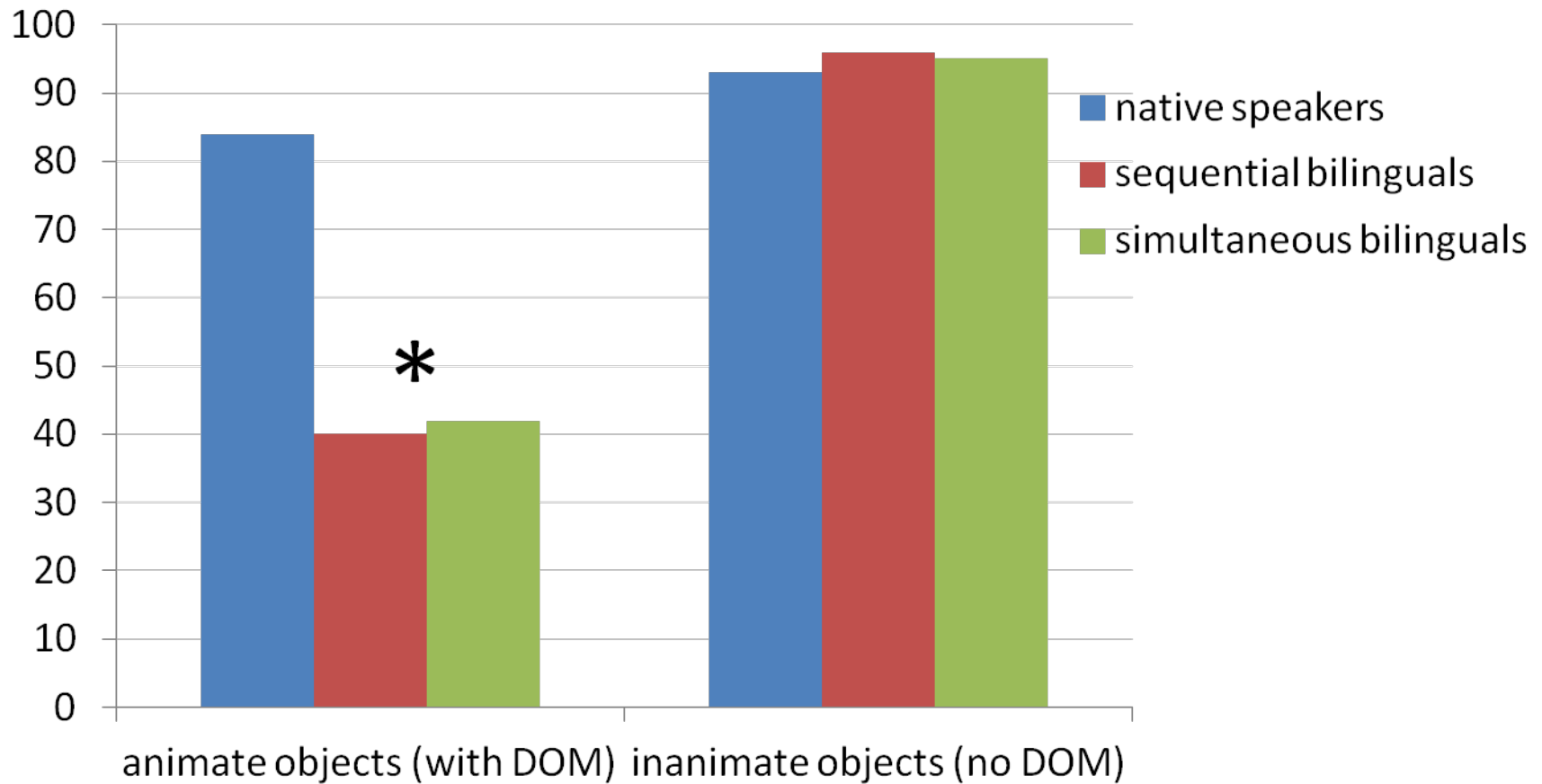




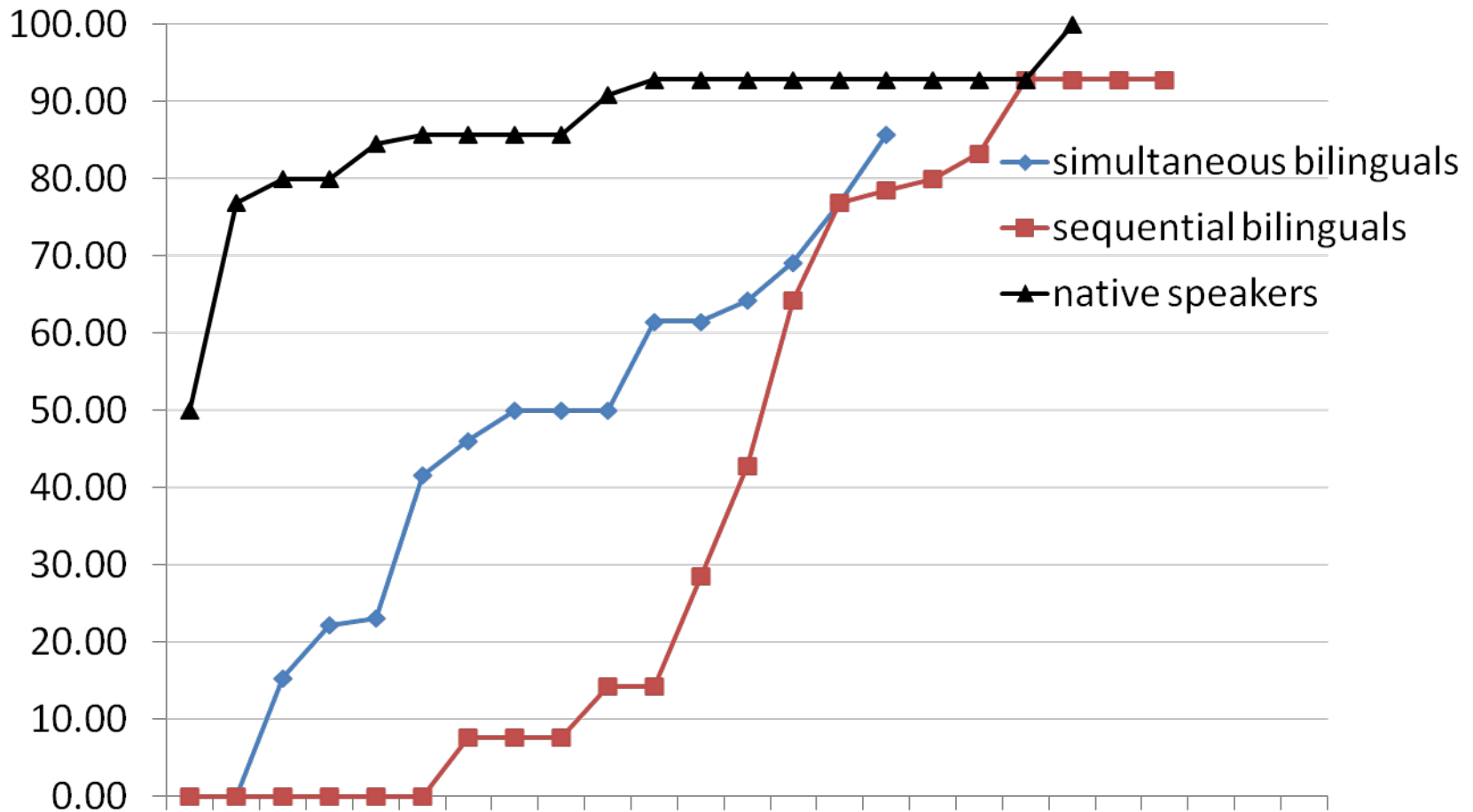
# Accuracy on animate objects by participants



# Accuracy on the Picture Description Task



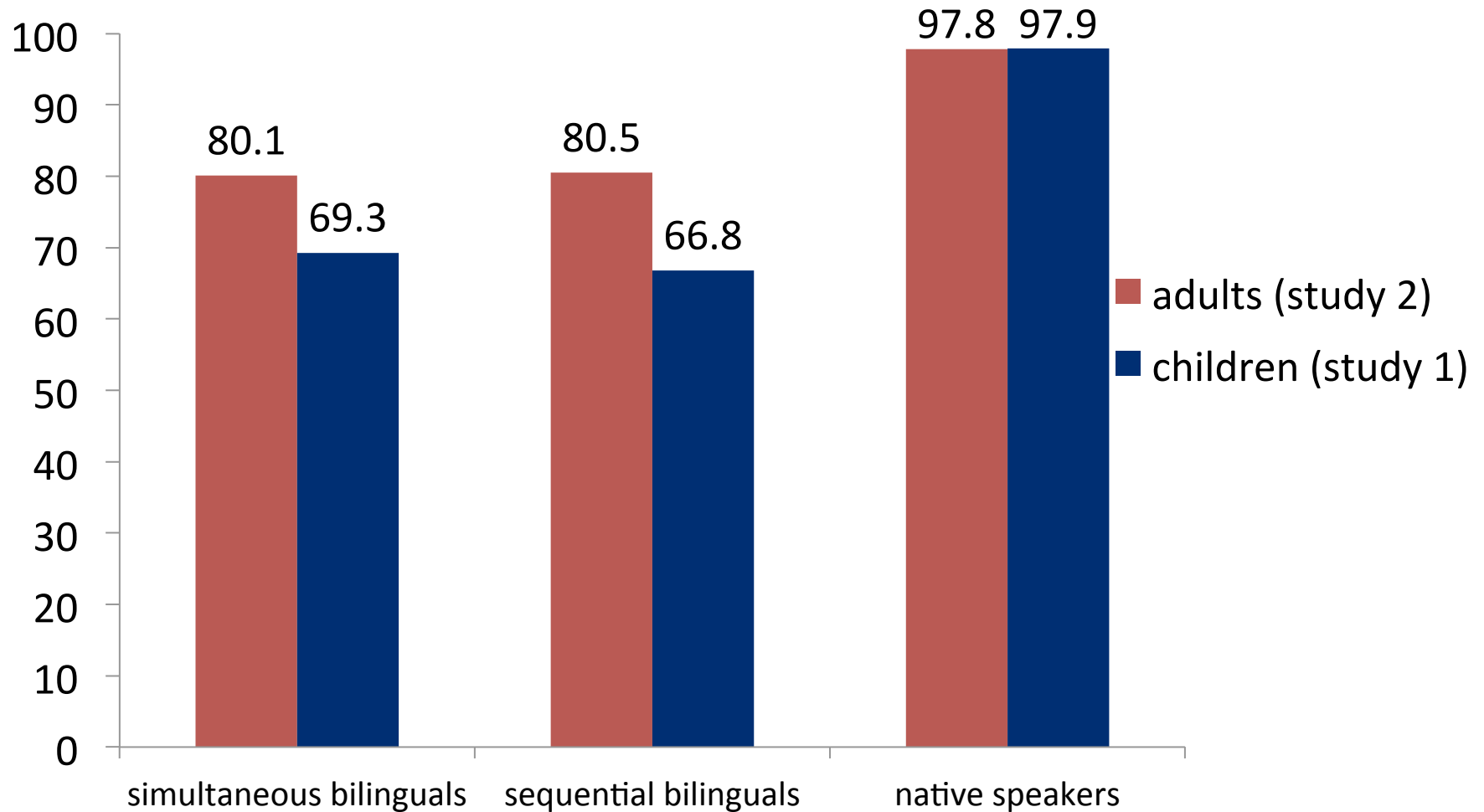
# Accuracy on animate objects by participants



# Summary

- School-age Spanish heritage speakers omit DOM in Spanish significantly more than age-matched native speakers from Mexico. **This is a sign of incomplete acquisition of Spanish DOM.**
- Quantity of input as indicated by age of onset of bilingualism (simultaneous vs. sequential bilinguals) does not seem to matter.
- There is high individual variability in the two bilingual groups.

# Child and Adult Heritage Speakers



# Nature of Input

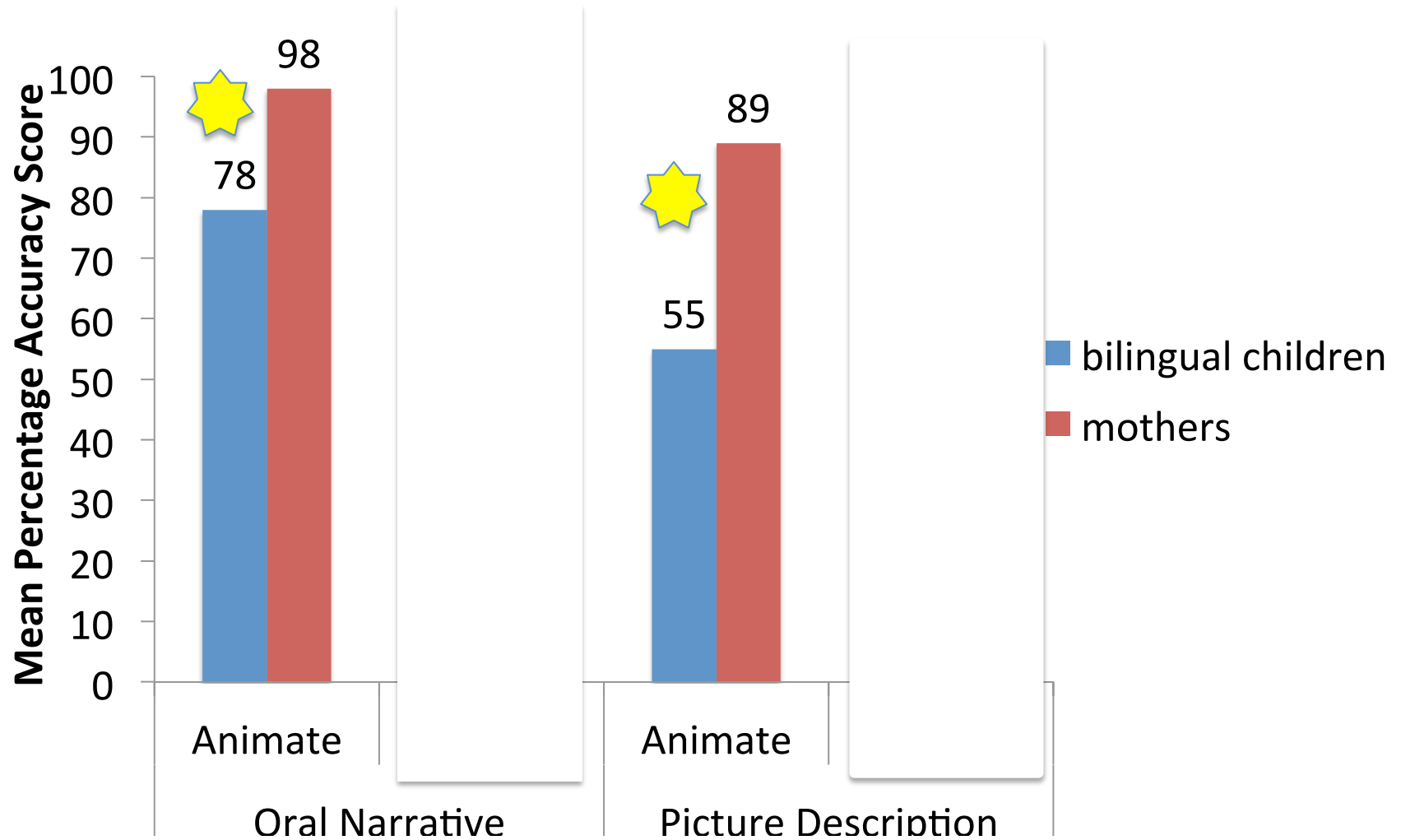
- Immigrants cannot be assumed to be attrited upon arrival, so input to bilingual children may not show signs of attrition.
- Input to adult heritage speakers may show signs of attrition if the parents have been exposed to English for more than 15 or 20 years.

# Mothers and Children

## Are bilingual children receiving attrited input?

- 14 bilingual children ages 6-10 and their mothers.
- Half of the children were simultaneous bilinguals and the other half were sequential bilinguals.
- Same oral tasks were administered.

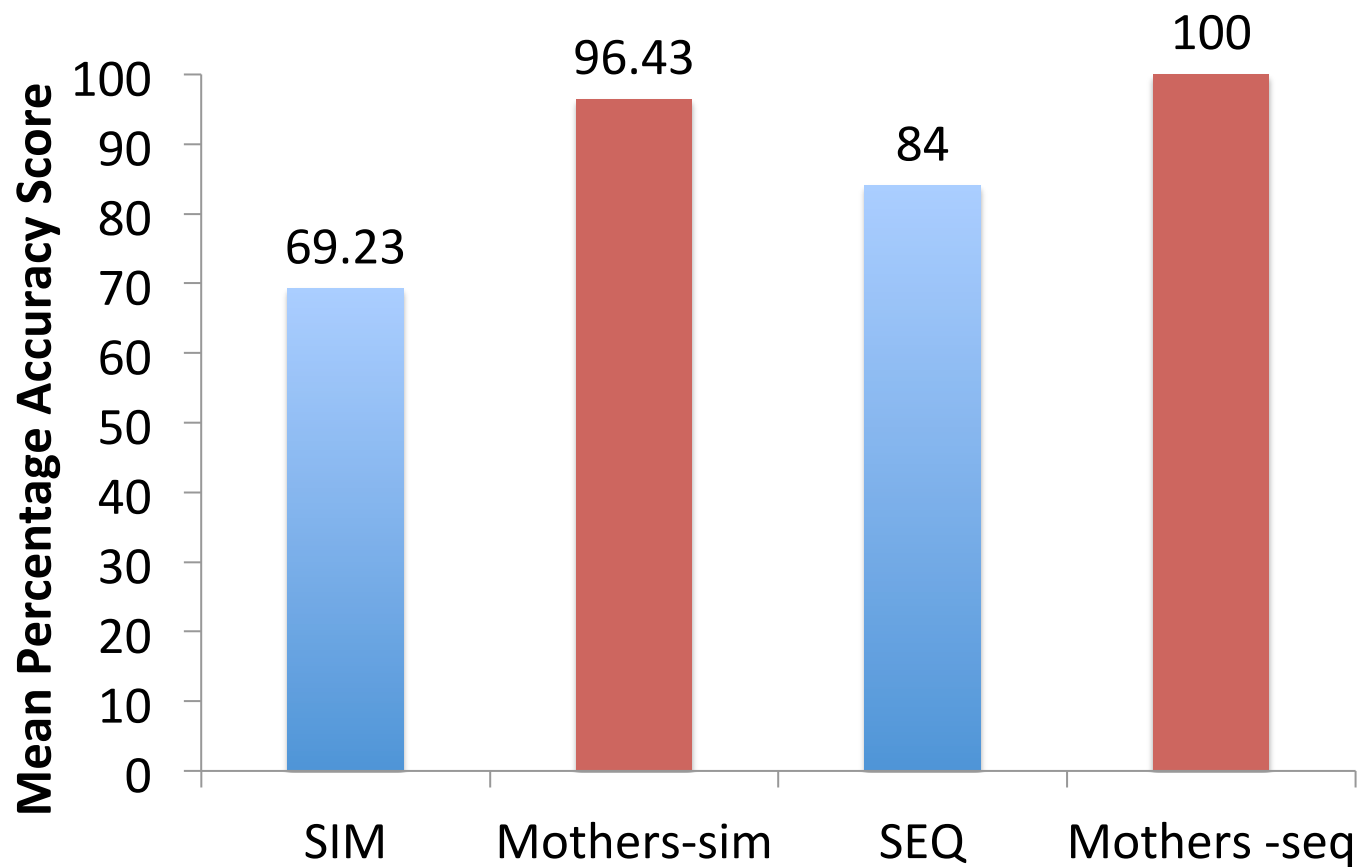
# Results





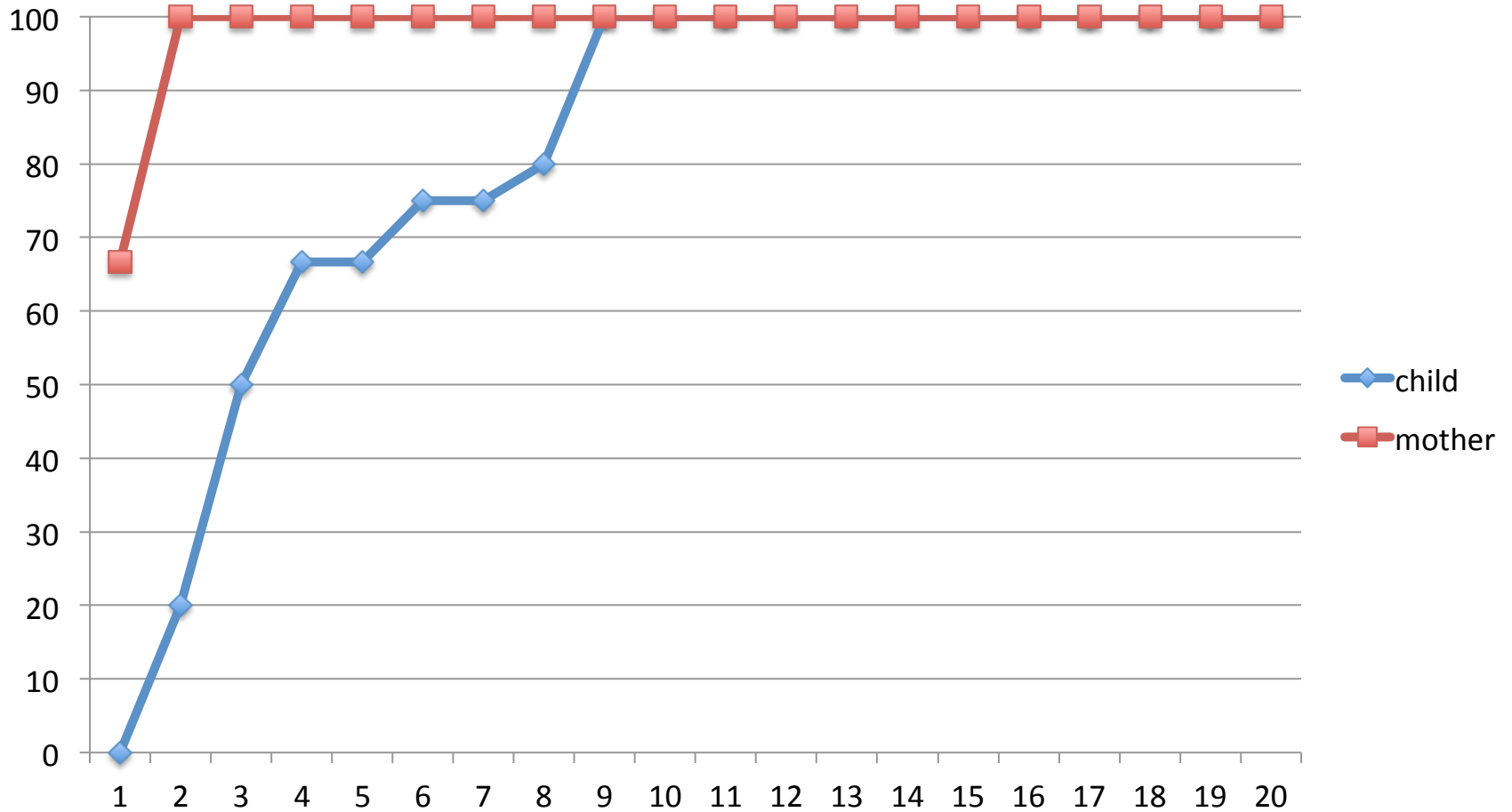
# By Type of Bilinguals

## Results Oral Narrative



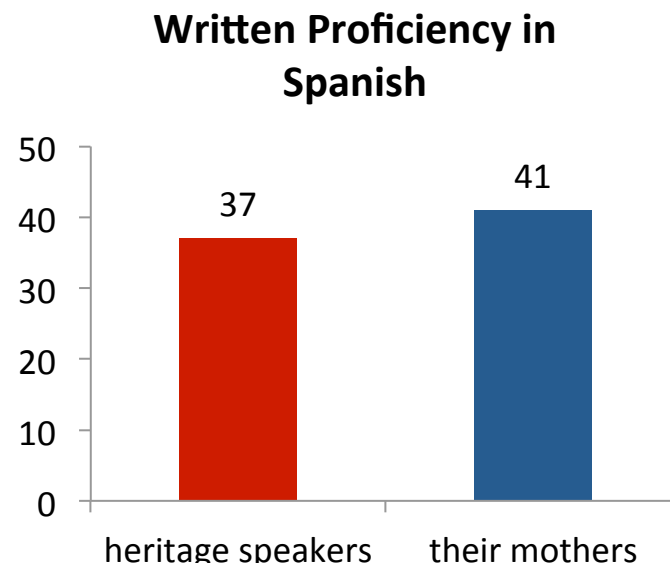
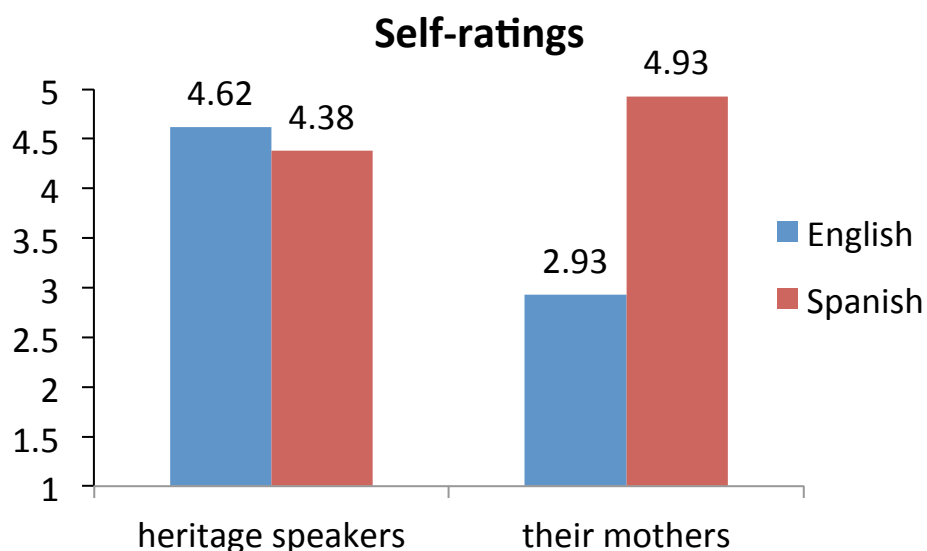
# Oral Narrative

## Accuracy on animate objects

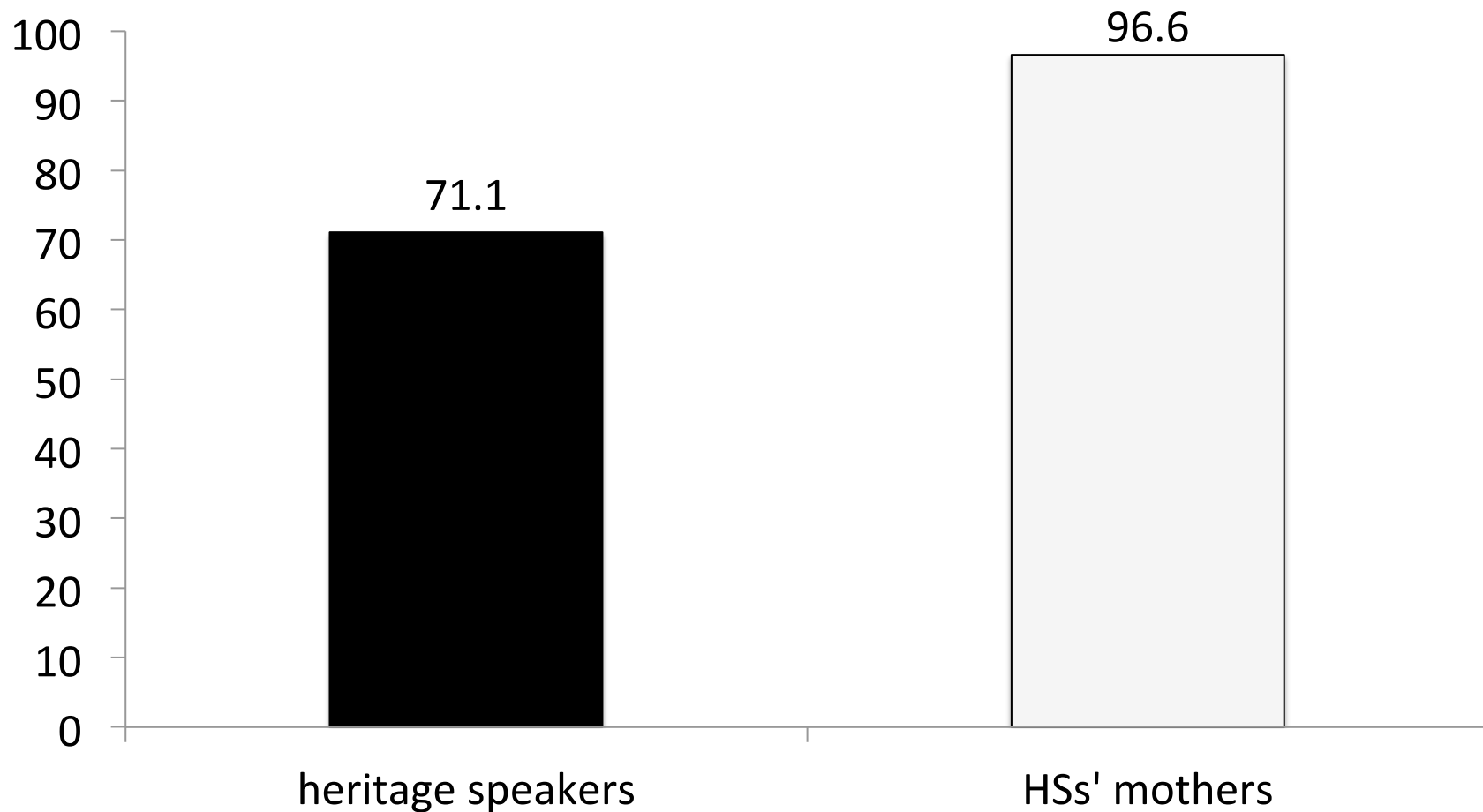


# Mothers and Older Children

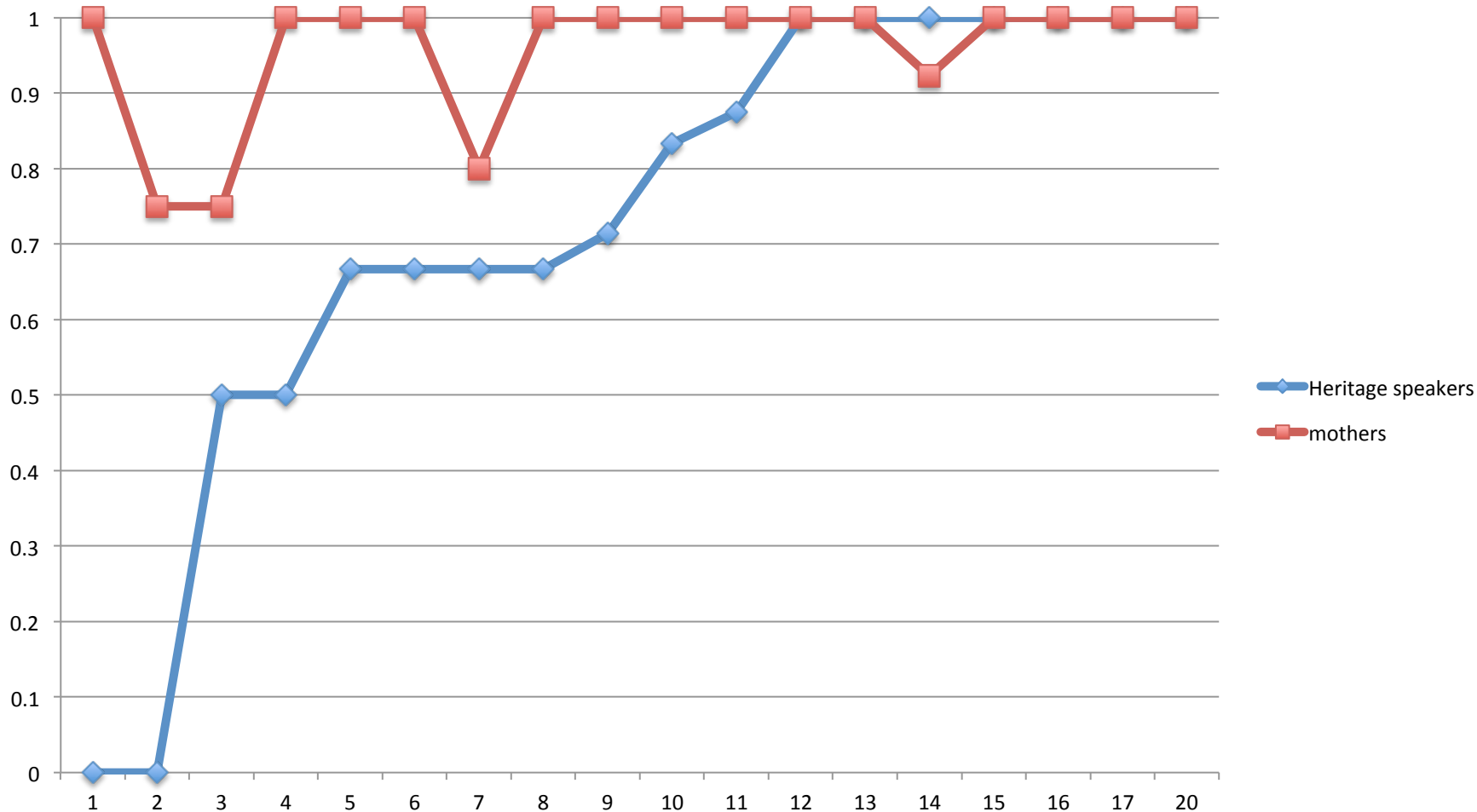
- 19 heritage speakers (18-26, mean age 22.28)  
AoA English (ages 2-8, mean 4.8)
- Their mothers (mean age 45.86)



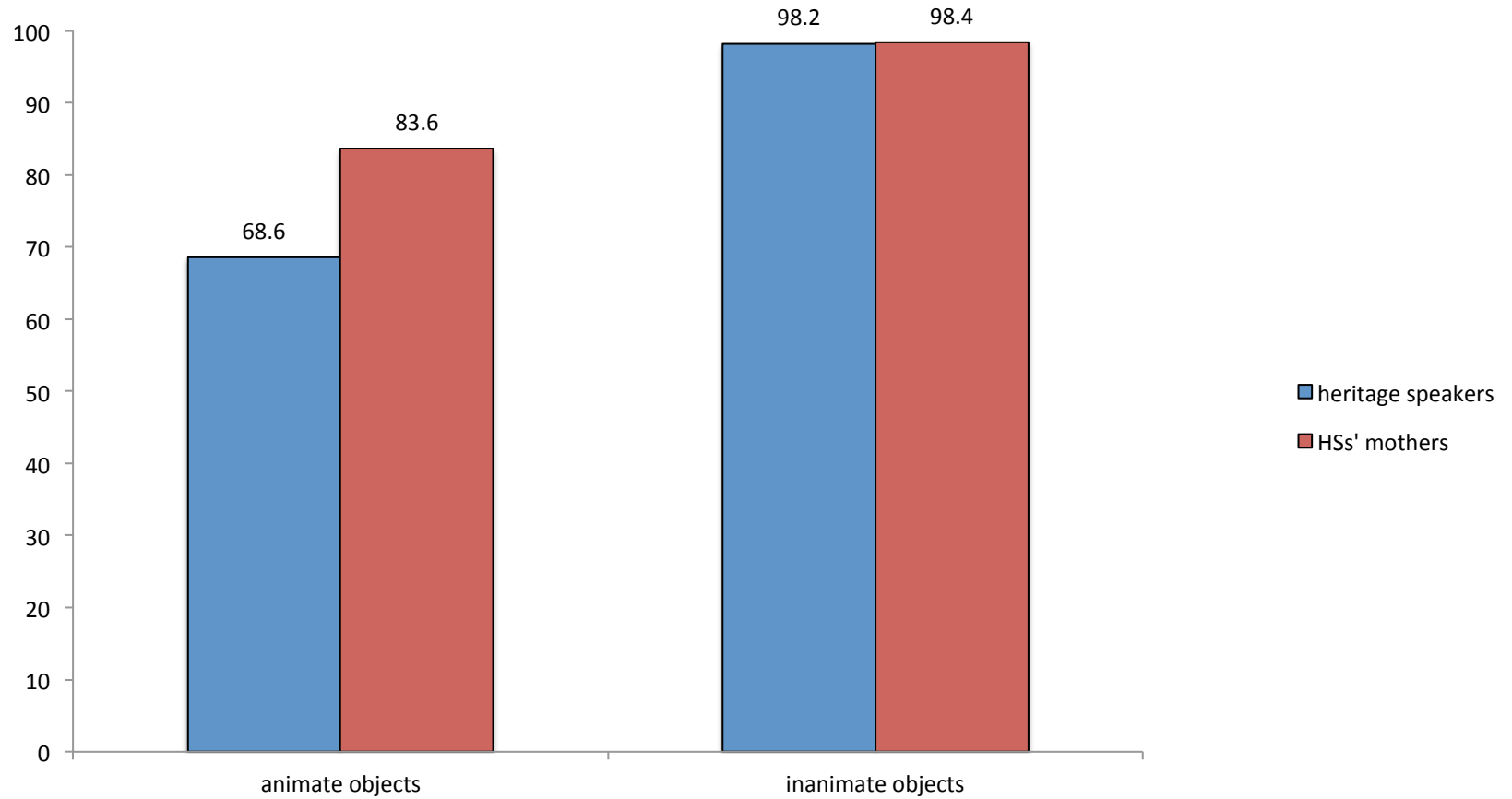
# Oral Narrative (DOM objects)



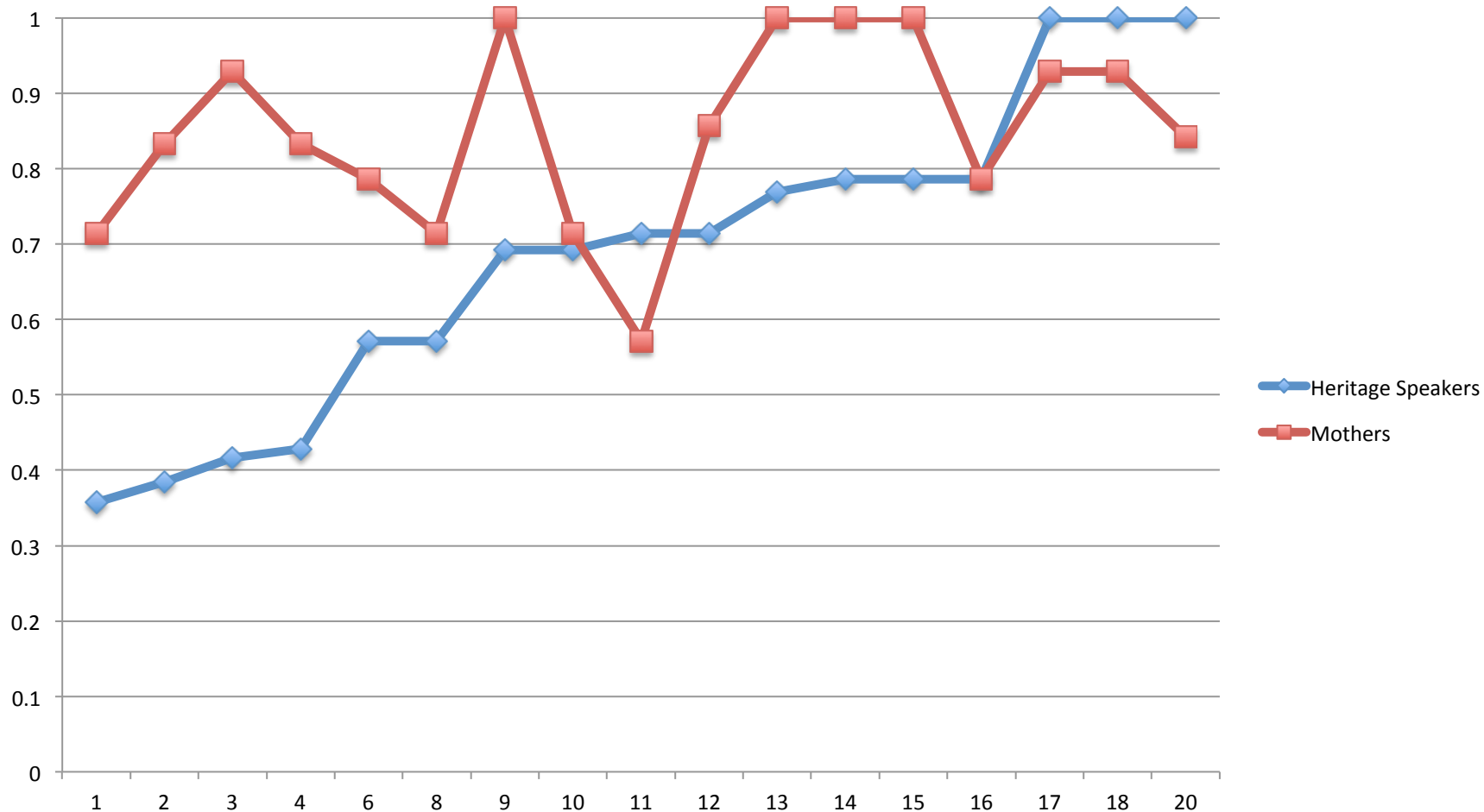
# Mother-Child Pairs (DOM objects)



# Elicited Production Task



# Mother-child pairs (DOM objects)



# Next stage

- Collect data from a larger sample of mothers and children ages 4-18 ( $N \sim 100$ )
- Control for AoA of English
- Birth order
- Mothers' proficiency and use of English
- Mother's proficiency and use of Spanish



# Conclusion

- L1 attrition of morphosyntax in adults is rare
- It is subject to high individual variation
- It happens in some cases (Spanish) but not in others (Hindi)
- Language attrition in the parental generation could not explain the patterns of incomplete acquisition in the Spanish and Hindi heritage speakers.

# Transmission or Language Change?

- If heritage speakers and their mothers converge at a lower level of accuracy,
- How can we tell who is influencing who?
- Previous studies suggest that adolescents may be agents of language change.
- Or are the mothers the transmitters of the change?

*Longitudinal data of older child-mother pairs*

# Conclusion

- Young bilingual children do not necessarily receive “attrited” input from their monolingually raised parents. (Children of bilingual parents may be different).
- Bilingual children show delayed and incomplete development of DOM in Spanish.
- By the time bilingual children reach adulthood, some of their parents (maybe grandparents) may be attrited.

# Conclusion

- Incomplete acquisition and attrition of DOM may become generalized in adults, and DOM-omission gets transmitted and reinforced by the different groups.
- This situation gives rise to a new dialectal feature of US-Spanish with non-DOM marked animate specific direct objects like in English.

**Thank you!**