UNIVERSITÄT DES SAARLANDES

Individual Differences in Child English Second Language Acquisition

Comparing Child-Internal and Child-External Factors

Paradis, Johanne 2011
Linguistic Aproaches to Bilinguism
1 . 3 : 213–237
University of Alberta

Presentation by Samuel Isaías Cano Jiménez

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Monolingual child first language learners and adult second language learners

Child second language (L2) learners

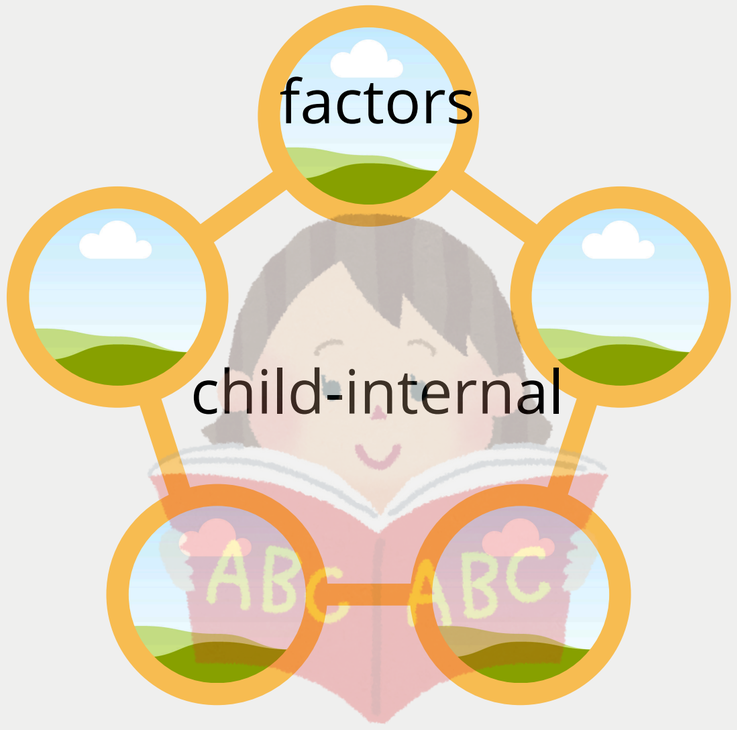
Awareness of individual difference factors could be useful for educators and clinicians for interpreting evaluations of academic achievement and speech-language

(Dörnyei & Skehan, 2003; Hoff, 2006)

The present study

investigated how

child-external



predict English L2 children's acquisition outcomes for

and

Vocabulary size

accuracy with verb morphology.

READS

Paradis 2010

Internal factors

Language aptitude

verbal memory skills and
analytic reasoning or
pattern recognition skills

$\neq \approx$ IQ

(Dörnyei & Skehan, 2003; Hoff, 2006)

transfer of morphosyntactic features from L1 -> L2 (articles, SOV,clitic)

- "He speaks"
- "They no speak"
- “I it see”

(Blom, Paradis & Sorenson Duncan (2010;)

- "three cat" instead of "three cats"
- "many book" instead of "many books"

cognitive maturity = age

Vocabulary

older 5;0 faster is than younger

(Genesee & Hamayan, 1980; Harley & Hart, 1997; Masoura & S. Gathercole, 1999; Ranta, 2002

External factors

higher maternal education associated with more advanced language development in bilingual and L2 children

socio-economic status, maternal education levels, for vocabulary adq monolinguals (Hoff, 2006).

(Blom et al., 2010; Sheele consider separat

Quantity and Quality

exposure length

native-speaker input

vs

Paradis 2009
French-English
(lexic)

Golberg 2008
not a significant
determinant of children's
acquisition rates

Reading Eng book, friends, Jia 2003

home language

Usage-Based Theory

Interaction Between Input and Cognitive Mechanisms:

Language learning results input properties, cognitive mechanisms, and social context.

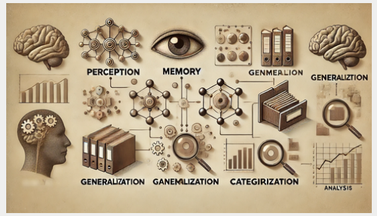
Innate language knowledge is not considered

Input

how much is rich and native-like

Bybee 2001
token frequency, focusing on the quantity and quality of L2

Cognitive Mechanisms



Perceptual-attentional

focus on familiar linguistic structures in L2 based on L1 knowledge.

Existing L1 knowledge facilitate L2 acquisition through conceptual sharing and transfer.

Study

Objective

How child-internal factors (language aptitude, age, L1 typology) and child-external factors (length and quality of English exposure) predict English L2 acquisition outcomes.

Participants

- 169 children aged 4;10 to 7;0
- From newcomer families in Canada
- Varied exposure to English (3 to 62 months)




Data Collection

Parents answered questions about:

- Education, English fluency
- Child’s age and age at onset of English exposure
- Languages used at home
- Child's experiences with English (media, socializing)

Internal Data Collection

Alberta Language Environment Questionnaire (ALEQ)

Child's Age (AGE months: 58-84): 69.72 average = 5;9 years

Age at Onset of English Exposure (AOE 10-76): Mean 50

- Defined as "consistent and sustained" exposure, typically starting preschool.

Comprehensive Test of Phonological Processing (CTOPP):

- Phonological memory sub-tests included digit span and non-word repetition.
- Scores were combined into a phonological memory composite score.

Columbia Mental Maturity Scales (CMMS):

- Measured non-verbal IQ and analytic abilities through pattern recognition tasks.

L1 TNS (0.08-0.88): 0.62

External Data Collection

Alberta Language Environment Questionnaire (ALEQ)

- Months of exposure to English (MOE: 3-62): Mean 19.56

- Language use at home (LANGHOME: 0-4): Mean 0.36
- Number of older siblings (OLDSIB: 0-4) Mean 0.79

- Maternal Education (MOTED: 0-22) Mean: 14 indicating higher education levels
  - Measured in years and highest diploma/degree awarded

- Mother's English Fluency (MOTFLU: 0-4): Mean 2.31, indicating moderate fluency.

- Richness of English Environment (ENGRICH): 0.62
  - Measured through the child's experiences with English media, activities, and friends.

Tests Administered

Peabody Picture Vocabulary Test (PPVT):
- Measured receptive vocabulary size.
- Children pointed to images that matched spoken words.

Test of Early Grammatical Impairment (TEGI):
- Elicited children’s use of various verb morphemes (e.g., third person singular -s, regular and irregular past tense, BE and DO auxiliaries).
- An overall proportion correct score was calculated.

RESULTS

Regression Analyses for Vocabulary

43% model

Chronological Age (AGE): Older children performed better.

- Phonological Memory (CTOPP): Better phonological memory predicted higher vocabulary scores.
- Non-Verbal IQ (NOT relying on language)/Analytic Reasoning (CMMS): Higher non-verbal IQ was associated with better vocabulary outcomes.
- Months of Exposure (MOE): Longer exposure to English resulted in higher vocabulary scores.
- Richness of the English Environment (ENGRICH): A richer English environment correlated with better vocabulary.

RESULTS

52% Model

Regression Analyses for Verb Morphology

- Chronological Age (AGE): Older children performed better.
- Phonological Memory (CTOPP): Better phonological memory predicted higher accuracy in verb morphology.
- Non-Verbal IQ/Analytic Reasoning (CMMS): Higher non-verbal IQ was associated with better verb morphology outcomes.
- L1 Tense/Agreement Marking (L1_TNS): Children whose first language marked tense and agreement did better in English verb morphology.
- Months of Exposure (MOE): Longer exposure to English improved verb morphology.
- Richness of the English Environment (ENGRICH): A richer English environment correlated with better verb morphology scores.

RESULTS

Further Exploration of Language Use at Home

- Impact on L2 Acquisition:

Language use at home had a marginal impact on L2 acquisition and was not included in the best-fitting models for vocabulary or verb morphology.

- Output to the others vs. Input to the child:

Children's use of English (output) at home had a stronger association with better L2 outcomes than the language used by others towards the child (input).

- Implication: Encouraging the use of the first language (L1) at home might be beneficial for maintaining L1 while still supporting L2 development

RESULTS

Further Exploration of Maternal Education

- Impact on L2 Acquisition from the Maternal education was not a significant predictor in the regression models but showed some influence in between-group analyses.

- Analysis by Education Level: Children whose mothers had post-secondary education had higher verb morphology scores and marginally higher vocabulary scores compared to those whose mothers had secondary-level education.

- Implication: The level of maternal education has a complex relationship with children's language outcomes, potentially influenced by interactions with other factors

Discussion

Child-internal Factors

- - **Phonological Short-term Memory**: This was the strongest predictor for both vocabulary and verb morphology. **Children with better phonological memory performed better in language acquisition.**
- - **Non-verbal IQ**/Analytic Reasoning: This was **also a significant predictor** for both linguistic outcomes. Children with higher analytic reasoning skills, as measured by non-verbal IQ, had better language outcomes.
- - **L1 Transfer**: Children whose first language **(L1) marked tense** and agreement on verbs **performed better** in English **verb morphology**.
- - **Chronological Age**: **Older** children showed **more advanced** language skills in both vocabulary and verb morphology, indicating that **cognitive and linguistic maturity aids** in faster language acquisition

Discussion

Child-external Factors

- - Length of Exposure to English (**MOE**): This was a **significant** predictor for both **vocabulary and verb morphology**. More extended exposure to English led to better language acquisition outcomes.
- - Richness of the English Environment (**ENGRICH**): This was a significant quality-oriented predictor. A **richer English environment** correlated with **better vocabulary and verb morphology**.
- - **Language Use at Home**: This factor played a **marginal role** and was not included in the best-fitting models. Children's use of English at home was more closely associated with better language outcomes than the language used towards them by others.
- - Maternal Education: it had some influence, particularly on verb morphology, but was not as strong as other factors in the regression models

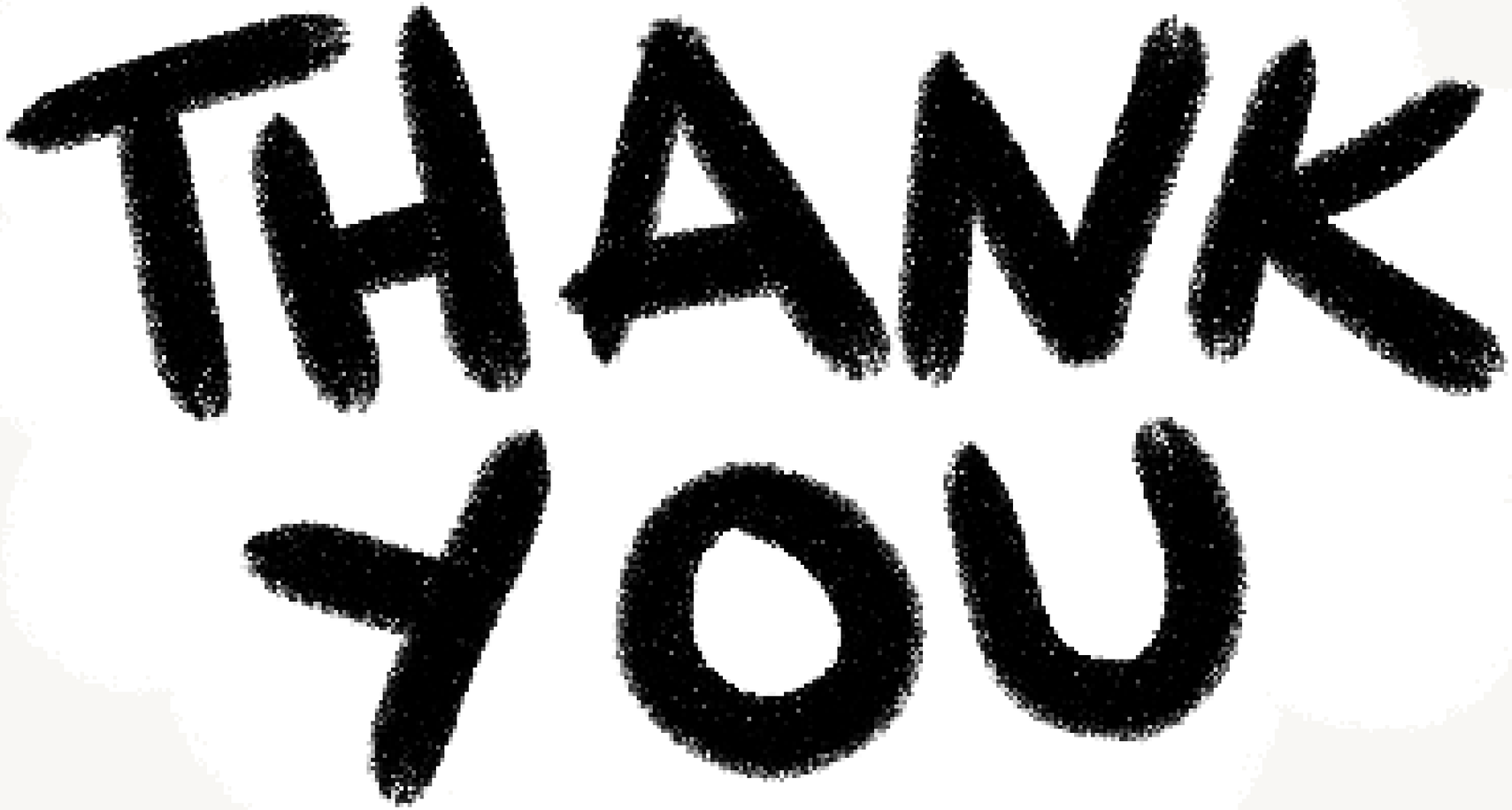
Discussion

Usage-based Theory of Language Acquisition

- - Input Properties: This theory emphasizes the importance of input properties (quantity and quality) in language acquisition. Factors like **length of exposure and richness of the English environment supported this theory** as they were significant predictors.
- - Domain-general Learning Mechanisms: The **results suggest that both external factors** (input properties) and **internal factors** (cognitive mechanisms, L1 knowledge) **are important in L2 acquisition**.
- - Implication: The study indicates that while input **properties are crucial**, **internal cognitive mechanisms** and **existing L1 knowledge should not be underestimated** in their impact on L2 acquisition

Notes

1. A few children in this group were exposed to English before three years of age, and thus, would technically be considered simultaneous bilinguals by other researchers (Paradis et al., 2010). But were included them in this study regardless because they share many other characteristics with the other children in the study, and do not share characteristics with many simultaneous bilinguals such as, Canadian-born parents and a one-parent-one language style of language use in the home. Furthermore, differentiating between simultaneous and very early sequential bilingualism was not a goal of this study.
2. This questionnaire was developed by the author and her graduate students, The ALEQ is available at www.chesl.ualberta.ca .
3. Re-running the model with the child-output variable did not result in this variable being selected in the stepwise regression procedures.
4. Re-doing the models with maternal education as a dichotomous variable did not result in this factor emerging as significant.


THANK
YOU