Bilingual lexical access

The gender transfer – gender default paradox

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Aim

to further inform the nature of asymmetric gender systems in the mind of the bilingual

➔ focus on gender errors in Determiner Phrase (DP) production for nouns of different genders in the L1 and the L2

	SPANISH (2-CLASS)		GERMAN (3-CLASS)	
the newspaper	*el periódico*	masculine	*die Zeitung*	feminine
the chair	*la silla*	feminine	*der Stuhl*	masculine
the game	*el juego*	masculine	*das Spiel*	neuter
the house	*la casa*	feminine	*das Haus*	neuter

Grammatical Gender

Spanish & German

Spanish and German differ in number of gender classes (asymmetric gender systems).

- Spanish: two gender classes
- German: three gender classes

	masculine	feminine	neuter	
Spanish	52%	45%	---------	(Bull, 1965)
German	50%	30%	20%	(Bauch, 1971)

Grammatical Gender

Default Gender

- In Spanish, masculine is the default gender (Harris, 1991)
- The default in German is not as clear given its ternary gender system
  - Steinmetz (2006) proposes a default gender hierarchy

masculine > *feminine* > *neuter*

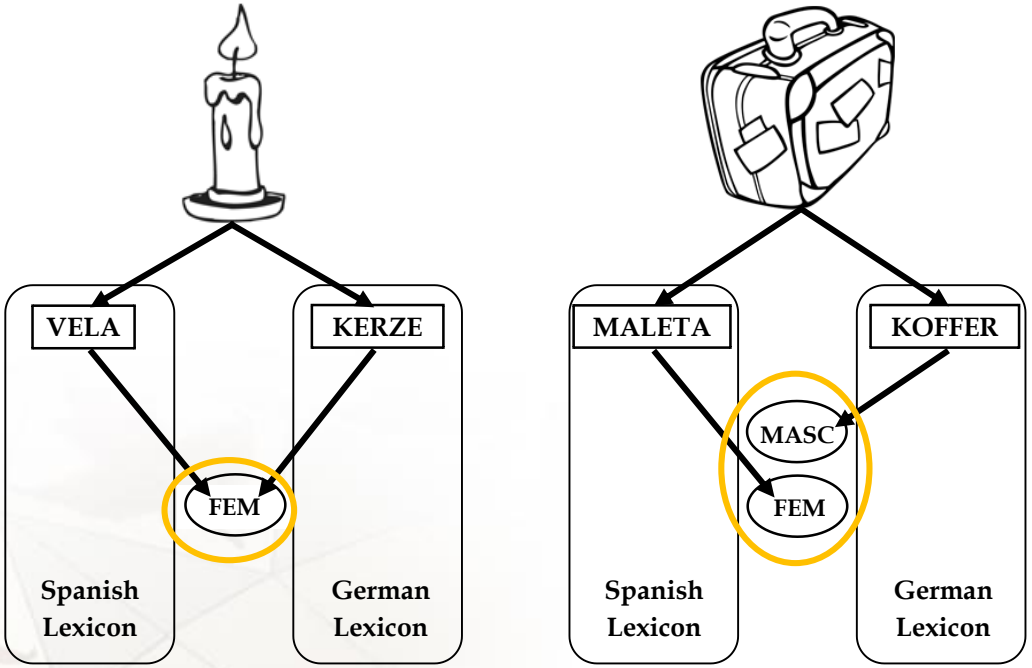
default **most marked**

Grammatical Gender in Bilinguals

Previous research has shown that the L1 and L2 have a shared representation:

- L1-L2 similar gender systems
  - Czech-German (Bordag, 2004; Bordag & Pechmann, 2007)
  - German-Dutch (Lemhöfer et al, 2008)
  - Italian-Spanish (Paolieri et al, 2010)
- L1-L2 asymmetric gender systems
  - Spanish-German (Klassen, 2013; forthcoming)

Grammatical Gender in Bilinguals



gender-integrated representation hypothesis
(Salamoura & Williams, 2007)

Grammatical Gender in Bilinguals

L1 Transfer

Transfer of the gender from the L1 into the L2 is a well-established source of errors for L1 speakers of a language with grammatical gender.

L1 Romance-L2 Dutch (Sabourin, Stowe & Haan, 2006)

L1 Dutch-L2 French (Dewaele & Véronique, 2001)

L1 German-L2 Dutch (Lemhöfer, Schriefers & Hanique, 2010)

Grammatical Gender in Bilinguals

Masculine as default

L1 speakers of a language without grammatical gender, on the other hand, have been shown to use masculine agreement as a default strategy.

L1 English-L2 Spanish (White et al, 2004; Bruhn de Garavito & White, 2002; Franceschina, 2001)

L1 English-L2 French (Hawkins, 2001)

Grammatical Gender in Bilinguals

Gender in Code-Switching

Code-switches within the DP also illustrate the contrast between L1 speakers of language with gender and L1 speakers of a language without gender (Liceras et al, 2008).

L1 Spanish – apply the gender of the L1 translation equivalent to the English noun

El [the_M] **book** [$libro_M$] / **La** [the_F] **door** [$puerta_F$]

L1 English – opt for masculine as a default strategy

El [the_M] **book** [$libro_M$] / **El** [the_M] **door** [$puerta_F$]

Research Question & Hypothesis

Do L1 Spanish-L2 German bilinguals transfer gender information from their L1 in L2 errors?

Based on previous research, we expect these bilinguals to show significant effects of L1 transfer given that their L1 has a gender system.

The Present Study

Participants

- 19 L1 Spanish-L2 German bilinguals
  - intermediate proficiency in German
  - living in Spain

Task

- L2 picture-naming task
  - participants named (orally) each picture as quickly and accurately as possible in German, producing the corresponding DP (ie. "*das Bett*")

L2 Picture-Naming Task

Materials

- 78 black & white line drawings depicting high-frequency inanimate concrete nouns (60 experimental stimuli)

Experimental Conditions

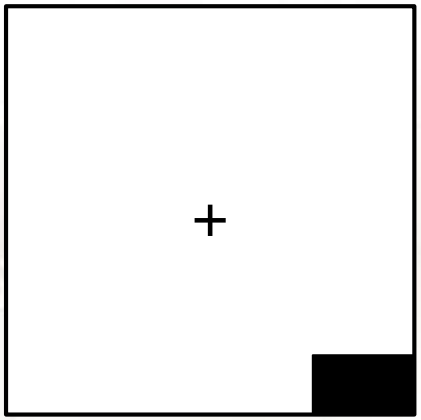
Congruent		Incongruent		L2 Neuter	
Spanish	*German*	*Spanish*	*German*	*Spanish*	*German*
masc	masc	masc	fem	masc	neut
fem	fem	fem	masc	fem	neut

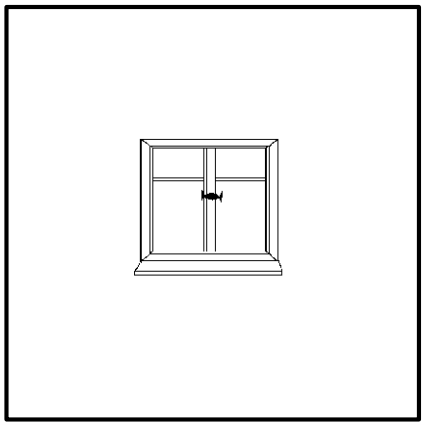
- nouns did not differ significantly in frequency by condition (p=.185) or by language (p=.858)

L2 Picture-Naming Task

Custom Recording Device

- picture onsets were recorded by a photodiode in a small device attached to the lower right-hand corner of the display
  - right audio channel: changes in frequency (black vs white)
  - left audio channel: participants' responses





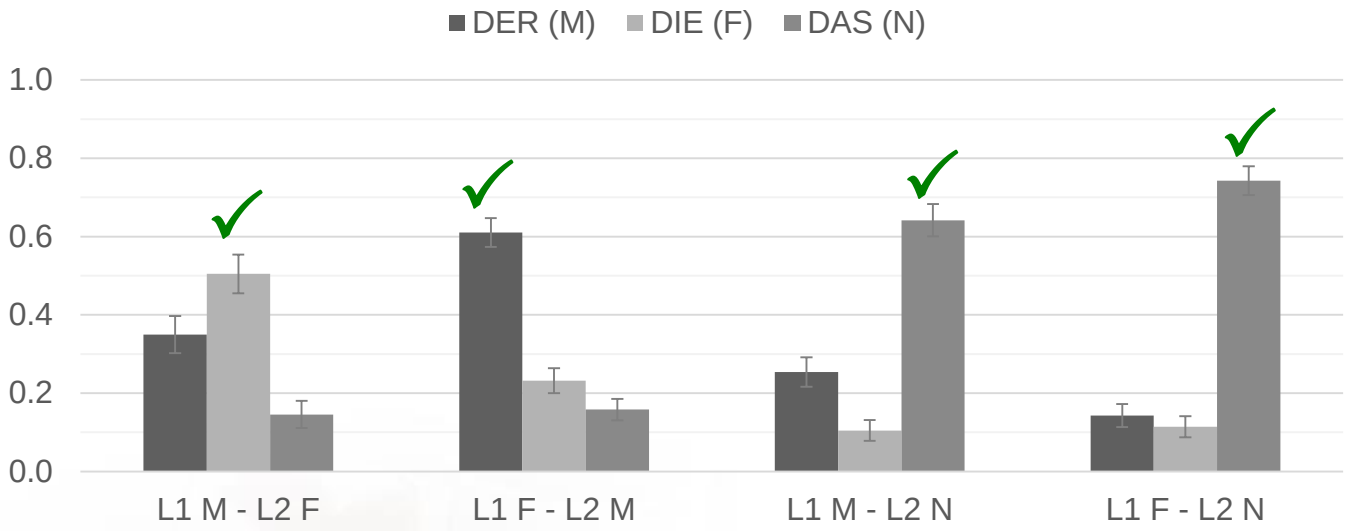
L2 Picture-Naming Task

Data Coding & Analysis

- gender errors were coded for the determiner produced
  - der (M) / die (F) / das (N)
- only gender errors were analyzed
  - naming errors (incorrect noun)
  - verbal dysfluencies
  - responses shorter than 300ms

  } excluded from the analysis
- only L1-L2 incongruent and L2 neuter conditions were analyzed

Results: Responses by Determiner



Condition		Example	Spanish		German		Accuracy
A	L1 M – L2 F	newspaper	*periódico*	**M**	*Zeitung*	**F**	50.5%
B	L1 F – L2 M	moon	*luna*	**F**	*Mond*	**M**	61.0%
C	L1 M – L2 N	game	*juego*	**M**	*Spiel*	**N**	64.2%
D	L1 F – L2 N	house	*casa*	**F**	*Haus*	**N**	74.3%

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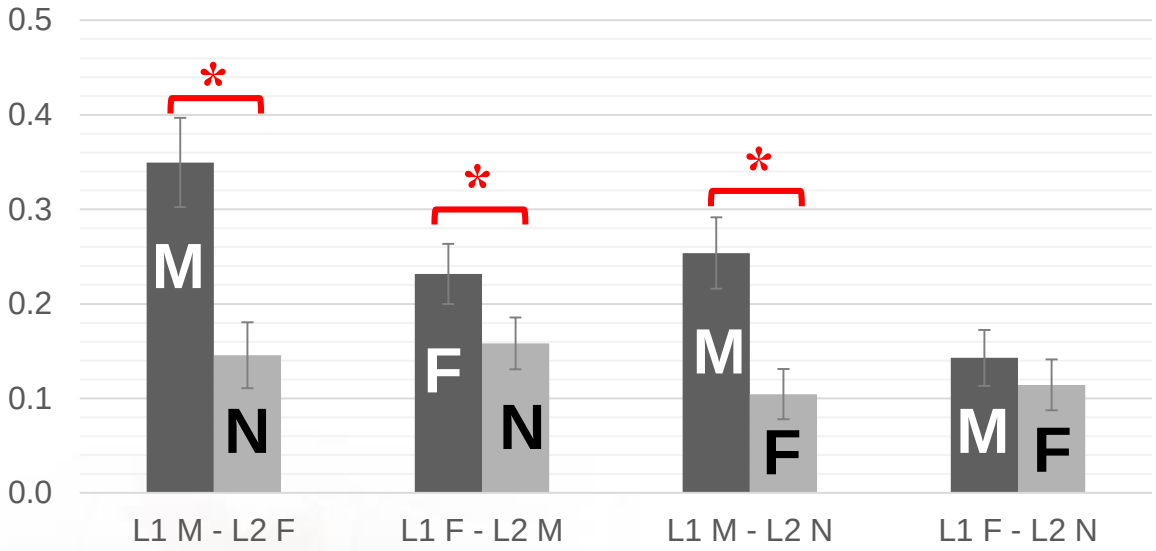
Results: Responses by Error Gender



Condition		masculine	feminine	neuter
A	L1 M – L2 F	L1 transfer / M default	*target*	---
B	L1 F – L2 M	*target*	L1 transfer	---
C	L1 M – L2 N	L1 transfer / M default	---	*target*
D	L1 F – L2 N	M default	L1 transfer	*target*

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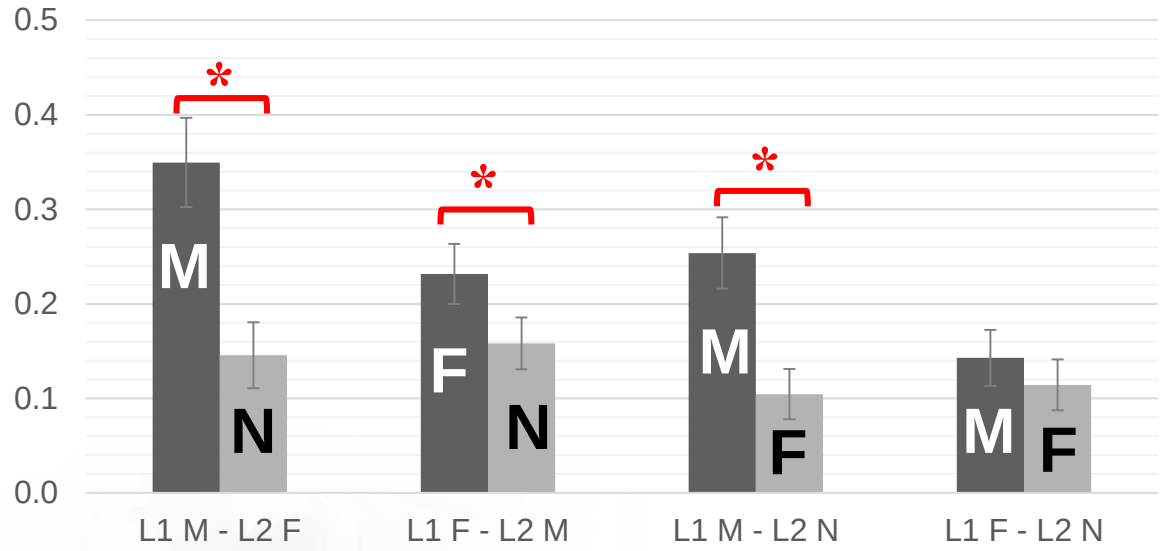
Results: Responses by Error Gender



- (A) L1 M – L2 F — L1 transfer/M as default
- (B) L1 F – L2 M — L1 transfer
- (C) L1 M – L2 N — L1 transfer/M as default
- (D) L1 F – L2 N — M as default (trend)

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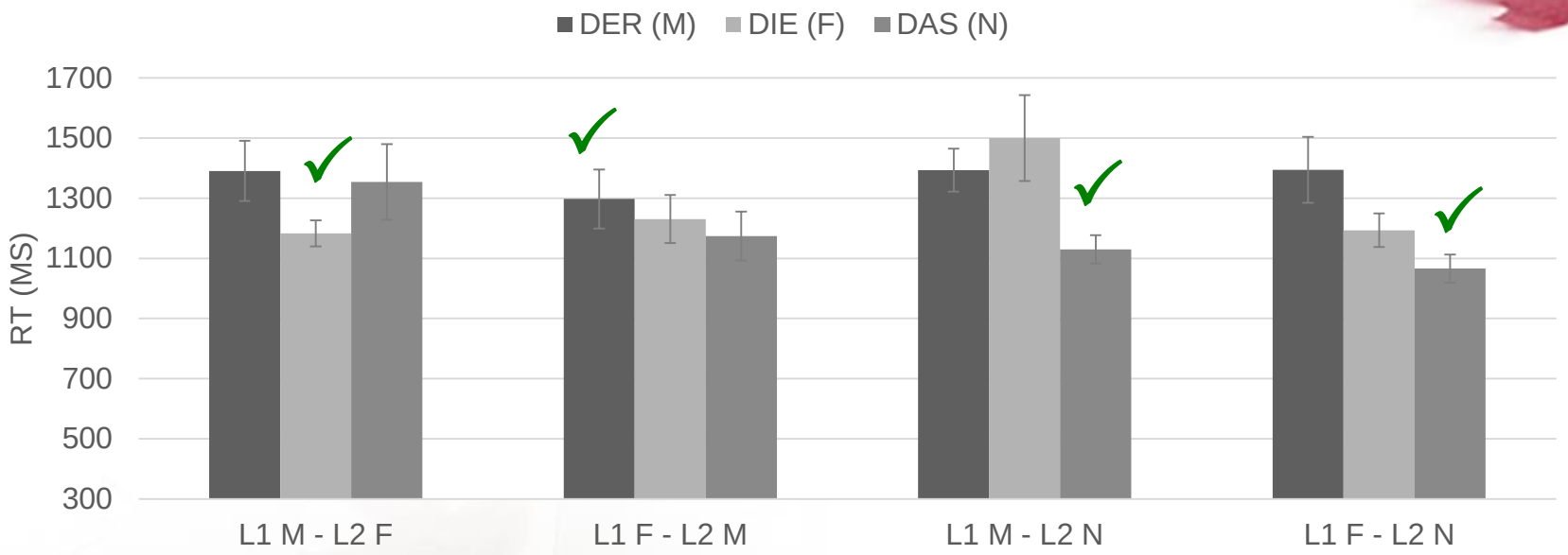
Results: RTs by Determiner



Condition		masculine	feminine	neuter
A	L1 M – L2 F	1391	**1183**	1355
B	L1 F – L2 M	**1298**	1231	1174
C	L1 M – L2 N	1394	1500	**1130**
D	L1 F – L2 N	1395	1194	**1066**

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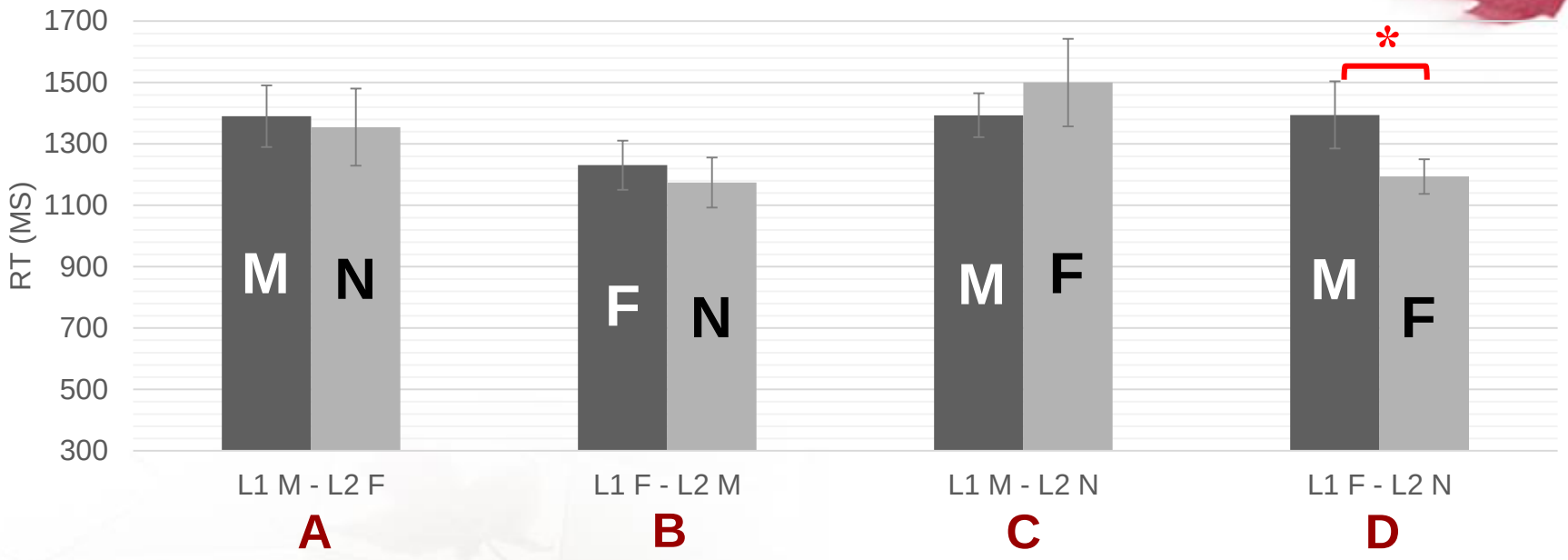
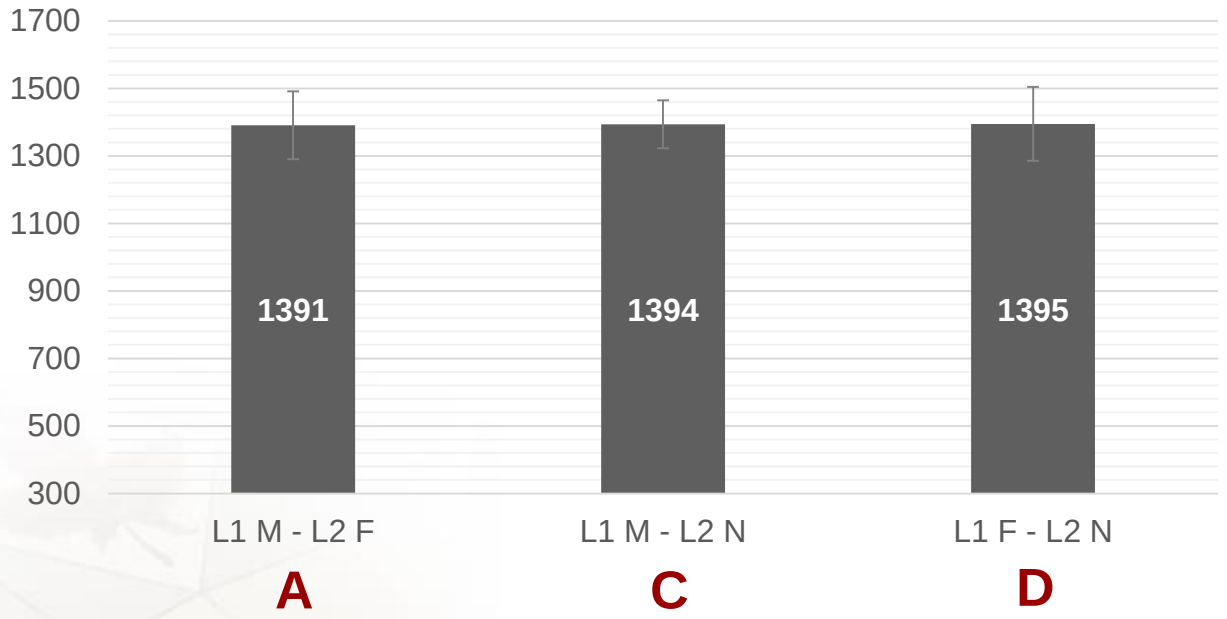
Results: RTs by Error Gender



- no significant differences in RTs by error gender for conditions A, B, and C
- RTs for masculine errors significantly slower than for feminine errors in condition D

Results: RTs by Error Gender

DER (M)



- no significant differences in RT for masculine errors by condition

Discussion

	Condition	Gender Strategy
A	L1 M – L2 F	L1 transfer / M default
B	L1 F – L2 M	L1 transfer
C	L1 M – L2 N	L1 transfer / M default
D	L1 F – L2 N	M default

- Conditions A, B, and C don't provide clear evidence with regards to the dominant gender strategy in L2 errors
  - in Conditions A & C L1 transfer and masculine as default are confounded
  - in Condition B masculine is the target so it's not possible to distinguish a possible default strategy from L1 transfer
- However, the higher proportion of masculine than feminine errors in Condition D suggest that masculine as default is the dominant gender strategy over L1 transfer

Discussion

	Condition	Gender Strategy
A	L1 M – L2 F	L1 transfer / M default
B	L1 F – L2 M	L1 transfer
C	L1 M – L2 N	L1 transfer / M default
D	L1 F – L2 N	M default

- RTs for masculine errors are the same across Conditions A, C, & D
  - masculine errors are clearly masculine as default in Condition D and thus the errors in Conditions A & C may be attributable to the same strategy
- RTs for masculine errors in Condition D are significantly slower than RTs for feminine errors
  - this could be interpreted as masculine as default having a processing cost in comparison to L1 transfer

Conclusions

These data offer new evidence of a masculine-as-default strategy in L1 Spanish-L2 German bilinguals.

This is an unexpected finding in light of extensive previous research that has shown that L1 speakers of languages with grammatical gender tend to transfer L1 gender information into the L2.

We attribute this default strategy to the representation of the Spanish-German asymmetric gender systems. The nature of this representation allows masculine-as-default as a viable option, even though it has a cost compared to L1 transfer.

Future Research

More evidence is needed from a task that directly targets masculine-as-default and L1 transfer.

In the future it would also be relevant to study:

- bilinguals with the opposite linguistic profile (ie. L1 has an additional gender not present in the L2)
- bilingual speakers of other languages with asymmetric gender systems

Thank you!

Gracias!

Danke!