Grammatical Gender Acquisition in a Trilingual Context: Initial Transfer and Ongoing Development

Megan M. Brown

Third Langauge (L3) Acquisitior

Theories and Models in L3 Grammatical

Experiment 1: Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

Key Findings

Grammatical Gender Acquisition in a Trilingual Context: Initial Transfer and Ongoing Development

Megan M. Brown

Boston University

L3 Reading Group February 15<sup>th</sup>, 2023



Grammatical

## Outline

#### Megan M. Brown

Third Langauge (L3)

Acquisition

Theories and Models in L3 Grammatical Gender

Experiment: Cross-Sectional Grammaticality

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures 1 Third Langauge (L3) Acquisition

2 Experiment 1: Cross-Sectional Grammaticality Judgement Task

3 Experiment 2: Longitudinal Gender Development

Gender
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Langauge (L3) Acquisition Theories and Models in L3

Models in L3 Grammatical Gender

Experiment
1: CrossSectional
Grammaticality
Judgement

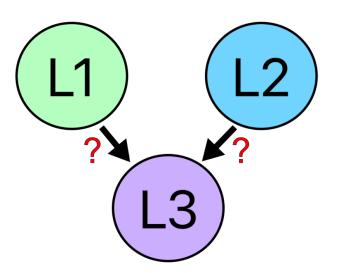
Experiment 1: Cross-Sectional Grammaticality Judgement Task

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Key Findings

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## CLI in L3 Acquisition



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Results Key Findings Theories and Models of L3 CLI and Transfer

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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:

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Experiment
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Judgement Task

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures 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
  - L2/L3 proficiency
  - Language status
  - Cognitive factors

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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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1: Cross-Sectional Grammaticality Judgement

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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?

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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

#### German:

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

#### Romance:

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

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#### Grammati Gender

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## Grammatical Gender in L2

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

Theories and

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Gender

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Key Findings

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

Langauge (L3) Acquisition Theories and Models in L3

Grammatical Gender

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- 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)

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- 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

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Key Findings

- 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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Key Findings

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

Langauge (L3) Acquisition Theories and Models in L3 Grammatical Gender

Experiment 1: Cross-Sectional Grammaticality Judgement

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Key Findings

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

Theories and Models in L3 Gender

Experiment 1: Cross-Sectional Judgement Task Procedures

Key Findings

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

\*Das Baum ist groß  $The_{[N]}$  tree $_{[M]}$  is tall

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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

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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:

Experiment 1: Cross-Sectional Grammaticality Judgement Task

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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

## Scoring

Gender Assignment vs. Gender Concord

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## Scoring

Gender Assignment vs. Gender Concord

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## Scoring

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Tür (Door<sub>F</sub>)

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Gender Assignment vs. Gender Concord

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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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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> Das<sub>N</sub>

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

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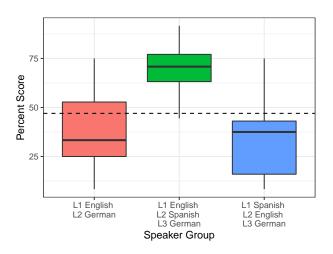
Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

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## Experiment 1 Results Brown (2020)



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#### Key Findings

### 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: Cross-Sectional Grammaticality Judgement Task Procedures

### 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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### Key Findings

## Experiment 1: Key Findings

BUT...

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#### Key Findings

### Experiment 1: Key Findings

### BUT...

 No interference was found from nouns with different Spanish genders.

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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.

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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

### Longitudinal L3 Development

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

Theories and Models in L3 Grammatical Gender

Experiment 1: Cross-Sectional Judgement Task Procedures

### Key Findings

### Experiment 2

### 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.

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### Experiment 2

### 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.

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### Procuedure Summary

A German listening task involving virtual eye-tracking

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Key Findings

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

Langauge (L3)

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

Key Findings

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

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- 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 Theories and Models in L3 Grammatical Gender

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures Results

- 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 assessment in other known languages

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### Experiment 2 Participants

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

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### Experiment 2 Participants

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

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### Experiment 2 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
L1 English L2 Romance L3 German	10
L1 Romance L2 English L3 German	6
L1 English L2 German	10

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Listening Task

Trained on 12 nouns in the target language (German)

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

Procedure

Key Findings

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

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

Key Findings

- 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

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

- 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"

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Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

- 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

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Key Findings

- 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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Experiment 1: Cross-Sectional Grammaticality Judgement Task

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### Listening Task Gender Match















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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





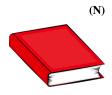












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### Listening Task Gender Mismatch

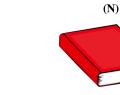












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### Listening Task Gender Mismatch





**(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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### Listening Task

 Are learners at each data collection point point able to process gender cues in real time? Gender
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Experiment 1: Cross-Sectional Grammaticality Judgement Task

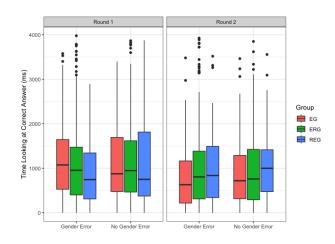
Procedures

Results

Key Findings

## Listening Task

Results: Noun Learning



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Theories and
Models in L3
Grammatical
Gender

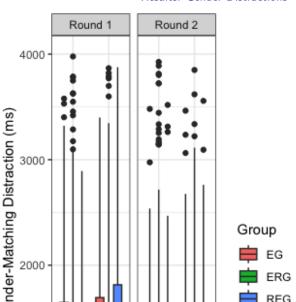
Experiment
1: CrossSectional
Grammaticality
Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures Results Key Findings

Rey I munigs

## Listening Task

Results: Gender Distractions



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Judgem

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Procedure

Results

Key Findings

Reading Task

Self-paced reading task

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### Reading Task

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

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Reading Task



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## Reading Task



Hier (Here)

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## Reading Task



ist

(is)

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## Reading Task



die/der (the, F/M)

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## Reading Task



Tüe door

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Reading Task



gros big

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Judger Task

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#### Evnorimont

## Reading Task



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





(L3)
Acquisition
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Models in L3

Theories and Models in L3 Grammatical Gender

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## 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?

Gender
Acquisition
in a
Trilingual
Context:
Initial
Transfer and
Ongoing

Grammatical

Development

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Acquisitio

Theories and Models in L3 Grammatical Gender

1: Cross-Sectional Grammaticality Judgement

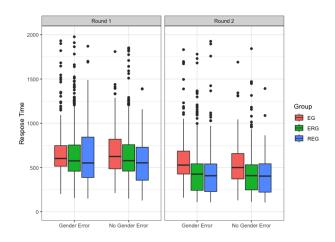
Experiment 1: Cross-Sectional Grammaticality Judgement Task

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## Reading Task Results



Theories and

Models in L3 Grammatical Gender

Experiment 1: Cross-Sectional Grammaticality Judgement Task

Procedures

Results Key Findings Discussion and Takeaways

Third Langauge (L3)

Acquisition

Theories and Models in L3 Grammatical

Experiment 1: Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

## 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) Acquisition Theories and Models in L3 Grammatical

Experimen
1: CrossSectional
Grammaticality
Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures

## 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 Models in L3 Grammatical

Experiment 1: Cross-Sectional Grammaticality Judgement

Experiment 1: Cross-Sectional Grammaticality Judgement Task Procedures Results

Key Findings

## 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

Theories and Models in L3 Grammatical Gender

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Procedures

Results Key Findings Next Steps and Future Questions

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## Next Steps and Future Questions

Continued analysis of dissertation data

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Key Findings

## Next Steps and Future Questions

- Continued analysis of dissertation data
- Examination of more diverse language triads

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Acquisition

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## Next Steps and Future Questions

- Continued analysis of dissertation data
- Examination of more diverse language triads
- Longer-term development examinations

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## Special Thanks











Grammatical

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Key Findings

## Thank You!

These slides can be found at https://www.meganmbrown.com

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# Questions?

Grammatical

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