The role of input in the acquisition of Differential Object Marking by Turkish heritage language children in the United States

Aylin Coskun Kunduz
aylinc2@illinois.edu

Silvina Montrul
montrul@illinois.edu

RUEG Conference

Attrition vs. Innovation

February 22, 2021

I ILLINOIS

Contents

- Heritage speakers: An Overview
- Innovations in heritage language grammars
- Differential Object Marking (DOM)
- The role of input in heritage language acquisition
- The Study
  - DOM in Turkish
  - Research questions & Predictions
  - Methodology
  - Results
- Discussion & Conclusion

Heritage speakers: An overview

Age 5

Heritage language
dominant

Majority language
(English) dominant

(Carreira & Kağan, 2011)
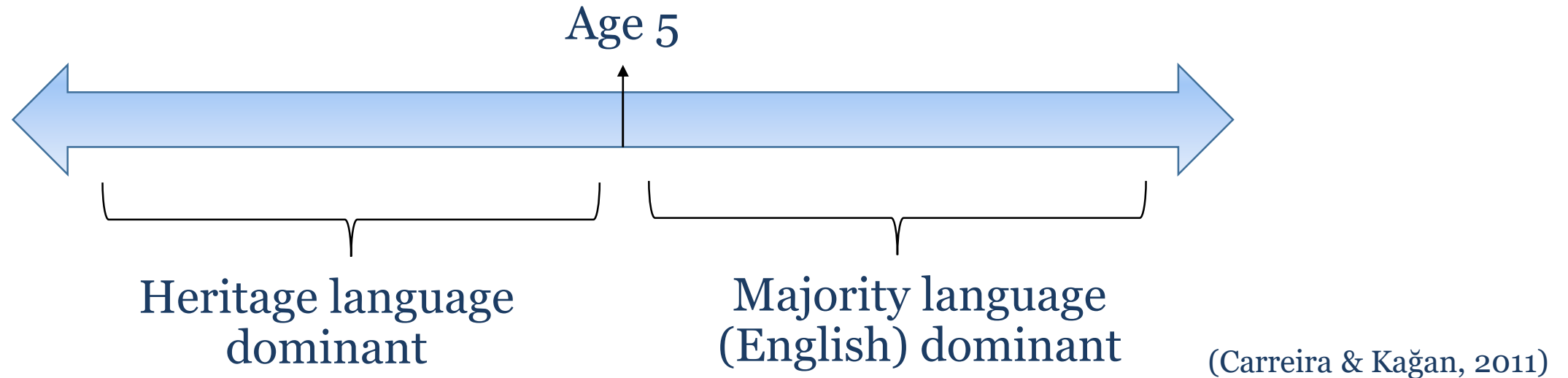
- Heritage speakers (HSs) show variability in certain domains of their heritage grammar as the majority language becomes more dominant.

(Montrul, 2016; Polinsky, 2018)

ILLINOIS

Innovations in heritage language grammars

Inflectional morphology is the area where adult HSs have been found to be the most innovative.

(Polinksy, 2018)

➢ Omission of required morphology in obligatory contexts

➢ Levelling of morphological paradigms

➢ Overregularization of regular and default forms to irregular forms

Differential Object Marking (DOM) has long been observed to be particularly challenging for adult HSs.

(Mardale & Montrul, 2020)

ILLINOIS

Differential Object Marking (DOM)

Languages with overt case-marking of direct objects differ in what types of objects they mark and how the overt marking is realized.

(Bossong, 1991; Comrie, 1975)

DOM is regulated by semantic and pragmatic factors and requires integration of syntax, semantics, morphology, discourse and related interfaces.

(Montrul 2011; Sorace 2011)

Heritage language acquisition of DOM

DOM has been found to be vulnerable to optionality, with high rates of omission in required contexts, in adult HSs of Spanish, Hindi, Romanian and Korean.

(Chung, 2020; Montrul & Bateman, 2020)

Montrul and Bowles (2009) found that even advanced-level adult HSs of Spanish showed significant rates of omission of DOM in an oral task and extensive variability in a grammaticality judgement task (p. 372).

(1) El hombre vió **a** la chica.   ➡   *El hombre vió la chica.

    'The man saw the girl.'

The role of input in heritage language acquisition

HSs are exposed to **less input** or **altered input** in their heritage language (HL) as compared to a typical monolingual child, which may result in

➤ transfer from the dominant language,

➤ delayed acquisition,

➤ divergent attainment or

➤ attrition in later years.

The study

Goal:

What is the root of the variability that adult HSs show in the domain of inflectional morphology, more specifically DOM?

1. Longitudinal studies

2. Cross-sectional studies with children

In this study, we compared child HSs of Turkish (second-generation immigrants) to first-generation Turkish immigrants in the U.S., who were in most cases their own parents.

Predictions

Examining children and comparing them to their parents:

1. Divergent attainment due to altered input if
    Heritage children (second-generation immigrants) < monolingual children
    First-generation immigrants < monolingual adults

2. Divergent attainment due to insufficient input if
    Heritage children (second-generation immigrants) < monolingual children
    First-generation immigrants = monolingual adults

3. Delayed acquisition if
    Younger heritage children < older heritage children ≤ monolingual children
    First-generation immigrants ≤ monolingual adults

4. Attrition if
    Heritage children = monolingual children
    First-generation immigrants = monolingual adults
    Children < adults

ILLINOIS

DOM in Turkish

DOs in Turkish are specific if marked with the accusative marker *–(y)I*, non-specific otherwise.

(2) a. Ali armut yedi.

    Ali pear   eat.PAST.3SG

    'Ali ate a pear/pears.'

  b. Ali armut-u yedi.

    Ali pear-ACC eat.PAST.3SG

    'Ali ate the pear.'

(Enç, 1991)

ILLINOIS

DOM in Turkish

➤ Underlying word order in Turkish is SOV.

➤ Accusative-marked objects can scramble, while unmarked objects must be adjacent to the verb.

(3) a. *Armut Ali yedi.

      pear   Ali eat.PAST.3SG

      'Ali ate a pear/pears.'

  b. Armut-u Ali yedi.

      pear-ACC Ali eat.PAST.3SG

      'Ali ate the pear.'

(Erguvanlı, 1984)

Previous findings on DOM in Turkish

Turkish-speaking children show knowledge of syntactic properties of the accusative marker and productively use it before age 3.

<div align="right">(Ketrez, 2006; Ketrez & Aksu-Koç, 2009)</div>

However, the full acquisition of DOM and the morpho-pragmatic properties of the accusative marker do not occur until the age of 6.

<div align="right">(Ketrez, 2015)</div>

Previous findings on DOM in Turkish

➢ Research on the acquisition of Turkish DOM in immigrant context is scarce.

➢ **Şahin (2015)** compared the use of the accusative marker *–(y)I* by monolingual Turkish speakers, first-generation Turkish immigrants and adult Turkish HSs in the Netherlands.

➢ Results showed that of all the groups, adult HSs performed the most variably overall with inflectional morphology, and particularly with the accusative marker *–(y)I*.

Motivations for this study

➢ Research on heritage language acquisition of Turkish DOM is limited.

➢ Adult HSs of Turkish and other languages have been found to show variability with respect to DOM, but the root of this variability is yet to be explored.

In this study, we compared child heritage speakers of Turkish to their input providers (their parents) who are first-generation immigrants using both comprehension and production measures.

(Daskalaki, Blom & Paradis, 2020)

ILLINOIS

Research questions and predictions

1. Do first- and second-generation Turkish immigrants (child HSs) residing in the U.S. show variability in their comprehension and production of Turkish DOM ($-(y)I$)?

2. Do child HSs perform differently from first-generation immigrants in their comprehension and production of Turkish DOM?

Divergent attainment		Delayed acquisition
Due to altered input	Due to insufficient input	
Child HSs < Monolingual children Adult immigrants < Monolingual adults	Child HSs < Monolingual children Adult immigrants = Monolingual adults	Younger child HSs < older HSs ≤ monolingual children First-generation immigrants ≤ monolingual adults

ILLINOIS

Research questions and predictions

3. Does the performance of each group change across the tasks?
   i. All groups are expected to perform similarly in both tasks.
   ii. Child HSs may show better production than comprehension since they were exposed to the language orally.

4. Does age and experience with the language play a role in the children's morphological accuracy?

If morphological acquisition is affected by length of exposure to input in children, then younger children in both monolingual and heritage groups will show higher error rates than older children.

Participants

		U.S . immigrants		Turkey		
		Adults	**School-age children**	**Adults**	**School-age children**	**Younger children**
		N = 20	N = 20	N = 20	N = 20	N = 20
Age	*Mean*	41.8	10.4	39.6	10.7	4.6
	Range	33—50	7—14	33—50	7—14	3—6
AoA Turkish		birth	birth	birth	birth	birth
AoA English	*Mean*	13.3	3.2	___	___	___
	Range	13—30	1—6			
LoR US (years)	*Mean*	15	9.9	___	___	___
	Range	8—26	7—14			

Participants

- Adult immigrants were significantly more fluent than child HSs (p = .01).
- No significant differences were found between
  - child HSs and younger monolingual children (48 words on average) and
  - adult immigrants and monolingual adults (79 words on average)

	U.S. immigrants			
	Adults (N =20)		School-age children (N =20)	
	Mean	*Range*	*Mean*	*Range*
Overall self-/parental rating in English	3.9	3—5	4.9	4—5
Overall self-parental rating in Turkish	4.7	3—5	3.2	1—5
Word-per-minute (Fluency) in Turkish	78	49—116	47	41—136

Tasks

1. **Story retelling (production) task**

- Following Montrul (2004), production data was elicited by using a series of pictures from the story, *Little Red Riding Hood,* which were presented in a PowerPoint presentation.

- This task has proven to be successful in previous studies to elicit DOM.

(Montrul & Bowles, 2009; Montrul & Sánchez-Walker, 2013)

ILLINOIS

Tasks

2. Picture selection (comprehension) task

(4) Definite/specific
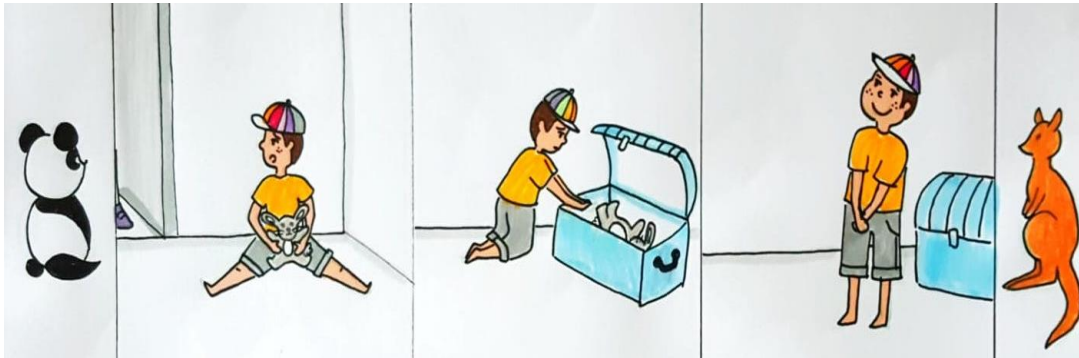**Çocuk oyuncağ-ı sakla-dı**.
boy   toy-ACC   hide-PAST.3SG
'The boy hid the toy.'

(5) Indefinite/non-specific
Adam kuş sat-tı.
man   bird sell-PAST.3SG
'The man sold birds.'

Tasks

2. Picture selection (comprehension) task

- 35 stimuli = 16 target items testing DOM + 16 control structures (quantifiers + numerals) + 3 practice items

- Two conditions: definite/specific vs. indefinite/non-specific

- Each condition was further divided into 4 based on the animacy of the DO (animate vs. inanimate) and the sentence word order (SOV vs. OVS).

Data coding

- In the picture selection task, all responses were coded as 'correct' if the judgement was correct, and 'incorrect' otherwise.

- In the story-telling task, participants' answers were coded as 'incorrect' if the specific DO was left unmarked (omission) or marked with another case marker (substitution), and 'correct' otherwise.

(6) Omission error

O   da   tilki arı-yor.
She and fox   look.for-PRES.3SG
'And she is looking for a fox/foxes.'

(7) Substitution error

Sonra kırmızı kız-a   bekl-iyor
Then   red   girl-DAT wait.for-PRES.3SG
'Then she is waiting for a girl.'

Results

1. Story retelling task

- No significant differences between adult immigrants (AI), monolingual adults (MA), monolingual school-age children (MC) and younger children (MMinor)

- Heritage children (HC) < AI (p = .008)
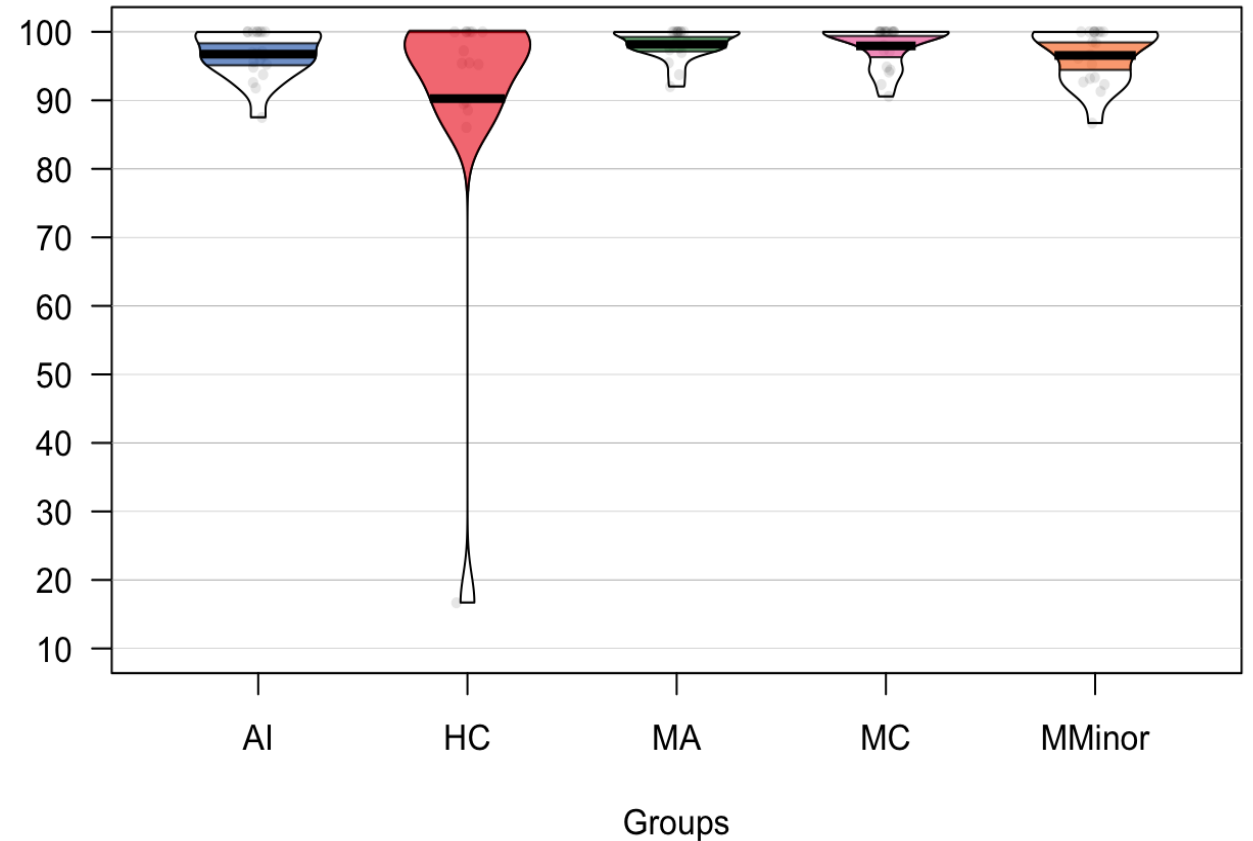
- HC < MC (p < .001)

Figure 1. Mean accuracy percentages by speaker type and age in the story retelling task (AI: Adult immigrant, HC: Heritage child, MA: Monolingual adult, MC: Monolingual child, MMinor: Monolingual minor)

ILLINOIS

Results

2. Picture selection task

- HC < AI (p = .043)

- HC < MC (p = .007)

- MMinor < MA & MC (p < .001)

- No significant differences between
  - HC and MMinor
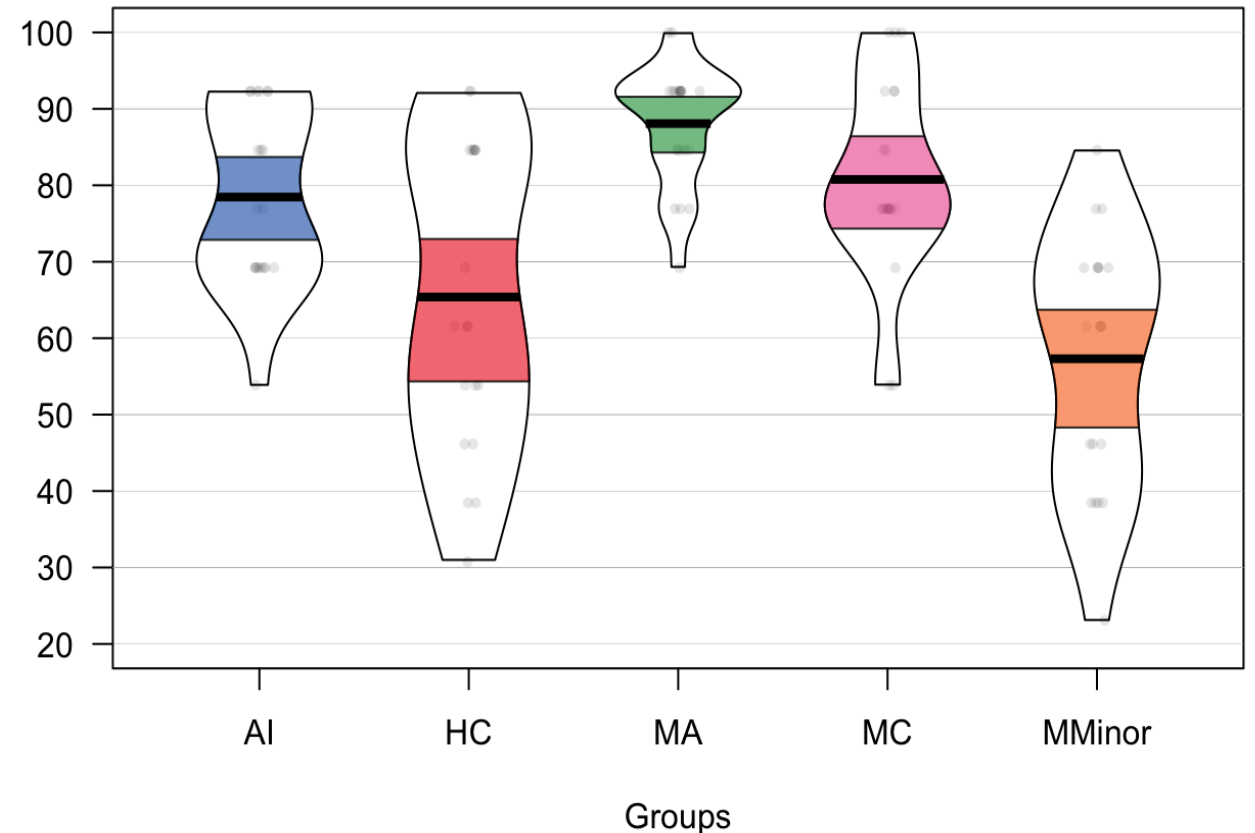 - AI and MA
  - MC and MA

Figure 2. Mean accuracy percentages by speaker type and age in the picture selection task (AI: Adult immigrant, HC: Heritage child, MA: Monolingual adult, MC: Monolingual child, MMinor: Monolingual minor)

ILLINOIS

Interim summary

- 3-6-year-old Turkish-speaking children showed task effects: they showed higher accuracy on DOM in the story retelling task as compared to the picture selection task
  - Cognitive demands of the picture selection task → Accuracy rates increased with age
- Child HSs were significantly the least accurate group in both tasks, performing less accurately than 3-6-year-olds in the production task.
- Adult immigrants performed at ceiling like Turkish adults in Turkey in both tasks.

Interim summary

Divergent attainment		Delayed acquisition
Due to altered input X	Due to insufficient input	
Child HSs < Monolingual children Adult immigrants < Monolingual adults	Child HSs < Monolingual children Adult immigrants = Monolingual adults	Younger child HSs < older HSs ≤ monolingual children First-generation immigrants ≤ monolingual adults

The variability observed in the Turkish heritage language children in the two tasks is not likely to be due to altered input, not a qualitative issue.

Results

3. Comparison of child HSs and their parents

- Parents performed significantly better than their children in both tasks ($p < .05$).

- The performance of each child-parent pair did not necessarily follow the same pattern.
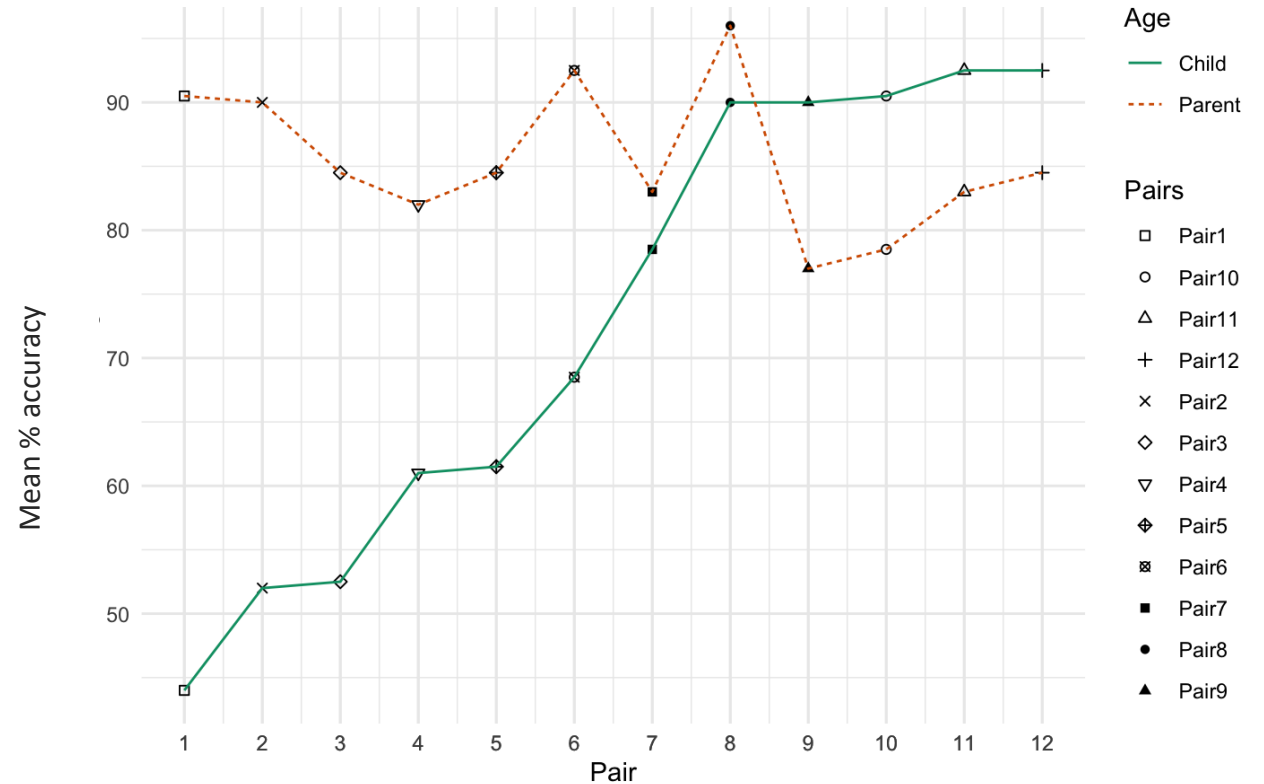

Figure 3. Individual variation in accuracy in both tasks by child heritage speakers and their parents

Results

4. Individual variation in child HSs

The degree of language development in the Turkish heritage children depends on input and use of the language in childhood.

	Low-Accuracy (N = 6)			High-Accuracy (N = 14)		
	M	Range	SD	M	Range	SD
Age	9	7-13	2.2	11	7-14	2.8
Overall accuracy in tasks	25.1%	19-35	6.6	84.2%	61-96	10.6
Frequency of Turkish use	2.7	1-5	1.6	4.1	2-5	0.9
Percentage of Turkish spoken by father	50	0-100	46	69	50-100	24
Percentage of Turkish spoken by mother	40	0-100	46	73	50-100	25
TV & Reading in Turkish	1/6	___	___	9/14	___	___

Discussion

- Child HSs showed variability and divergent attainment in both comprehension and production of the accusative *–(y)I*, suggesting a representational problem, at the level of their abstract grammatical knowledge, and not just a task effect.

- Adult immigrants do not exhibit changes in their use and comprehension of Turkish DOM due to L1 attrition.

- Child HSs and their parents did not necessarily follow the same pattern in their performance in both tasks.

Divergent attainment/delayed acquisition due to altered input   **X**

Discussion

- Like younger monolingual children (ages 3-6), child HSs (ages 7-14) showed age effects: the younger heritage children were less accurate than the older heritage children.

- The younger child HSs had less L1 Turkish exposure and they used Turkish less frequently compared to the older ones.

- The developmental rate of child HSs was more comparable to younger monolingual children than to their age-matched monolingual counterparts.

The heritage language children tested seem to show delayed acquisition of DOM.

Will they ever catch up to the adult model, or will they exhibit incomplete acquisition of DOM in early adulthood?

Conclusion

Once acquired in late childhood, Turkish DOM may not be vulnerable to L1 attrition in adulthood, and the observed delayed acquisition in the child heritage group can be attributed to the reduced input that the heritage speakers received from their parents in early years.

THANK YOU!

ILLINOIS

The role of input in the acquisition of Differential Object Marking by Turkish heritage language children in the United States

Aylin Coskun Kunduz
aylinc2@illinois.edu

Silvina Montrul
montrul@illinois.edu

RUEG Conference

Attrition vs. Innovation

February 22, 2021

ILLINOIS