Models of L3 Acquisition in Grammatical Gender Learning: Initial Transfer and Ongoing Development

Megan M. Brown

Third Langauge (L3 Acquisition

Theories and Model in L3

Grammatical Gende

Experiment 1: Cross-Sectional

Grammaticality Judgement Task

Experiment 1: Cross-Sectional Grammaticality

Procedu

Key Finding

Experiment 2

"Beginners"

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# Models of L3 Acquisition in Grammatical Gender Learning: Initial Transfer and Ongoing Development

Megan M. Brown

Boston University

Linguistic Theory and L2 and L3 Acquisition in Children and Adults

MIT Linguistics Department, April 3<sup>rd</sup>, 2022



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Experiment 1: Cross-Sectional Grammaticality Judgement Task

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## Outline

- 1 Third Langauge (L3) Acquisition
- 2 Experiment 1: Cross-Sectional Grammaticality Judgement Task
- 3 Experiment 2: L3 "Beginners" vs. L3 Initial State
- 4 Experiment 3: Longitudinal Gender Development
- **5** Summary

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Experiment :

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Procedure

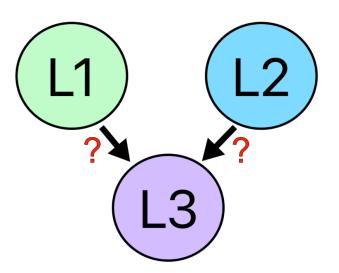
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## CLI in L3 Acquisition



### Theories and Models

in L3

# Theories and Models of L3 CLI and Transfer

Third Langauge (L3) Acquisition

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# Theories and Models of L3 CLI and Transfer

- Cumulative Enhancement (Flynn et al., 2004)
- L2 Status Factor (Bardel & Falk, 2007)
- L1 Transfer (Hermas, 2010)
- Typological Primacy (Rothman, 2010)
- Language of Community (Fallah et al, 2016)
- Linguistic Proximity (Westergaard et al., 2017)
- Scalpel Model (Slabakova, 2017)
- Top-Down Cognitive Control (Green, 2017)
- Full Transfer Potential (Westergaard, 2021)
- Grammatical Mapping (Fernández-Berkes & Flynn, in press)
- Cumulative Input Threshold Hypothesis (Cabrelli & Iverson, in press)

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# Theories and Models of L3 CLI and Transfer

## L3 models differ in terms of:

Initial state/stages transfer vs. longer-term development

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# Theories and Models of L3 CLI and Transfer

## L3 models differ in terms of:

- Initial state/stages transfer vs. longer-term development
- Wholesale vs piecemeal initial transfer

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# Theories and Models of L3 CLI and Transfer

## L3 models differ in terms of:

- Initial state/stages transfer vs. longer-term development
- Wholesale vs piecemeal initial transfer
- Role of additional factors
  - Typological similarity
  - Age/order of acquisition
  - 12/13 profisionsy
  - L2/L3 proficiency
  - Language status
  - Cognitive factors

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# Theories and Models of L3 CLI and Transfer

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- Initial state/stages transfer vs. longer-term development
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## Models of L3 Transfer

Wholesale Transfer Models Piecemeal Transfer Models

L1 Transfer

Cumulative Enhancement

L2 Status Factor

Linguistic Proximity

Typological Primacy

Scalpel Model

Language of Community

Full Transfer Potential

Grammatical Mapping

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## L3 Models

Key Takeaways

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## L3 Models

Key Takeaways

 Models differ in terms of the manner of transfer they propose.

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## L3 Models

Key Takeaways

- Models differ in terms of the manner of transfer they propose.
- Models differ in terms of the point in L3 acquisition they are referring to.

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## L3 Models

Key Takeaways

- Models differ in terms of the manner of transfer they propose.
- Models differ in terms of the point in L3 acquisition they are referring to.
- Certain L3 models may not be directly comparable to each other in an experiemntal context.

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## Research Questions

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## Research Questions

 Does previous grammatical gender knowledge from the L1 and/or L2 influence L3 grammatical gender acquisition?

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Research Questions

 Does previous grammatical gender knowledge from the L1 and/or L2 influence L3 grammatical gender acquisition?

 Does the role/influence of previous grammatical gender knowledge change throughout the L3 acquisition process?

Third Langauge (L3 Acquisition

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## Research Questions

- Does previous grammatical gender knowledge from the L1 and/or L2 influence L3 grammatical gender acquisition?
- Does the role/influence of previous grammatical gender knowledge change throughout the L3 acquisition process?
- How might age/order of acquisition and language similarity promote or inhibit the transfer of previous grammatical gender knowledge to the L3?

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## Grammatical Gender

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## Grammatical Gender

## German:

Der Mann	<b>Die</b> Frau	Das Mädchen
The man	The woman	The girl
Masculine	Feminine	Neuter

## Romance:

Spanish	EI chico	<b>La</b> chica
French	Le garçon	La fille
Italian	II ragazzo	<b>La</b> ragazza
Portuguese	O menino	<b>A</b> garota
English	The boy	The girl
Euglisu	Masculine	Feminine

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## Grammatical Gender in L2

• L1 gender can transfer to L2 (i.e. Franceschina, 2005)

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## Grammatical Gender in L2

- L1 gender can transfer to L2 (i.e. Franceschina, 2005)
  - Even between more typologically distant languages (i.e. Sabourin, 2001)

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## Grammatical Gender in L2

- L1 gender can transfer to L2 (i.e. Franceschina, 2005)
  - Even between more typologically distant languages (i.e. Sabourin, 2001)
- L2ers without gender in their L1 are able to develop a gender system (White et al., 2004; Sagarra and Herschensohn, 2010)

Grammatical Gender

## Grammatical Gender in 12

- L1 gender can transfer to L2 (i.e. Franceschina, 2005)
  - Even between more typologically distant languages (i.e. Sabourin, 2001)
- L2ers without gender in their L1 are able to develop a gender system (White et al., 2004; Sagarra and Herschensohn, 2010)
- Key differences between offline vs. online experimental grammatical gender tasks (Długosz, 2021)

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## Grammatical Gender in L2

- L1 gender can transfer to L2 (i.e. Franceschina, 2005)
  - Even between more typologically distant languages (i.e. Sabourin, 2001)
- L2ers without gender in their L1 are able to develop a gender system (White et al., 2004; Sagarra and Herschensohn, 2010)
- Key differences between offline vs. online experimental grammatical gender tasks (Długosz, 2021)
- How do L1 vs L2 gender systems influence L3 gender development?
  - At the onset of L3 acquisition
  - At later points in the development process

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- Online survey and grammaticality judgement task via Qualtrics
- Sequential Spanish/English bilinguals
- "Beginner" German learners
  - <1 year (two semesters) L3 German instruction</p>

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Experiment :

L3
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- Online survey and grammaticality judgement task via Qualtrics
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- Intermediate or higher L2 proficiency

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- Online survey and grammaticality judgement task via Qualtrics
- Sequential Spanish/English bilinguals
- "Beginner" German learners
  - ullet <1 year (two semesters) L3 German instruction
- Intermediate or higher L2 proficiency

Language Background	Number of Participants
L1 English L2 Spanish L3 German	11
L1 Spanish L2 English L3 German	10
L1 English L2 German	11

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# German Grammaticality Judgement Task

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# German Grammaticality Judgement Task

## Gender Mismatch

\*<mark>Das</mark> Baum ist groß The<sub>[N]</sub> tree<sub>[M]</sub> is tall

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# German Grammaticality Judgement Task

## Gender Mismatch

\*<mark>Das</mark> Baum ist groß The<sub>[N]</sub> tree<sub>[M]</sub> is tall

Words reflecting biological gender were not included

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# German Grammaticality Judgement Task

Gender Mismatch

\*<mark>Das</mark> Baum ist groß The<sub>[N]</sub> tree<sub>[M]</sub> is tall

Words reflecting biological gender were not included

Error questions were balanced in terms of:

Third Langauge (L3) Acquisition

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# German Grammaticality Judgement Task

## Gender Mismatch

\*Das Baum ist groß
The<sub>[N]</sub> tree<sub>[M]</sub> is tall

Words reflecting biological gender were not included

Error questions were balanced in terms of:

German Gender

Error Direction (M  $\rightarrow$  F, M  $\rightarrow$  N ect.)

Spanish Gender

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# Scoring

## Gender Assignment vs. Gender Concord

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## Scoring

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# Scoring

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Tür (Door<sub>F</sub>)

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Tür (Door<sub>F</sub>)

Der<sub>M</sub> Die<sub>F</sub>

 $\mathsf{Das}_\mathsf{N}$ 

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## Scoring

Gender Assignment vs. Gender Concord

Grammatical Gender Task

Tür (Door<sub>F</sub>)

Der<sub>M</sub> Die<sub>F</sub> Das<sub>N</sub>

Grammaticality judgment tasks were graded based on participants' perceived gender of individual lexical items.

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# Experiment 1: Scoring

Gender Assignment vs. Gender Concord

Grammatical Gender Task

Tür (Door<sub>F</sub>)

Der<sub>M</sub> Die<sub>F</sub>

 $\mathsf{Das}_\mathsf{N}$ 

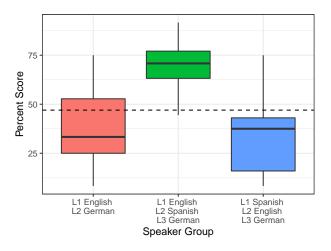
Grammaticality judgment tasks were graded based on participants' perceived gender of individual lexical items.

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Results

## Experiment 1 Results

Brown (2020)



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# Experiment 1: Key Findings

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# Experiment 1: Key Findings

 Beginner L3 German learners with L2 Spanish were better at identifying gender errors in L3 German.

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## Experiment 1: Key Findings

- Beginner L3 German learners with L2 Spanish were better at identifying gender errors in L3 German.
  - L2 Status Factor Model
  - Scalpel Model

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# Experiment 1: Key Findings

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## Experiment 1: Key Findings

### BUT...

 No interference was found from nouns with different Spanish genders.

## Key Findings

Experiment 1: Key Findings

### BUT...

- No interference was found from nouns with different Spanish genders.
- These participants were beginners but not initial state learners.

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## Experiment 1: Key Findings

### BUT...

- No interference was found from nouns with different Spanish genders.
- These participants were beginners but not initial state learners.
- Are these results from initial transfer or some later developmental difference?

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## Experiment 2

True initial state L3 learners

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- True initial state L3 learners
- Artificial Germanic Language

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'Beginners"

- True initial state L3 learners
- Artificial Germanic Language
  - Avoids intertwinement of German DP features
    - (i.e. gender, number, case, and definiteness)

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Results

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L3 "Beginners"

- True initial state L3 learners
- Artificial Germanic Language
  - Avoids intertwinement of German DP features
    - (i.e. gender, number, case, and definiteness)
  - Precedent in the L2 acquisition literature
    - Brooks et al. (1993), Siegelman & Arnon (2015)
       Wonnacott, Brown & Nation (2017), Culbertson,
       Gagliardi & Smith (2017)

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# Artificial Language

- 9 nouns
  - 3 masculine, 3 feminine, 3 neuter

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## Artificial Language

- 9 nouns
  - 3 masculine, 3 feminine, 3 neuter
- 4 determiners
  - 1 masculine, 1 feminine, 1 neuter, 1 plural
- 5 adjectives
  - suffixes: 1 masculine, 1 feminine, 1 neuter, 1 plural

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## Artificial Language

- 9 nouns
  - 3 masculine, 3 feminine, 3 neuter
- 4 determiners
  - 1 masculine, 1 feminine, 1 neuter, 1 plural
- 5 adjectives
  - suffixes: 1 masculine, 1 feminine, 1 neuter, 1 plural
- 1 carrier phrase

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## Artificial Language

Erblicken ern-e rot-e Tür. Behold  $\mathsf{Det}_{[\mathsf{Fem/Sing}]}$   $\mathsf{red}_{[\mathsf{Fem/Sing}]}$  door $[\mathsf{Fem/Sing}]$  'Behold a red door'

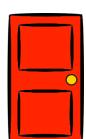
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Experiment 1: Cross-Sectional Grammaticality

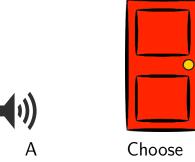
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Key Findings

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Experiment 1: Cross-Sectional Grammaticality Judgement

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Experiment 1: Cross-Sectional Grammaticality

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Experiment 2

"Beginners' vs. L3 Initia

Participants

Language Background	Number of Participants
L1 English L2 Spanish	7
L1 Spanish L2 English	4
L1 English L2 Mandarin	4

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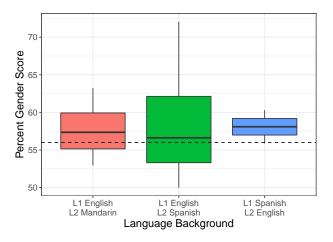
Experiment 2

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## Experiment 2 Results

Grammatical Gender



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Cross-Sectional

Grammaticality Judgemen

Experiment 1: Cross-Sectional Grammaticality

Judgement Ta

Results

Kev Finding

Experiment

"Beginners' vs. L3 Initia State

## Results

- No group differences for grammatical gender
  - (TPM, Piecemeal Transfer/Developmental Models)

Third Langauge (L3 Acquisition

Theories and Model in L3 Grammatical Gende

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Grammaticality Judgement Task

Experiment 1: Cross-Sectional Grammaticality Judgement Tasl

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Experiment :

"Beginners" vs. L3 Initia

vs. L3 Initia State

## Results

- No group differences for grammatical gender
  - (TPM, Piecemeal Transfer/Developmental Models)
- Overall poor performance across all groups on grammatical questions
  - (Piecemeal Transfer Models)

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Third Langauge (L3

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Grammatical Gend

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Experiment 1: Cross-Sectional Grammaticality Judgement Task

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Key Findings

Experiment 2

"Beginners" vs. L3 Initial

• Experiment 1:

- Experiment 1:
  - **Beginner** L3 German learners (< 1 year)
  - L2 Spanish advantage in L3 German gender

Third Langauge (L3 Acquisition

In L3

Experiment 1
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Experiment 1: Cross-Sectional Grammaticality

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Procedures

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Experiment

"Beginners" vs. L3 Initia

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- Experiment 1:
  - **Beginner** L3 German learners (< 1 year)
  - L2 Spanish advantage in L3 German gender
- Experiment 2:
  - Initial State L3 German learners
  - No L2 Spanish advantage in L3 German gender or number

Third Langauge (L3 Acquisition

in L3

Grammatical Gend

Experiment 1: Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task

Procedure

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Experiment

L3
"Beginners"

State

- Experiment 1:
  - **Beginner** L3 German learners (< 1 year)
  - L2 Spanish advantage in L3 German gender
- Experiment 2:
  - Initial State L3 German learners
  - No L2 Spanish advantage in L3 German gender or number
- Perhaps an L3 developmental difference?

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Experiment 2

"Beginners" vs. L3 Initial State

# Experiment 3

Longitudinal L3 Development

Third Langauge (L Acquisition

Theories and Model in L3

Experiment

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Grammaticality Judgemen

Experiment 1: Cross-Sectional Grammaticality Judgement Task

Procedure

Key Findings

Experiment 2

"Beginners' vs. L3 Initia State

## Experiment 3

Longitudinal L3 Development

 Dissertation project aiming to tease apart the findings of Experiment 1.

Third Langauge (L3 Acquisition

Theories and Models in L3

Experiment 1

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ity Judgemer Task

Cross-Sectional Grammaticality Judgement Tasl

Procedure

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Experiment :

vs. L3 Initial State

## Experiment 3

### Longitudinal L3 Development

- Dissertation project aiming to tease apart the findings of Experiment 1.
- Longitudinal design participants complete the experiment within the first two weeks of beginning their first German course, and again at the end of their semester.

Third Langauge (L3 Acquisition

Theories and Models in L3

Experiment 1 Cross-Sectional Grammatical

Grammaticality Judgemen<sup>:</sup> Task

Experiment 1: Cross-Sectional Grammaticality Judgement Tasl

Results

Key Finding

Experiment 2

"Beginners" vs. L3 Initia State

# Experiment 3

### Longitudinal L3 Development

- Dissertation project aiming to tease apart the findings of Experiment 1.
- Longitudinal design participants complete the experiment within the first two weeks of beginning their first German course, and again at the end of their semester.
- Examination of gender in both listening and reading contexts.

Third Langauge (L3 Acquisition

in L3

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Experiment 1: Cross-Sectional Grammaticality

Judgement 7 Procedures

Results

Key Findings

Experiment 2

"Beginners' vs. L3 Initia

# Procuedure Summary

A German listening task involving virtual eye-tracking

Third Langauge (L3 Acquisition

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Experiment 1: Cross-Sectional Grammaticality

Procedure

Experiment 2

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- A German listening task involving virtual eye-tracking
- A German self-paced reading task

Langauge (L3 Acquisition

in L3 Grammatical Gender

Experiment 1: Cross-Sectional Grammatical-

Grammaticality Judgement Task

Experiment 1: Cross-Sectional Grammaticality

Procedure

Key Finding

Experiment :

vs. L3 Initi

- A German listening task involving virtual eye-tracking
- A German self-paced reading task
- A German gender assignment task (only at second meeting)

Langauge (L3 Acquisition

in L3 Grammatical Gender

Experiment 1 Cross-Sectional Grammatical

Grammaticality Judgement Task

Experiment 1: Cross-Sectional Grammaticality Judgement Tasi

Procedur Results

Key Finding

Experiment :

State

- A German listening task involving virtual eye-tracking
- A German self-paced reading task
- A German gender assignment task (only at second meeting)
- Multilingual LEAP-Q

Langauge (L3
Acquisition

in L3 Grammatical Gender

Experiment 1 Cross-Sectional Grammatical-

ity Judgemen Task

Cross-Sectional Grammaticality Judgement Task

Results

Key Findings

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State

- A German listening task involving virtual eye-tracking
- A German self-paced reading task
- A German gender assignment task (only at second meeting)
- Multilingual LEAP-Q
- Proficiency and gender knowledge assessments in other known languages

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# Experiment 3 Participants

- "Ab initio" German learners
  - True beginners with no previous German exposure

Third Langauge (L3) Acquisition

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Experiment 1: Cross-Sectional Grammaticality

Procedures

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Experiment L3

"Beginners" vs. I 3 Initia

# Experiment 3 Participants

- "Ab initio" German learners
  - True beginners with no previous German exposure
- Intermediate or higher L2 proficiency
  - Spanish, French, Italian, & Portuguese

Third Langauge (L3 Acquisition

Grammatical Gende

Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality

Procedure

Key Finding

Experiment

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# Experiment 3 Participants

- "Ab initio" German learners
  - True beginners with no previous German exposure
- Intermediate or higher L2 proficiency
  - Spanish, French, Italian, & Portuguese

Language Background	Number of Participants
Bilingual	14
Trilingual	30

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Experiment 1: Cross-Sectional Grammaticality Judgement Task

Results

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Experiment 2

"Beginners vs. L3 Initi

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# Listening Task

Trained on 12 nouns in the target language (German)

Third Langauge (L3) Acquisition

Theories and Models

Grammatical Gene

Experiment

Cross-Sectional Grammatical-

ity Judgeme

Experiment 1: Cross-Sectional Grammaticality

Judgement Ta

Results

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Experiment 2

"Beginners' vs. L3 Initia

State

- Trained on 12 nouns in the target language (German)
  - Nouns were balanced between target language genders and translation equivalent genders

Third Langauge (L3) Acquisition

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Experiment 1:

Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality

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Results

Key Finding

Experiment 2

vs. L3 Initi State

- Trained on 12 nouns in the target language (German)
  - Nouns were balanced between target language genders and translation equivalent genders
- Nouns reflecting biological gender were excluded

Third Langauge (L3 Acquisition

Theories and Model in L3

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Cross-Sectional Grammaticality Judgemen

Grammaticality Judgemen Task

Cross-Sectional Grammaticality Judgement Tas

Procedur Results

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Experiment 2

"Beginners" vs. L3 Initia

- Trained on 12 nouns in the target language (German)
  - Nouns were balanced between target language genders and translation equivalent genders
- Nouns reflecting biological gender were excluded
- Also trained on two adjectives, "Large" and "Small"

Third Langauge (L3 Acquisition

in L3 Grammatical Gender

Experiment 1 Cross-Sectional Grammatical-

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Experiment 1:
Cross-Sectional

Grammaticality
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Experiment

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"Beginners"
vs. L3 Initial

- Trained on 12 nouns in the target language (German)
  - Nouns were balanced between target language genders and translation equivalent genders
- Nouns reflecting biological gender were excluded
- Also trained on two adjectives, "Large" and "Small"
- Virtual eye tracking serves as the key measure

Third Langauge (L3 Acquisition

in L3 Grammatical Gender

Experiment 1 Cross-Sectional Grammaticality Judgemen

Experiment 1: Cross-Sectional Grammaticality

Procedures

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Experiment

L3
"Beginners"
vs. L3 Initial

- Trained on 12 nouns in the target language (German)
  - Nouns were balanced between target language genders and translation equivalent genders
- Nouns reflecting biological gender were excluded
- Also trained on two adjectives, "Large" and "Small"
- Virtual eye tracking serves as the key measure
- Two key experiemntal conditions, Gender Match and Gender Error

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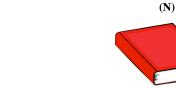
Listening Task Gender Match











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Third Langauge (L3 Acquisition

Theories and Mode in L3

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Experiment 1: Cross-Sectional Grammaticality

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# Listening Task Gender Match





(F) "Hier ist der große Stift richtig" (M) (Here, the(M) big pen (M) is correct)









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### Listening Task Gender Match















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# Listening Task

Gender Mismatch













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Experiment 1: Cross-Sectional Grammaticality

Grammaticality Judgement Tas

Results

Kev Finding

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# Listening Task

Gender Mismatch





(F) "Hier ist das große Stift richtig" (M) (Here, the(N) big pen (M) is correct)









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# Listening Task

Gender Mismatch











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Theories and Mode in L3

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Cross-Sectional Grammaticality Judgement Task

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# Listening Task

 Are learners at each data collection point able to process gender cues in real time?

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Experiment 1 Cross-Sectional Grammaticality Judgemen

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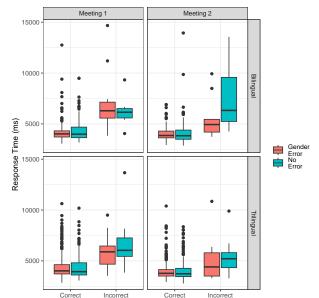
Experiment 2

"Beginners" vs. L3 Initial

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# Listening Task

Results: Accuracy and Response Time



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Experiment 1: Cross-Sectional Grammaticality

Procedures

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Experiment 2

"Beginners"
vs. L3 Initial

# Listening Task

Results: Accuracy and Response Time

Langauge (L3 Acquisition Theories and Mode in L3

Experiment 1: Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task

Procedure Results

Key Finding

Experiment 2

vs. L3 Initial State

# Listening Task

Results: Accuracy and Response Time

 The trilingual participants showed faster and more accurate responses in the second meeting, but further statistical testing showed no evidence of sensitivity to gender errors based on accuracy or response time.

Langauge (L3 Acquisition Theories and Mode

in L3 Grammatical Gender

Experiment 1: Cross-Sectional Grammatical-

Grammaticality Judgement Task

Cross-Sectional Grammaticality Judgement Tasl

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# Listening Task

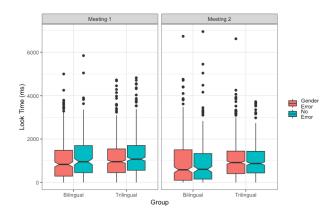
Results: Accuracy and Response Time

- The trilingual participants showed faster and more accurate responses in the second meeting, but further statistical testing showed no evidence of sensitivity to gender errors based on accuracy or response time.
- Further statistical analysis of the trilingual responses found no significant effect of Romance proficiency or Romance AoA on this data.

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# Listening Task

Eye-Tracking Results: Correct Image



Third Langauge (L3 Acquisition

in L3

Cross-Sectional

Grammaticality Judgemen

Experiment 1: Cross-Sectional Grammaticality

Judgement Ta

Results

Key Findings

Experiment 2

vs. L3 Initial State

## Listening Task

Eye-Tracking Results: Correct Image

 Note that this data only represents questions that the participants responded to correctly.

Third Langauge (L3 Acquisition

in L3
Grammatical Gender

Experiment Cross-Sectional Grammatica

Grammaticality Judgement Task

Experiment 1: Cross-Sectional Grammaticality Judgement Tas

Results

Key Finding

Experiment 2 L3

State

# Listening Task

Eye-Tracking Results: Correct Image

- Note that this data only represents questions that the participants responded to correctly.
- Everyone (bilingual and trilingual) is deterred by gender errors, with longer look times at the correct answer when it includes a gender error, particularly in Meeting 2.

Third Langauge (L3) Acquisition

Theories and Models in L3 Grammatical Gender

Experiment 1 Cross-Sectional Grammaticality Judgemen

Experiment 1: Cross-Sectional Grammaticality

Procedures

Key Finding

Experiment :

"Beginners"

# Listening Task

Eye-Tracking Results: Correct Image

- Note that this data only represents questions that the participants responded to correctly.
- Everyone (bilingual and trilingual) is deterred by gender errors, with longer look times at the correct answer when it includes a gender error, particularly in Meeting 2.
- There is no evidence of a significant difference between the bilingual and trilingual participants in terms of time spend looking at the correct answer.

Third Langauge (L3 Acquisition

Theories and Mode in L3

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Experiment 1: Cross-Sectional Grammaticality

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Experiment 2

"Beginners" vs. L3 Initia

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# Listening Task

Eye-Tracking Results: Gender-Matching Distractor Image

 This data is currently still under analysis and there were technical difficulties with graphs as of this morning.

Third Langauge (L3 Acquisition

in L3 Grammatical Gende

Experiment 1
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Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality

Procedures

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Experiment :

L3 "Beginners" vs. L3 Initial

## Listening Task

Eye-Tracking Results: Gender-Matching Distractor Image

- This data is currently still under analysis and there were technical difficulties with graphs as of this morning.
- Everyone (bilingual and trilingual) is deterred by gender errors, with longer look times at the ALL other answer options when it includes a gender error, particularly in Meeting 2. There is no evidence that they are looking at nouns that do match the gender of the determiner though.

Listening Task

Eye-Tracking Results: Gender-Matching Distractor **Image** 

- This data is currently still under analysis and there were technical difficulties with graphs as of this morning.
- **Everyone** (bilingual and trilingual) is deterred by gender errors, with longer look times at the ALL other answer options when it includes a gender error, particularly in Meeting 2. There is no evidence that they are looking at nouns that do match the gender of the determiner though.
- I need to do further analysis on **percentage** look time, as the overall difference in response time between the two meetings may be influencing raw look times.

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Experiment 1:
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Experiment 2

"Beginners"

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# Reading Task

Self-paced reading task

Third Langauge (L3 Acquisition

Theories and Mode in L3

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Experiment 1: Cross-Sectional Grammaticality

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Experiment 2

"Beginners" vs. L3 Initia

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# Reading Task

- Self-paced reading task
- Same nouns as in the listening task

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Experiment 2

"Beginners"
vs. L3 Initial

# Reading Task



Third Langauge (L3

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Cross-Sectional Grammaticality

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Experiment 2

"Beginners" vs. L3 Initial

## Reading Task



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Cross-Sectional Grammaticality

Procedure

Results

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Experiment 2

"Beginners" vs. L3 Initial

# Reading Task



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# Reading Task



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# Reading Task



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Experiment 2

"Beginners" vs. L3 Initial

# Reading Task



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Experiment 1: Cross-Sectional Grammaticality

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"Beginners vs. L3 Initi

## Reading Task



(Hier ist die/der Tür gorß) (Here the(F/M) door is large)





Third Langauge (L3 Acquisition

in L3 Grammatical Gende

Experiment 1: Cross-Sectional Grammaticality Judgement

Task
Experiment 1:
Cross-Sectional

Cross-Sectional Grammaticality Judgement Tas

Results

Experiment 1

vs. L3 Initial State

## Reading Task

- Are learners at each time point able to process gender cues, and are they deterred by gener errors, when processing in real time?
- Are these results different between the reading and the listening task?

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Third Langauge (L3 Acquisition

Theories and Mod

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Experiment 1: Cross-Sectional Grammaticality

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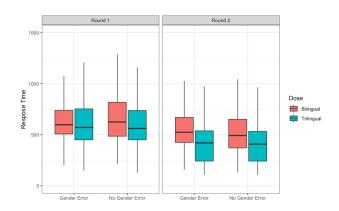
Results

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Experiment 1

vs. L3 Initi

# Reading Task Results



Third Langauge (L3 Acquisition

Theories and Mod

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Experiment 1: Cross-Sectional Grammaticality

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Results

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Experiment 2

"Beginners" vs. L3 Initia

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### Reading Task Results

 Analysis remains ongoing, but overall, trilinguals show faster processing of all sentences.

Third Langauge (L3 Acquisition

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Grammatical Gende

Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality

Judgement Ta

Results

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vs. L3 Initial State

### Reading Task Results

- Analysis remains ongoing, but overall, trilinguals show faster processing of all sentences.
- No evidence of sensitivity to German gender errors was found.

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# Discussion and Takeaways

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Results

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## Discussion and Takeaways

 While "beginner" learners might show evidence of CLI from L3 in their processing of written gender, this was not found in "ab initio" learners.

Langauge (L3
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Experiment 1: Cross-Sectional Grammaticality

Judgement Ta

Results

Experiment

"Beginners" vs. L3 Initial

## Discussion and Takeaways

- While "beginner" learners might show evidence of CLI from L3 in their processing of written gender, this was not found in "ab initio" learners.
- Grammatical gender acquisition in L3 is a complex process that maybe be influenced both positively and negatively by previous gender knowledge, particularly from the L2.

Langauge (L3 Acquisition Theories and Model in L3

Experiment 1 Cross-Sectional Grammatical

Grammaticality Judgement Task Experiment 1:

Cross-Sectional Grammaticality Judgement Task Procedures

Key Finding

Experiment :

"Beginners" vs. L3 Initial

## Discussion and Takeaways

- While "beginner" learners might show evidence of CLI from L3 in their processing of written gender, this was not found in "ab initio" learners.
- Grammatical gender acquisition in L3 is a complex process that maybe be influenced both positively and negatively by previous gender knowledge, particularly from the L2.
- Grammatical gender processing results differed between listening and speaking tasks

## Overall Takeaways

L3 acquisition, development, and maintenance is a complex process!

A variety of factors such as **native/non-native status**, **age of** acquisition, and language similarity can influence the degree of CLI that occurs

Additional research is needed at all levels of linguistic research, but particularly in post-initial state L3 development!

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Third Langauge (L3 Acquisition

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## Special Thanks











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Experiment 1: Cross-Sectional Grammaticality

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# Thank You!

These slides can be found at  $\protect\operatorname{https://www.meganmbrown.com}$ 

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Third Langauge (L3) Acquisition

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Experiment Cross-

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Experiment 1: Cross-Sectional Grammaticality Judgement Task

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Experiment 2

L3 "Beginners" vs. L3 Initial

# Questions?

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Experiment 1:
Cross-Sectional
Grammaticality

Grammaticality
Judgement Task
Procedures

Key Finding

Experiment 2

"Beginners"
vs. L3 Initia

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