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

<table>
<thead>
<tr>
<th>Language</th>
<th>Morphological type</th>
<th>Argument alignment</th>
<th>Pro-drop?</th>
</tr>
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<tbody>
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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
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
- 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

- Default agreement
- Subject agreement
- Object agreement

Hindi native speakers
Hindi Heritage speakers
Hindi Oral Picture Description Task (% errors with ko)

- Animate objects: Hindi native speakers (1.3), Hindi heritage speakers (10.3)
- Inanimate objects: Hindi native speakers (23.6), Hindi heritage speakers (37.6)
- Dative subjects: Hindi native speakers (2.1), Hindi heritage speakers (22.1)
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

<table>
<thead>
<tr>
<th></th>
<th>Heritage</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Case</td>
<td>37</td>
<td>2.5</td>
</tr>
</tbody>
</table>

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)

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 prefixal)
CIRCASSIAN POLYSYNTHESIS

wəqʼədejyešežʼefateqʼəm
wə-qʼə-d-ej-z-yə-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

<table>
<thead>
<tr>
<th>ERG in place of ABS</th>
<th>ABS in place of ERG</th>
<th>ERG omitted</th>
<th>ABS omitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/115 (24%)</td>
<td>0</td>
<td>0</td>
<td>3/115 (2%)</td>
</tr>
</tbody>
</table>

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

![Bar chart showing percentages of correct responses for classifiers and aspect particles.](image)
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 ist 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

Overtness 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
THEORETICAL IMPLICATIONS

• 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 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**

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<td>Accusative</td>
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<td>Ergative</td>
<td>YES</td>
<td>English, Turkish, Russian</td>
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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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