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ASYMMETRIES IN NOMINAL AND VERBAL MORPHOLOGY IN HERITAGE LANGUAGES

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SETTING THE STAGE

POSSIBLE SOURCE OF INCOMPLETE ACQUISITION

A child grows up in a minority language-speaking family learning that language as L1; as this child enters the schooling system in the dominant language his/her learning of the home language slows down and never reaches the level of full competency

HERITAGE LANGUAGE SPEAKER (HS)

- A person who grew up hearing (and possibly speaking) a language, who can understand and perhaps speak it to some degree, but who now feels more at home in another, more dominant language

WHY BOTHER?

- Heritage language: what is left after you have stripped away everything that is rote learned, driven by tradition, enforced by the norm, and driven to non-compositionality by many users
- Because of the minimal structure, HLs may allow us an opportunity to see patterns that can be obscured in completely acquired languages

WHY BOTHER?

- Understanding structure of heritage grammar
- Using this understanding to address theoretically challenging questions

MAIN QUESTION FOR TODAY

MAIN QUESTION

- **Fact:** In comparison with baseline speakers, heritage speakers (**HSs**) show higher error rates in morphological forms.
- **Question:** Is the magnitude of morphological change in heritage languages similar across different lexical and functional categories?

MOTIVATION FOR THIS QUESTION

- Nouns and verbs show clear difference in L1 acquisition
- Differential comprehension of nouns vs. verbs in lexical decision tasks by HLs:
 - Verbs are judged faster and more accurately in Heritage Russian (Polinsky 2005) and Heritage Korean (Lee et al. in prep)
 - Nouns are judged faster and more accurately in Heritage Spanish (Montrul 2009)

MOTIVATION FOR THIS QUESTION

- Heritage speakers are unbalanced bilinguals; noun-verb asymmetry plays an important role in code-switching under bilingualism:
 - Verbs represent the matrix language
 - Nouns represent the embedded language

OUTLINE FOR TODAY

- Nominal vs. verbal morphology across several heritage languages
- General results
- Possible explanations
- Theoretical implications

HLS WE WILL CONSIDER HERE

Language	Morphological type	Argument alignment	Pro-drop?
Hindi	Inflectional	Ergative	YES
Russian	Inflectional	Accusative	NO
Korean	Agglutinative	Accusative	YES
Hungarian	Agglutinative	Accusative	YES
Circassian	Polysynthetic	Ergative	YES
Cayuga	Polysynthetic	Accusative	YES
Chinese	Isolating	Accusative	YES

EMPIRICAL DATA

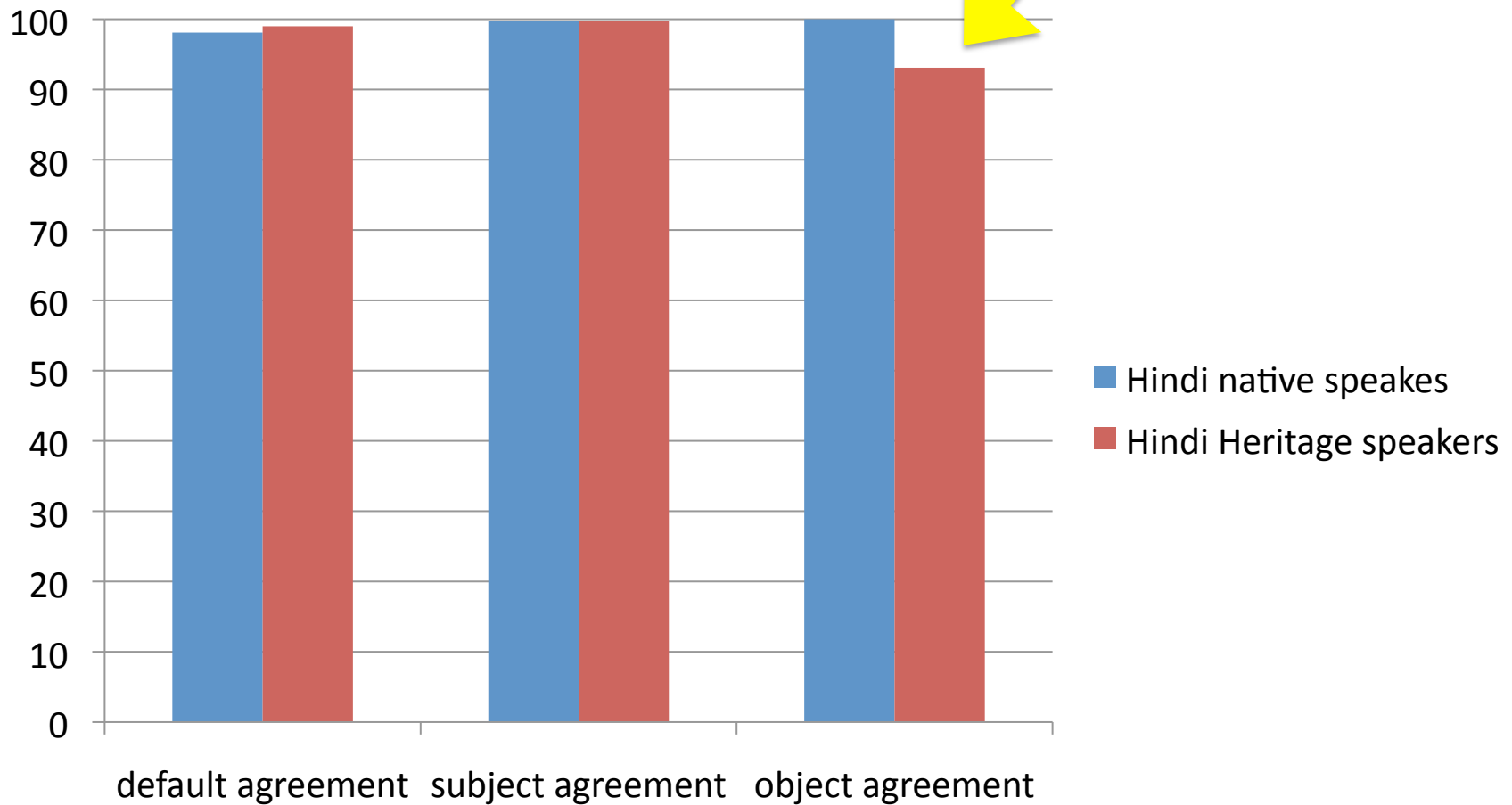
CASE AND AGREEMENT IN HERITAGE HINDI (inflectional, ergative)

- Main cases: ergative, accusative/dative, nominative (unmarked)
- Agreement: with the subject and with the absolutive in the perfective

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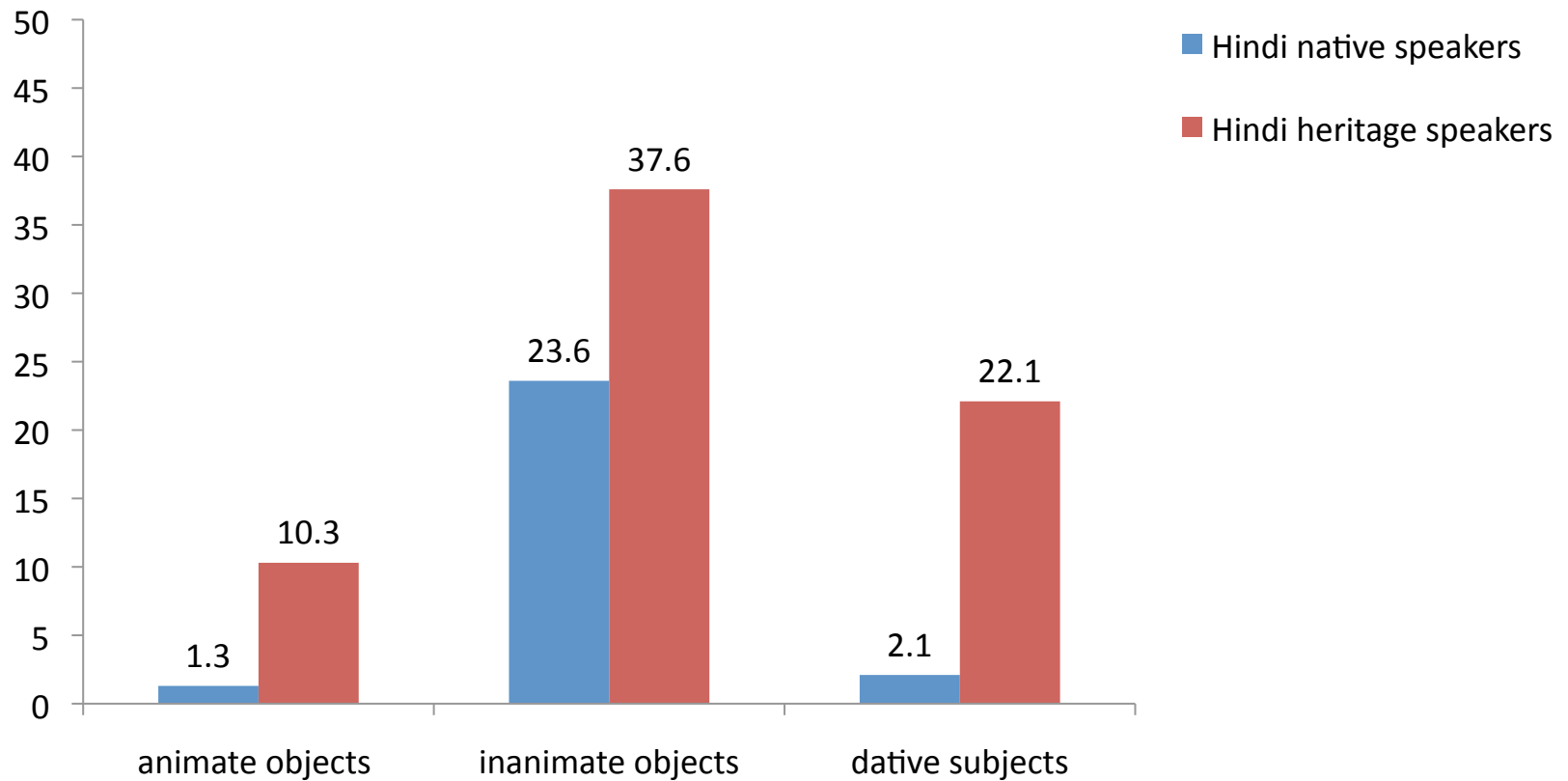
- Main cases: ergative, accusative/dative, nominative (unmarked)
- Agreement: with the subject and with the absolutive in the perfective
- Case errors are more common and occur on a greater scale than verb agreement errors (Montrul et al. 2010; Mahajan 2009)

Hindi Oral Narrative Task: Agreement



Hindi Oral Picture Description Task

(% errors with ko)



NOUN AND VERB MARKING IN HERITAGE RUSSIAN (inflectional, accusative)

- Cases: NOM, ACC, DAT, GEN, PREP, INSTR
- Agreement: with the subject

NOUN AND VERB MARKING IN HERITAGE RUSSIAN (inflectional, accusative)

- Case errors are more common and occur on a greater scale than verb agreement errors
- Case forms are often subject to omission (the use of an unmarked form), while verb forms allow over-marking

HERITAGE RUSSIAN ORAL PRODUCTION TASK: CASE VS AGREEMENT ERRORS

Tasks

- Movie plot (speaker's choice)
- Frog story
- Family history

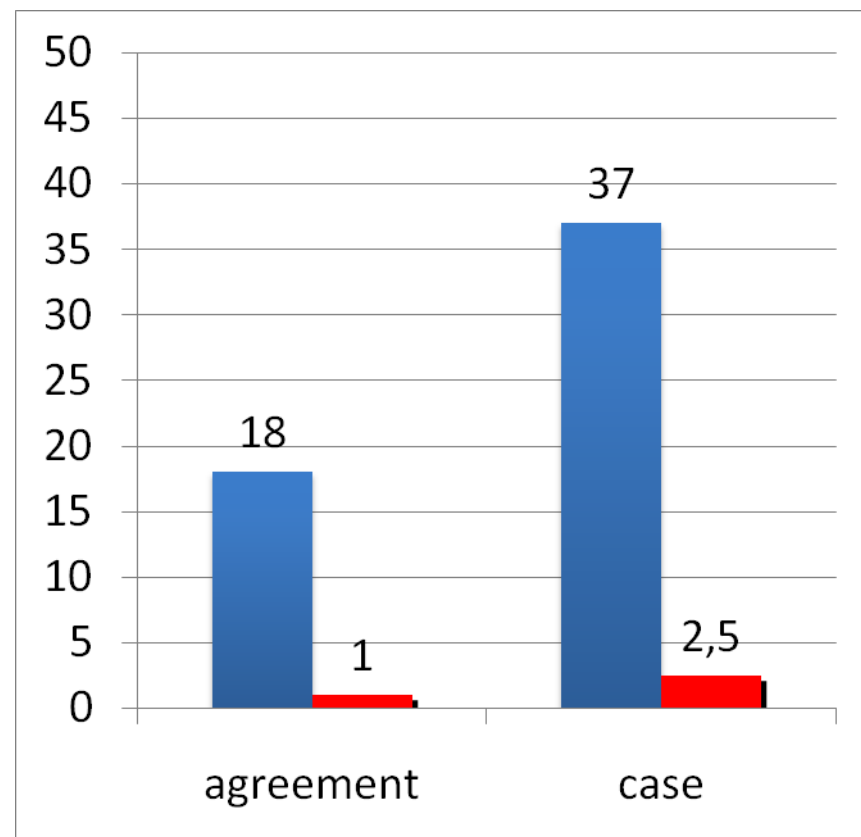
Subjects:

Heritage: N=35, avg age 27.8, 24 born in the US; age of immigration 3-8

low and medium proficiency

Controls: 18 age-matched monolinguals

Error rate, percentage



Heritage: controls

WHAT ABOUT OTHER INFLECTIONAL CATEGORIES?

- Russian nouns: gender, number
 - Gender is manifested in agreement; low proficiency heritage speakers go from a three gender system to a two-gender system (phonologically based)
- Number is syncretic with case

COMPREHENSION: RUSSIAN NUMBER-CASE MISMATCHES

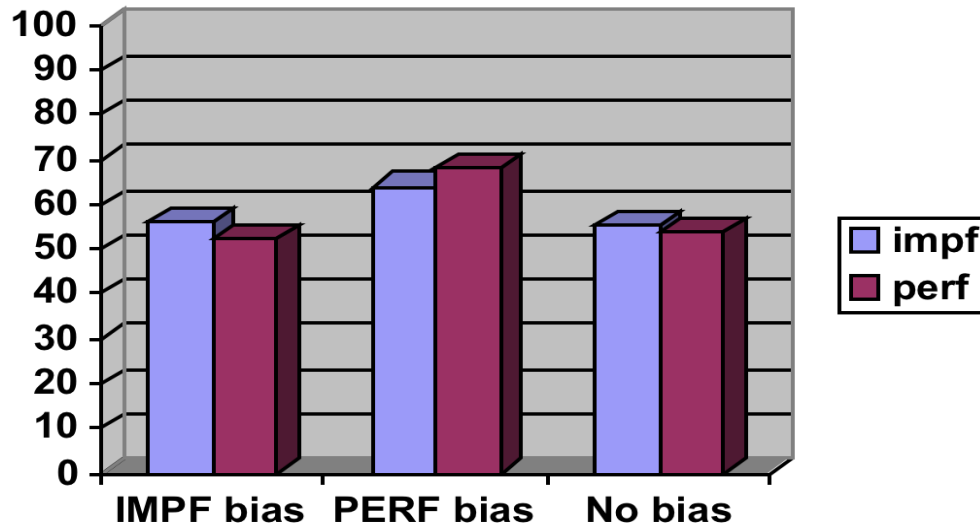
- Russian numerical phrases:
1+sg, **2-4+paucal**, **5 and up+plural**
- When faced with numeral-number mismatches,
 - Controls immediately reject them as ungrammatical across the board (Xiang et al. to appear)
 - Heritage speakers show sensitivity to number mismatches with **1** and **2-4**,
but no such sensitivity to mismatches with **5 and up**
(Kravtchenko et al. in prep.)

WHAT ABOUT OTHER INFLECTIONAL CATEGORIES?

- Russian verbs: aspect, mood, tense
- No tense errors (Polinsky 2008a)
 - Future forms are problematic but it is not clear if they are tense proper

RUSSIAN ASPECTUAL ERRORS: COMPREHENSION

- Significant error rate, up to chance in complex environments (Polinsky 2008b)



Cloze test, correct continuations in percentages (N=14)

RUSSIAN TENSE, MOOD, AND ASPECT ERRORS: PRODUCTION

- **Mood:** errors in omission or overmarking of the subjunctive (about 16%); imperative errors
- Significant number of **aspectual** errors (about 20% intermediate speakers, over 35% in low-proficiency speakers)

(Polinsky 2008a, Naiditch 2008, Gupol 2009, Laleko 2010)

HERITAGE KOREAN

(agglutinative, accusative)

- Case: Nominative, accusative; special topic marker (cf. the Japanese *wa*); other “case” forms are likely to be nouns with postpositions
- Verbal categories: tense, modality, polarity (declarative, interrogative, imperative), honorification

HERITAGE KOREAN

(agglutinative, accusative)

- Production only (Bae et al. in prep.)
- Case errors: about 28%
 - Mostly replacement; use of the topic marker instead of NOM
 - Omission under 5%
- Tense errors: under 2%
- Polarity: no errors in the declarative, 5.6% errors in the interrogative form; reported imperative errors (Choi 2003)

HERITAGE HUNGARIAN

(agglutinative, accusative)

- Observations on production (Fenyvesi 2000, de Groot 2005, Bolonyai 2007)
- Significant attrition of nominal morphology
 - omission of case affixes and possessive suffix
 - overextension of definite forms
- No tense errors on verbs
- Verb agreement morphology vulnerable but still more robust than case marking
 - object agreement shows more errors than subject agreement (Bolonyai 2007)

CIRCASSIAN



CIRCASSIAN

(polysynthetic, ergative)

- two cases (ABS and ERG), both marked

ABS: noun-*r* (lə-r 'dog')

ERG: noun-*m* (lə-m 'dog')

the ergative form is also licensed by postpositions

- very complex verb forms

agreement with subject, object, and multiple
applied objects licensed by applicative heads (all
prefixed)

CIRCASSIAN POLYSYNTHESIS

wəq'ədejzɣešež'efateq'əm

wə-q'ə-d-ej-z-ye-še-ž'e-f-a-te-q'əm

----pre-root-----

2SG.OBJ-DIR-LOC-3SG.OBJ-1SG.SUBJ-CAUS-lead-
COMPL-POTENTIAL-PAST-PPF-NEG

'I could not make him bring you back here with him.'

HERITAGE CIRCASSIAN

- Heritage speakers in Moscow, Maykop (south of Russia), Turkey, and New Jersey
- Preliminary data: oral production, four subjects only (three subjects from NJ):
 - Personal story
 - Description of a silent video clip

HERITAGE CIRCASSIAN: DP ERRORS

ERG in place of ABS	ABS in place of ERG	ERG omitted	ABS omitted
28/115 (24%)	0	0	3/115 (2%)

N=199 DPs; case is not overtly marked on 1 and 2 pronouns, names, or kinship terms

The errors are unidirectional: ERG wins over, possibly as a frequency effect (but see also Hindi)

High error rate, 26.9%, cf. with 8.8% verb errors

HERITAGE CIRCASSIAN: VERB ERRORS

586 forms transcribed; 52 errors (8.8%)

- Embedded instead of matrix negation
- Omission of interrogative form (cf. Korean)
- Over-marking of the causative
- Agreement errors (use of overt marking instead of null marking)

HERITAGE CAYUGA

(polysynthetic, accusative)

- Cayuga, Iroquoian, spoken in Ontario, with a heritage community in Oklahoma (Mithun 1989)
- Incipient “obsolescence” of nominal forms (no case)
- Excellent retention of verbal forms
“most striking about the Oklahoma speakers is... their nearly complete retention of an amazingly complex morphological system... under such limited opportunities to use it.” (Mithun 1989: 257)

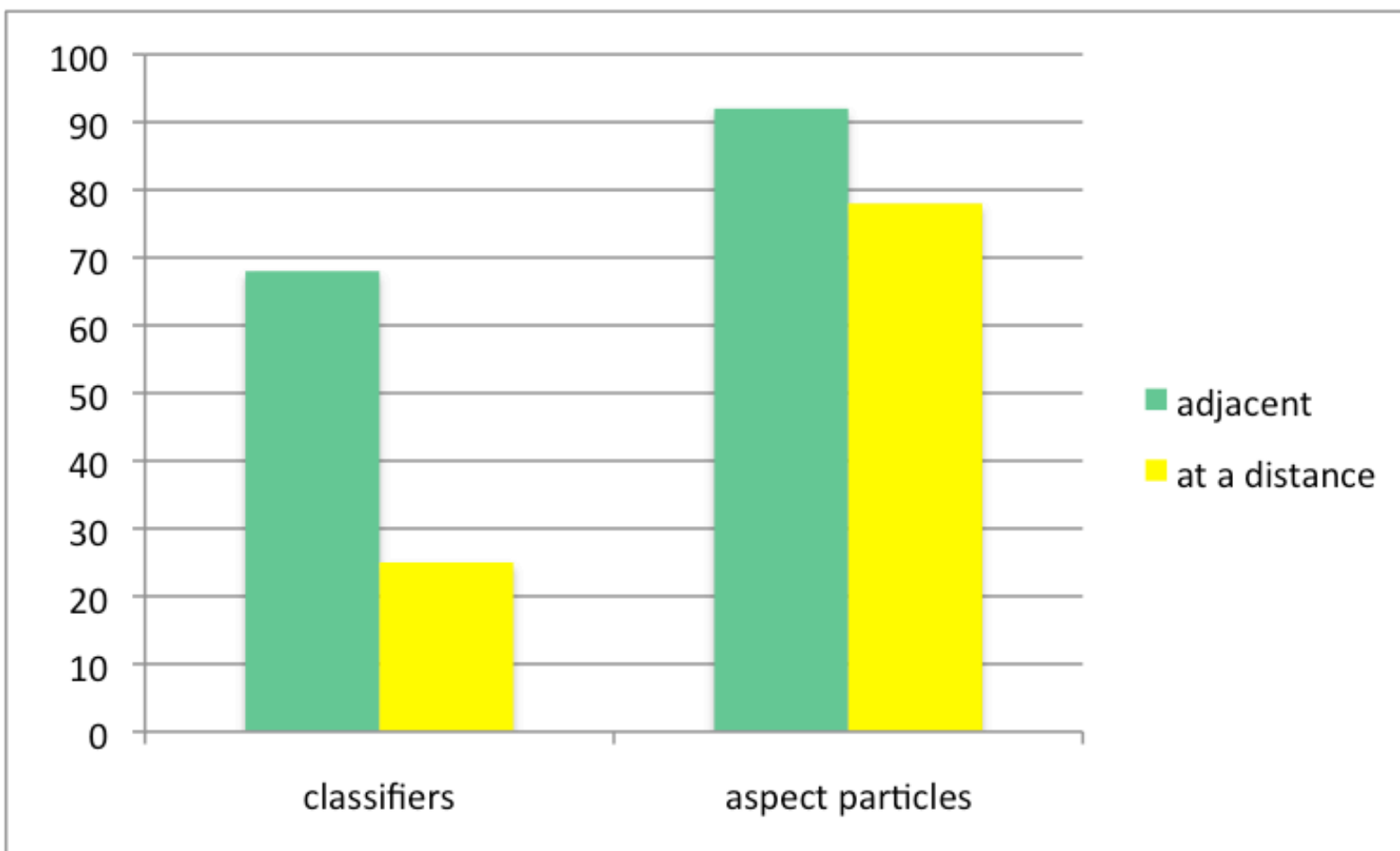
MANDARIN CHINESE

(isolating, accusative)

- Comprehension
- Nominal categories: classifiers and *ba* construction
- Verbal categories: Aspect particle, serialization

MANDARIN ASPECTUAL PARTICLES

Adult HS, % correct



INTERIM SUMMARY

- In comparison to native speakers, heritage speakers make errors on nouns more than on verbs in production and comprehension tasks.
- Verbs: overgeneralization errors
- Nouns: omission errors and some replacement errors
- The asymmetry seems to be independent of argument alignment
 - *Nominative-accusative languages*: Russian, Korean, Hungarian, Mandarin
 - *Ergative languages*: Hindi, Circassian

INTERIM SUMMARY

- Lexical categories:
nouns are more affected than verbs
- Vulnerable nominal categories:
case, gender > number
- Vulnerable verbal categories:
agreement/aspect/mood > tense

**WHAT CAN ACCOUNT FOR THE
NOUN-VERB ASYMMETRY IN HL?**

IN SEARCH OF AN EXPLANATION

- Pro-drop? Nouns have lower type frequency, hence less input
 BUT: Russian is not pro-drop
- Morphological design of a language?

MORPHOLOGICAL TYPES

HLs examined here:

- Inflectional (Russian, Hindi)
- Agglutinative (Korean, Hungarian
 - Polysynthetic (Circassian, Cayuga)
- Isolating (Mandarin Chinese)
- The asymmetry does not seem to depend on the morphological type of the language

INTERFERENCE FROM ENGLISH?

- English has virtually no case marking (aside from pronouns) but its verbs have some marking
- However, heritage versions of Hungarian, Russian, and Circassian have been in contact with other languages

IN SEARCH OF AN EXPLANATION: I

Overttness of marking: the verbal domain has fewer unmarked forms than the nominal domain, which may affect the resulting heritage system

IF SO THEN MORE QUESTIONS ARISE

- Why do nouns in general have more unmarked forms than verbs?
- What explains clear directionality in the patterns:
 - Hindi: ERG in place of ACC/DAT (no frequency effect)
 - Circassian: ERG in place of ABS (could be a frequency effect)
 - Korean: Topic marker in place of NOM, DAT in place of ACC (no frequency effect here)

IN SEARCH OF AN EXPLANATION: II

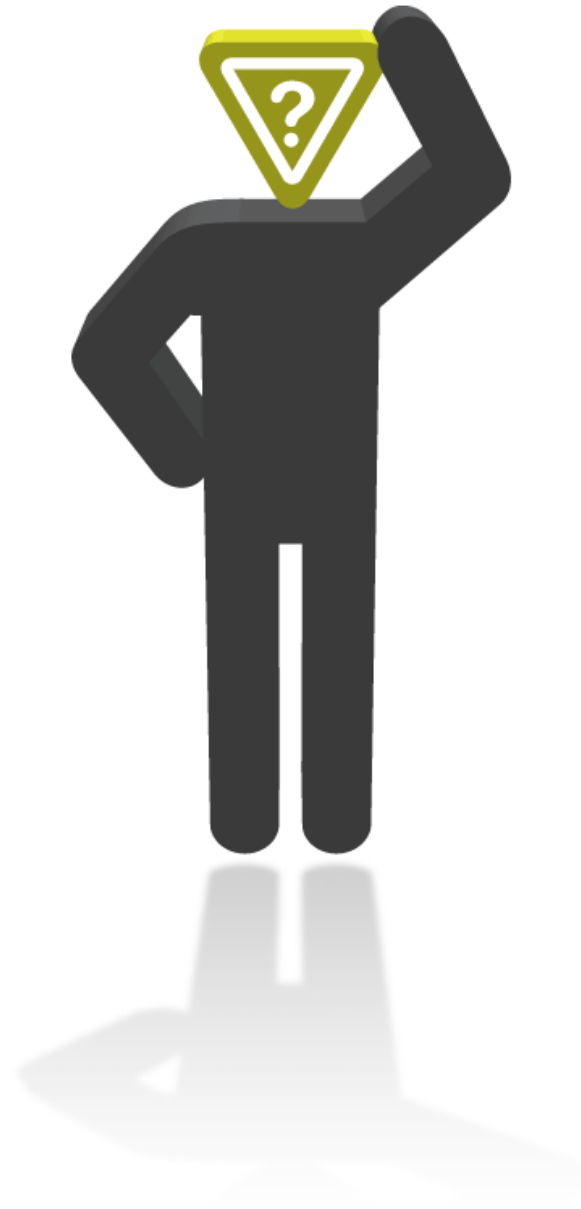
- Representational differences between verbs and nouns (Gentner 1981; Nagy & Gentner 1990, Baker 2008)
 - Difference between relational (predicative) concepts and referring expressions
 - Relational concepts (predicates) set up a frame providing links to other concepts (objects)
 - Losing a relational concept leads to the absence of its frame and links; the absence of an object concept is less “costly”

IN SEARCH OF AN EXPLANATION: II

- Nouns are easier to replace: deictics, circumlocutions, possibly gestures
- Most languages have pronouns, very few languages have pro-verbs, and those are typically restricted

FROM INTUITION TO IMPLEMENTATION...

**Conceptual representation
may be mapped more
directly into heritage
grammar**



THEORETICAL IMPLICATIONS

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- Universality of noun-verb distinction
- Dissociation of Case and agreement licensing
- New evidence for structure-based models of processing

NOUN-VERB DISTINCTIONS

- Conceptual operations:
 - Labeling (referring)--nouns
 - Property attribution—verbs

NOUN-VERB DISTINCTIONS

- Conceptual operations:
 - Labeling (referring)--nouns
 - Property attribution--verbs
- Do these conceptual properties have a universal linguistic representation?
 - UG: yes
 - Functional-typological approaches: no, there are languages without noun-verb distinction (Tongan, Salish, Wakashan)

NOUN—VERB DISTINCTIONS

- These distinctions may not be readily apparent or morphologically visible
- HL data suggest that the distinction is fundamental to language design: under attrition, in the absence of more elaborated structures, the distinction is still preserved

CASE AND AGREEMENT

- Are Case and agreement licensed by the same heads/in the same way?
- Yes, a functional head F can assign Case to DP only if it agrees with that DP (e.g., Chomsky 1995, 2000)
- No, Case is assigned by C (or v), and the Case feature is simply inherited by T; agreement can be licensed by C or directly by T

EMPIRICAL EVIDENCE

- Empirical evidence seems to favor the dissociation of Case and agreement:
 - Germanic: C directly assigns Nominative (van Kemenade, Aafke Hulk, Holmberg & Platzack)
 - Arabic: complementizer *?inna/?anna* licenses Case on the embedded subject (Benmamoun 2000)
 - Zulu: C directly assigns Nominative under raising (Zeller 2006)

EMPIRICAL EVIDENCE FROM HL

- Case is much more damaged than agreement, which favors the dissociation model
- Agreement is reasonably intact, which suggests that it is a property inherently associated with T and not inherited from C (cf. Zeller 2006 for a similar view)

THEORETICAL IMPLICATIONS

C and v, rather than T, are responsible for case assignment (T inherits this property from C)

Case is among the most vulnerable morphological properties of HLs

This is consistent with greater fragility of C and v as compared to T

THEORETICAL IMPLICATIONS

Agreement is inherently associated with T, and it is more resilient than case

However, agreement undergoes attrition as compared to tense—why?

HLS WE HAVE EXAMINED

Language	Morphological type	Argument alignment	Pro-drop?	Dominant language
Hindi	Inflectional	Ergative	YES	English
Russian	Inflectional	Accusative	NO	English, Hebrew
Korean	Agglutinative	Accusative	YES	English
Hungarian	Agglutinative	Accusative	YES	English, German, French
Circassian	Polysynthetic	Ergative	YES	English, Turkish, Russian
Cayuga	Polysynthetic	Accusative	YES	English
Chinese	Isolating	Accusative	YES	English

IN CONCLUSION

- HLs show a systematic difference in the maintenance/attrition of nominal vs. verbal morphology:
 - nouns are more vulnerable than verbs
- Within nominal categories, case, definiteness, and gender seem to be more vulnerable than number
- Interpretability of features? Unlikely since case is uninterpretable but definiteness and possibly gender are interpretable

IN CONCLUSION

- HLs show a systematic difference in the maintenance/attrition of nominal vs. verbal morphology:
 - nouns are more vulnerable than verbs
- HLs show a systematic difference in the maintenance/attrition of functional categories
 - features associated with v and C are more vulnerable than features associated with T
- The differences appear to be independent of the morphological type, alignment, or null subject parameter

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