

What code-switching reveals about the nature of asymmetric gender systems in the bilingual mental lexicon

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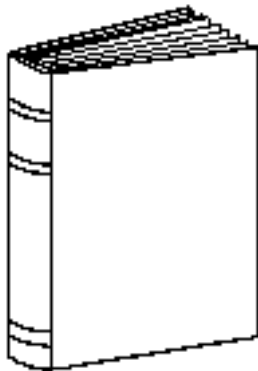


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Aim

**further investigate the nature of
L1-L2 asymmetric gender systems**

- code-switching offers a complementary perspective to online, single-language tasks
 - gender agreement in German-Spanish and Spanish-German DPs



das libro
el Buch



Grammatical Gender

▪ **Spanish**

- two gender values
- [\pm feminine] (ie. Roca, 1989)

▪ **German**

- three gender values
- [\pm masculine] [\pm feminine] (González Vilbazo, 2005)

	masculine [-fem] [+masc]	feminine [+fem] [-masc]	neuter [-fem] [-masc]	
Spanish	52%	45%	---	(Bull, 1965)
German	50%	30%	20%	(Bauch, 1971)



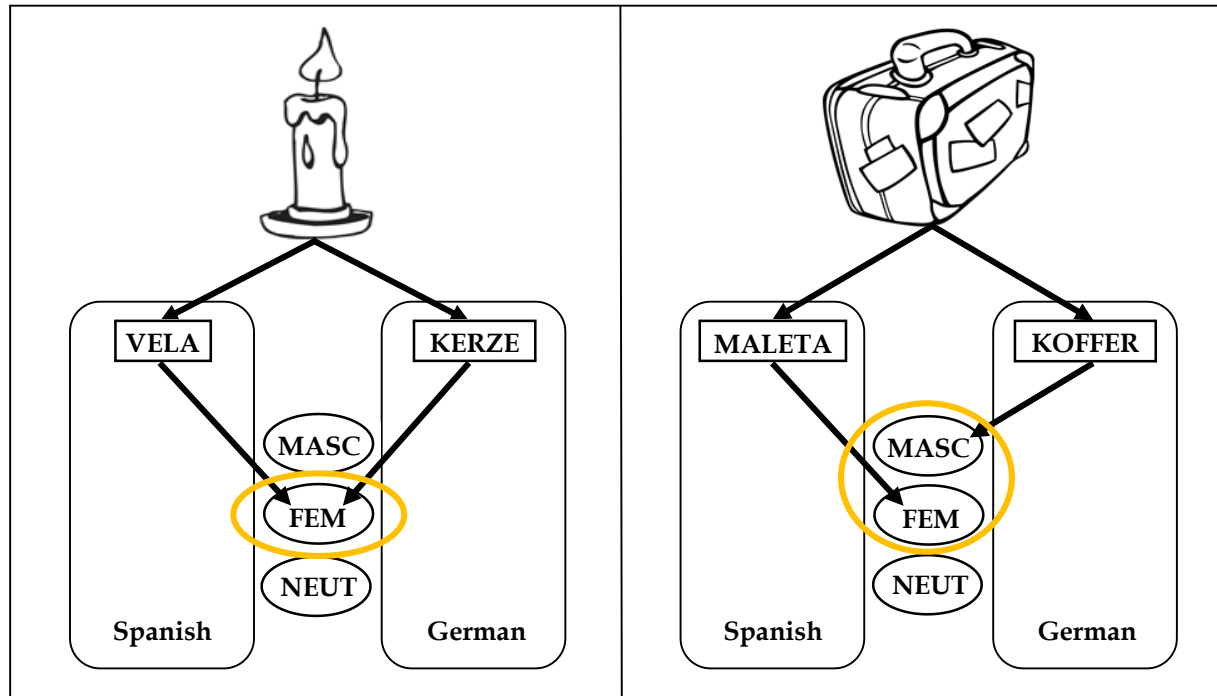
Bilinguals: Asymmetric Gender Systems

Psycholinguistic research has shown that the L1 and L2 gender systems have an integrated representation, even when the L1 and the L2 differ in number of gender values

- **3 values (L1) – 2 values (L2)**
 - L1 German-L2 Dutch (Lemhöfer et al, 2008)
 - L1 German-L2 Italian (Johnson Fowler, 2015)
- **2 values (L1) – 3 values (L2)**
 - L1 Spanish-L2 German (Klassen, 2016a, 2016b)
 - L1 French-L2 German (Klassen, 2016b)



Gender Integrated Representation Hypothesis (Salamoura & Williams, 2007)



L1-L2 congruent

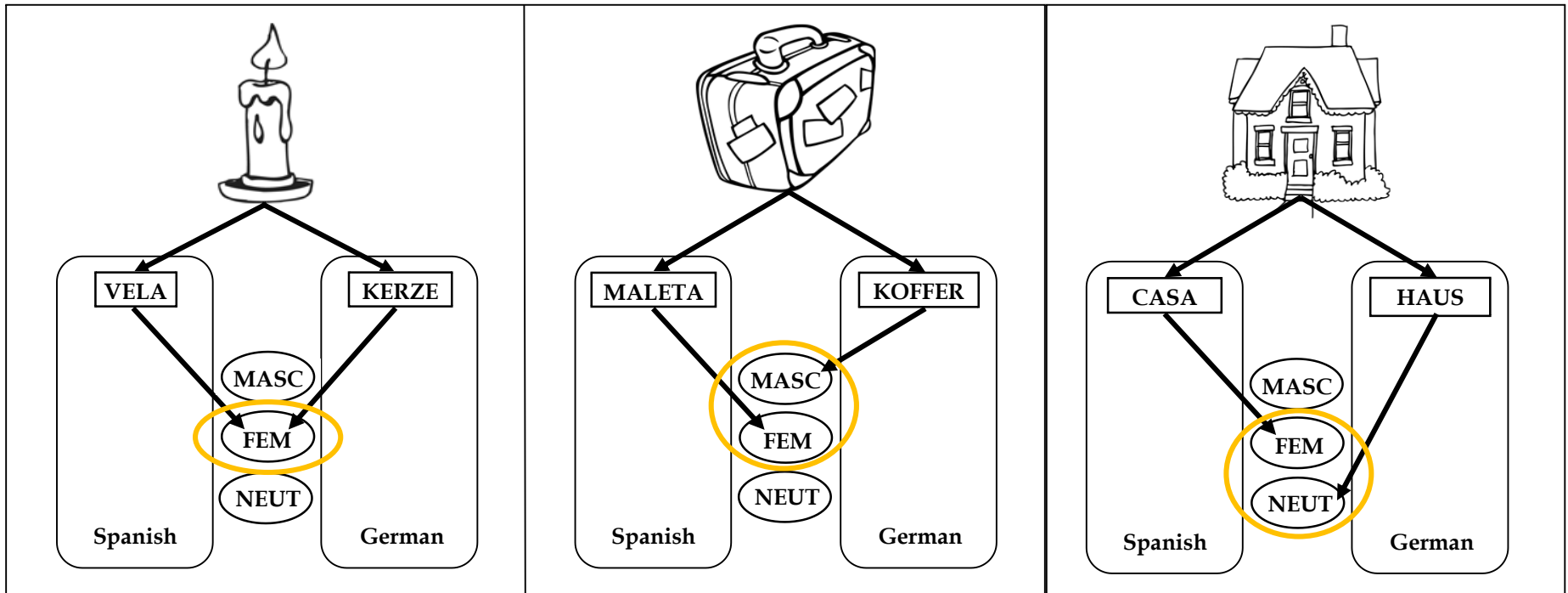
vela_F - Kerze_F

L1-L2 incongruent

maleta_F - Koffer_M



Asymmetric Gender Representation Hypothesis (Klassen, 2016b)



L1-L2 congruent

vela_F - Kerze_F

L1-L2 incongruent

maleta_F - Koffer_M

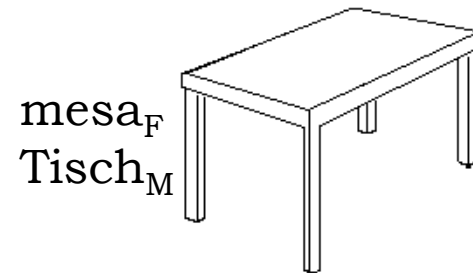
L2 neuter

casa_F - Haus_{Nt}



Gender in Code-Switched DPs

Bilinguals have been found to use/prefer different gender agreement strategies in code-switched DPs involving two languages with grammatical gender



- **agreement between D and N in the switch**

die_F mesa_F

el_M Tisch_M

- **agreement between D and translation equivalent N**

der_M mesa_F (Tisch_M)

la_F Tisch_M (mesa_F)



Gender in Code-Switched DPs

Bilinguals have been found to use/prefer different gender agreement strategies in code-switched DPs involving two languages with grammatical gender

- **D – N in switch**

die_F mesa_F

- 2L1 Italian-German (Cantone & Müller, 2008; Eichler et al, 2012)
- 2L1 French-German (Eichler et al, 2012)
- 2L1 Spanish-German (González-Vilbazo, 2005; Eichler et al, 2012)

- **D – translation equivalent N**

der_M mesa_F

- 2L1 French-German (Radford et al, 2007)



Research Question

Do Spanish-German bilinguals prefer agreement between the D and the N in the switch or between the D and the translation equivalent N?

$die_F mesa_F$ vs $der_M mesa_F (Tisch_M)$

Does this preference vary with respect to:

- L1?
- type of switch?

Spanish D-German N

$el_M Tisch_M$

German D-Spanish N

$die_F mesa_F$



Acceptability Judgment Task

- **Participants**

- 23 L1 Spanish-L2 German adults
- 16 L1 German-L2 Spanish adults
 - intermediate-advanced level of proficiency in the L2

- **Task**

- acceptability judgment task (surveygizmo.com)
 - participants were asked to rate the acceptability of sentences containing Spanish-German code-switched DPs on a 4-point Likert scale



Acceptability Judgment Task

▪ Stimuli

- 120 code-switched sentences of the type
 - Target DP + PP + Copula (*ser/sein*) + Adj

El_M Rock_M *in der Garderobe ist* **rot.** (Sp D-Ger N)
The skirt in the closet is red.

Das_{Nt} maleta_F *de la azafata es* **grande.** (Ger D-Sp N)
The suitcase of the flight attendant is big.

- no gender agreement cues outside of the DP
 - predicative adjectives in German are not marked for gender
 - only ambiguously-marked Spanish adjectives were used



Acceptability Judgment Task

▪ Stimuli

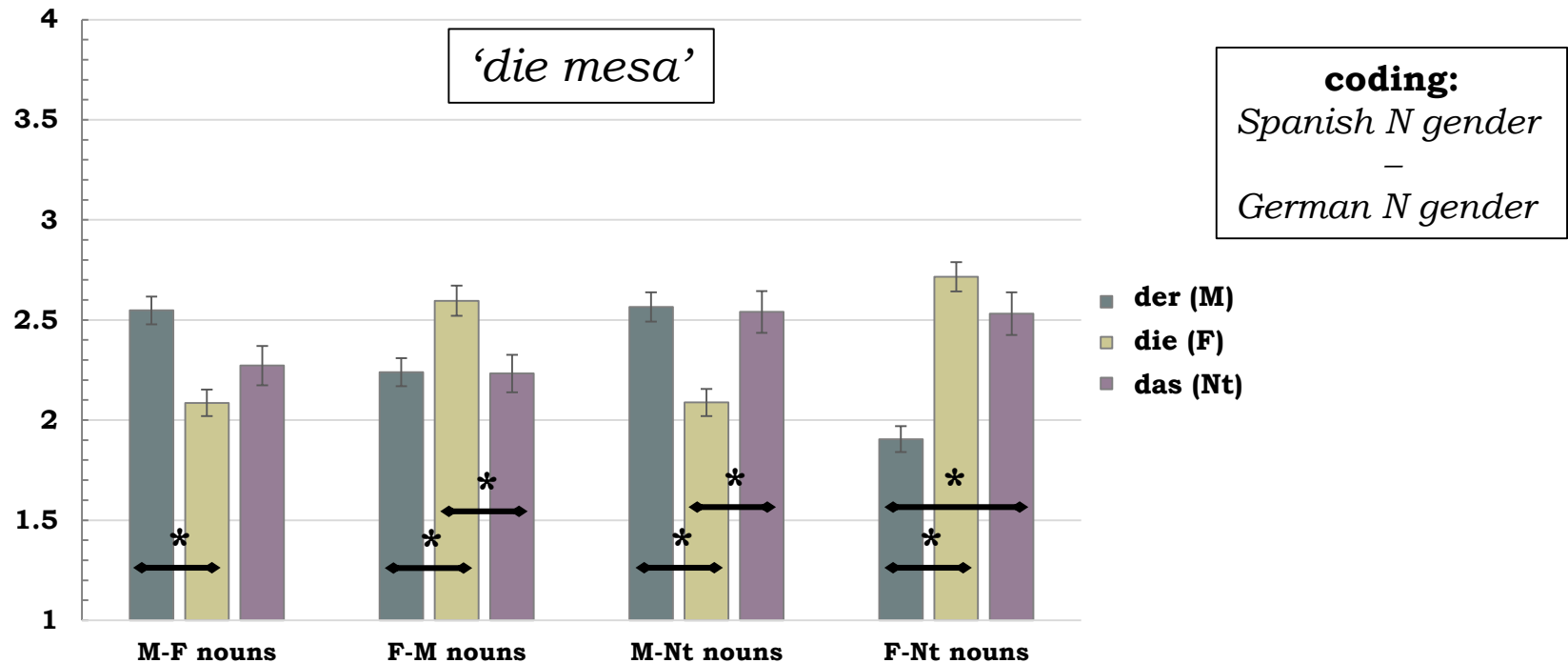
- gender congruency between the L1 and L2 nouns was manipulated to form 4 conditions
- target DPs in each of these conditions were presented with all possible D forms (2 in Spanish, 3 in German)

Noun Gender		Determiner Gender	
Spanish	German	Spanish	German
masculine	feminine		
feminine	masculine	el _M	der _M
masculine	neuter	la _F	die _F
feminine	neuter		das _{Nt}



Results:

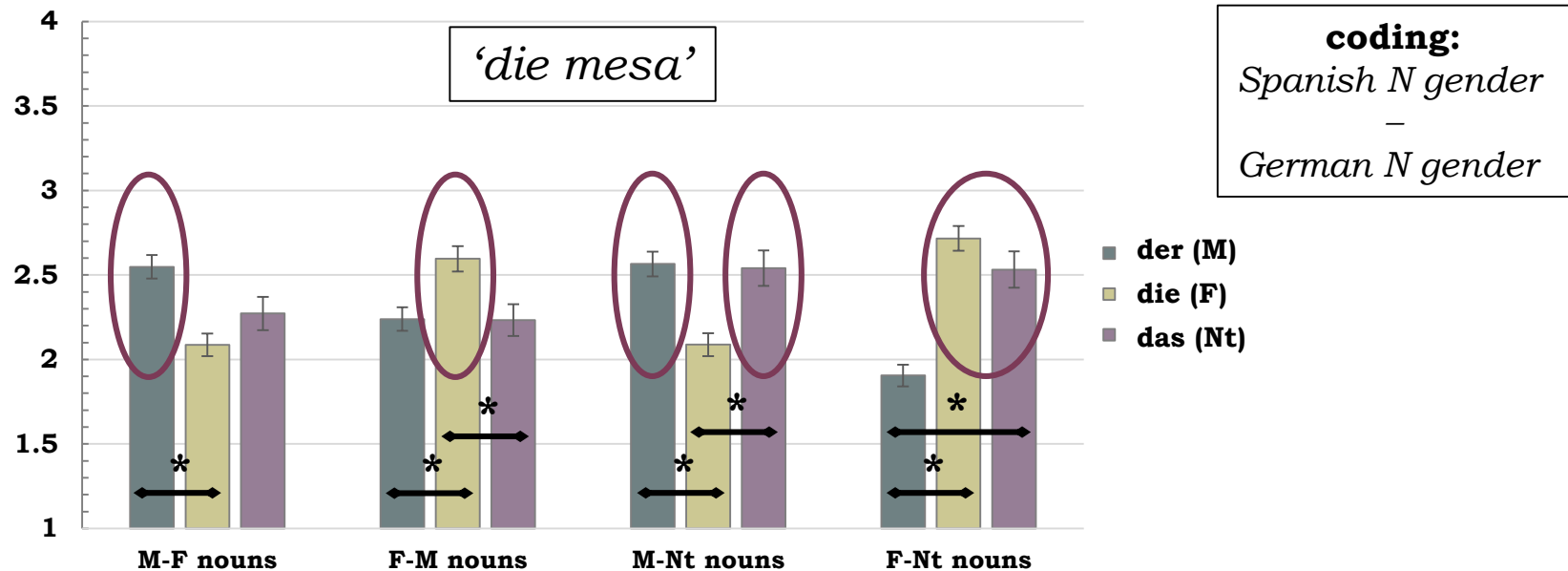
German D-Spanish N DPs



- no significant differences between the L1 Spanish and L1 German bilinguals' preferences ($p=.098$)



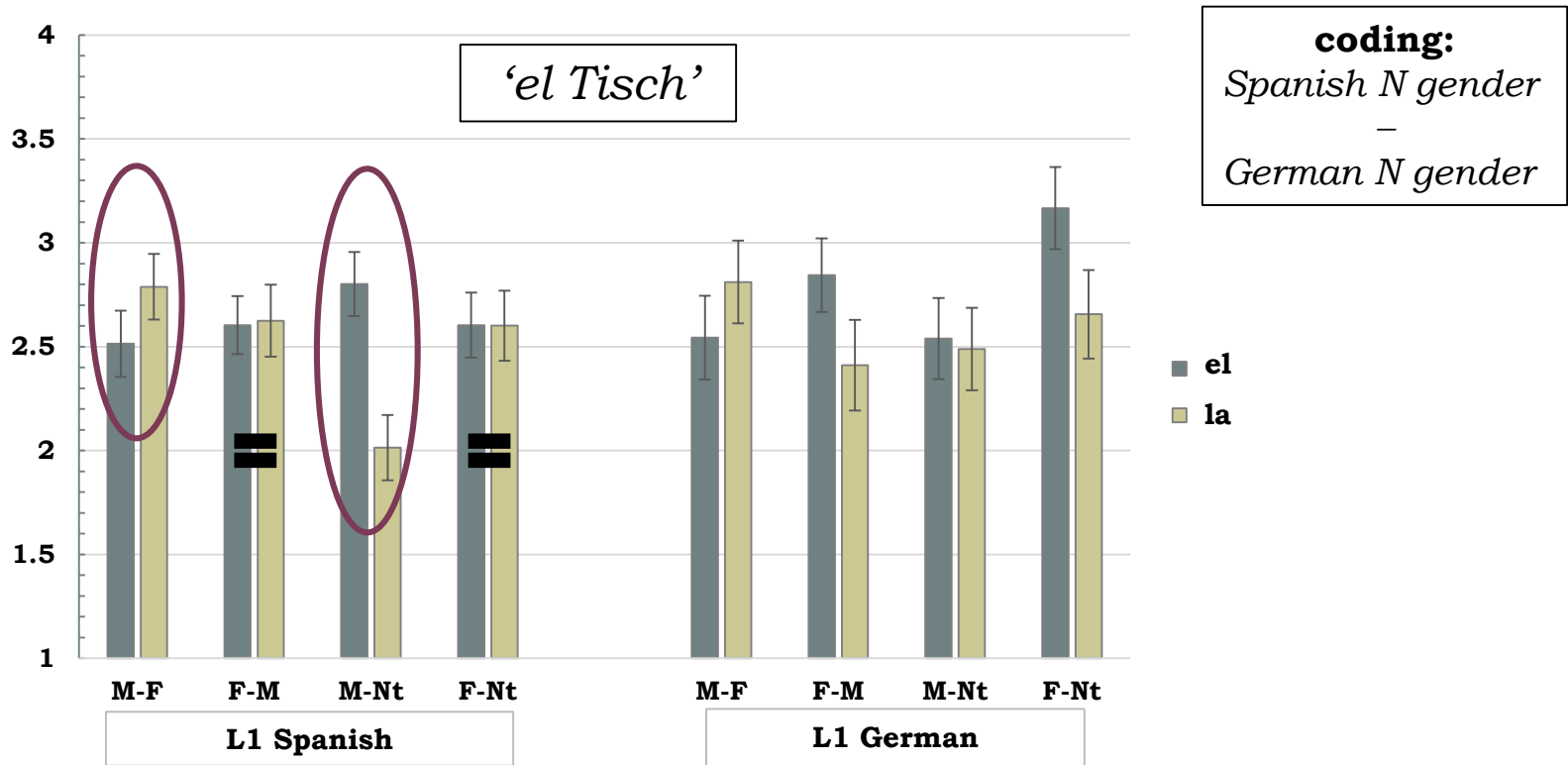
Results: German D-Spanish N DPs



Noun Gender	Preferred Determiner	
Spanish M-German F	<i>der</i>_M	(p<.001)
Spanish F-German M	<i>die</i>_F	(p=.030)
Spanish M-German Nt	<i>der</i>_M = <i>das</i>_{Nt}	(p=.001)
Spanish F-German Nt	<i>die</i>_F = <i>das</i>_{Nt}	(p<.001)



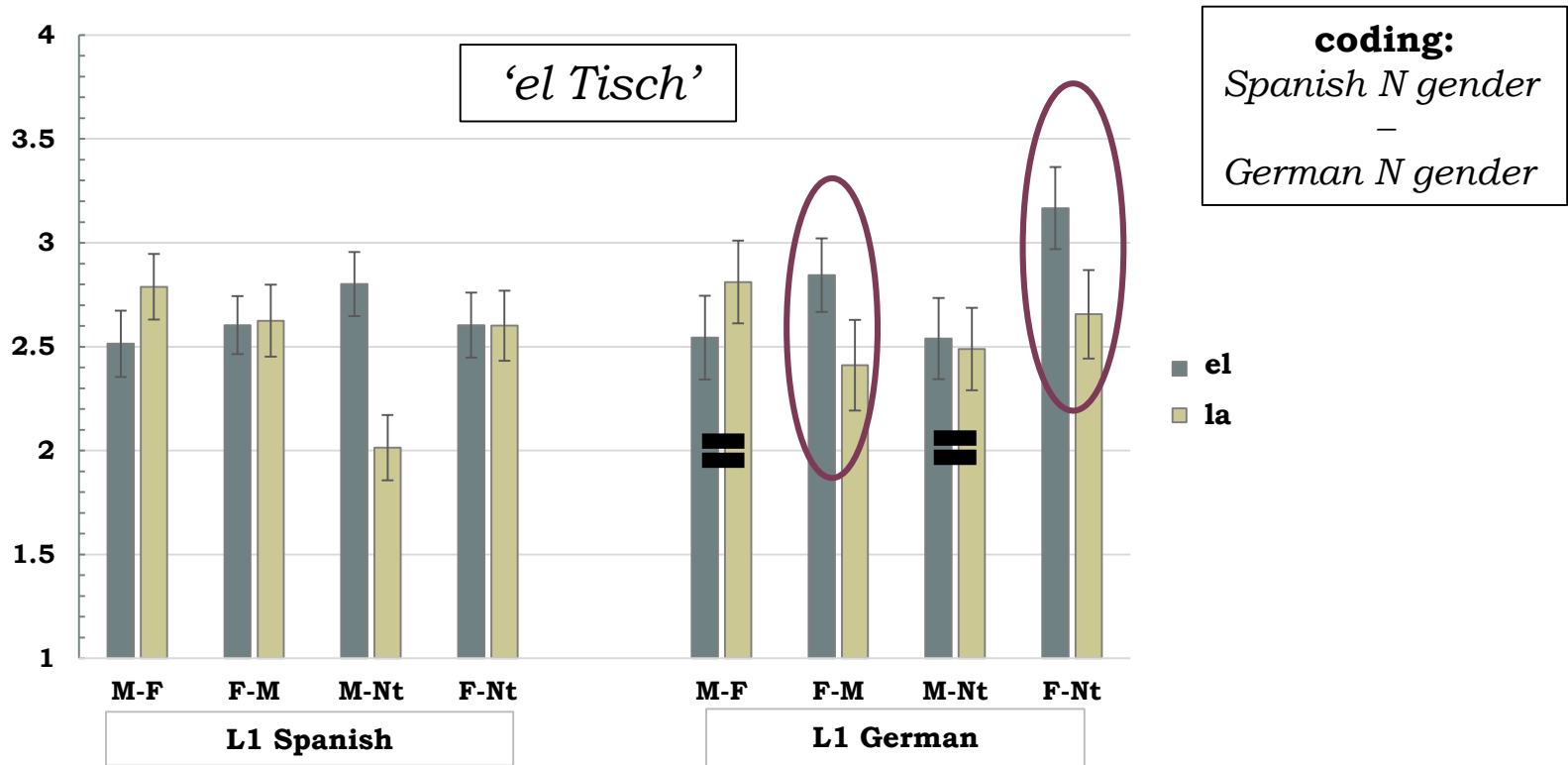
Results: Spanish D-German N DPs



- L1 Spanish bilinguals only display a significant preference for one D over the other in two of the four conditions
 - significant preference for **la** with Spanish M-**German F** nouns ($p=.023$)
 - significant preference for **el** with Spanish M-**German Nt** nouns ($p=.001$)



Results: Spanish D-German N DPs



- L1 German bilinguals also only display a significant preference for one D over the other in two of the four conditions
 - significant preference for **el** with Spanish F-**German M** nouns ($p=.029$)
 - significant preference for **el** with Spanish F-**German Nt** nouns ($p=.007$)



Results: Summary

Noun Gender		German D-Spanish N		Spanish D-German N	
Spanish	German	L1 Spanish	L1 German	L1 Spanish	L1 German
masc	fem	masc D		fem D	fem D (trend)
fem	masc	fem D		<i>masc = fem D</i>	masc D
masc	neut	<i>masc = neut D</i>		masc D	<i>masc = fem D</i>
fem	neut	fem D (trend)		<i>masc = fem D</i>	masc D

- it has been noted in other studies on the use of gender in nominal agreement (ie. Hopp, 2013) that participants that form a homogenous group may not adopt/prefer the same gender agreement strategy
- given that group agreement preferences in this study are not always clear (ie. L1 Spanish bilinguals' preferences with Spanish D-German Nt DPs), individual agreement preferences were also analyzed



Agreement Strategies

- the same analysis was carried out on the individual data
 - highest rated D in each condition for each type of switched DP
- D preference in each condition linked to gender agreement

- **possible agreement strategies**

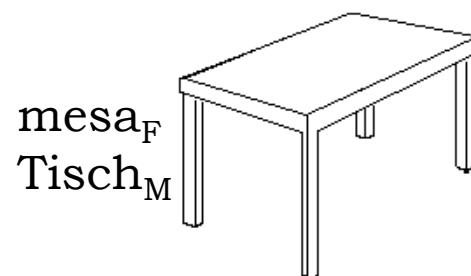
- D – N in switch

die_F mesa_F

[+fem] [+fem]

el_M Tisch_M

[-fem] [-fem]



- D – translation-equivalent N

der_M mesa_F (Tisch_M)

[-fem] [+fem] [-fem]

la_F Tisch_M (mesa_F)

[+fem] [-fem] [+fem]



Agreement Strategies

Noun Gender		German D-Spanish N		
Spanish	German	der _M	die _F	das _{Nt}
masc	fem	N in switch	translation N	?
fem	masc	translation N	N in switch	?
masc	neut	N in switch	?	translation N
fem	neut	default / ?	N in switch	translation N

Noun Gender		Spanish D-German N	
Spanish	German	el _M	la _F
masc	fem	translation N	N in switch
fem	masc	N in switch	translation N
masc	neut	trans/switch	?
fem	neut	N in switch	translation N



Results: Individual Agreement Strategies

Noun Gender		German D-Spanish N	Spanish D-German N
SPA	GER		
masc	fem	N in switch	N in switch
fem	masc	N in switch	N in switch
masc	neut	N in switch	N in switch
fem	neut	translation N	N in switch

- participants were classified as either *overall strategy* users, *switch-specific strategy* users, or *no strategy* users
- **overall strategy users**
 - consistently used one agreement strategy with both types of switched DPs
 - maximum of one instance of preference for the other agreement strategy



Results: Individual Agreement Strategies

Noun Gender		German D-Spanish N	Spanish D-German N
SPA	GER		
masc	fem	N in switch	translation N
fem	masc	N in switch	N in switch
masc	neut	N in switch	translation N
fem	neut	translation N	translation N

- participants were classified as either *overall strategy* users, *switch-specific strategy* users, or *no strategy* users
- **switch-specific strategy users**
 - consistently used one agreement strategy with each type of switched DP
 - maximum of one instance of preference for the other agreement strategy



Results: Individual Agreement Strategies

Noun Gender		German D-Spanish N	Spanish D-German N
SPA	GER		
masc	fem	switch N = trans N	N in switch
fem	masc	translation N	switch N = trans N
masc	neut	N in switch	translation N
fem	neut	translation N	switch N = trans N

- participants were classified as either *overall strategy* users, *switch-specific strategy* users, or *no strategy* users
- **no strategy users**
 - mixed agreement strategies with each type of switched DP
 - instances of conditions where no clear strategy could be deduced



Results: Individual Agreement Strategies

Agreement strategy	Overall strategy users	Switch-specific strategy users	
		<i>German D-Spanish N</i>	<i>Spanish D-German N</i>
N in switch	8	5	11
translation N	2	3	9
none	6	15	3
total	16 / 41%	23 / 59%	

- approximately 60% of participants were switch-specific strategy users, while only 40% were overall strategy users
- **overall strategy users**
 - agreement between the D and the N in the switch was the most preferred strategy
 - second-largest number of participants displayed no discernible preference for any strategy across all switch types



Results: Individual Agreement Strategies

Agreement strategy	Overall strategy users	Switch-specific strategy users	
		<i>German D-Spanish N</i>	<i>Spanish D-German N</i>
N in switch	8	5	11
translation N	2	3	9
none	6	15	3
total	16 / 41%	23 / 59%	

- **German D-Spanish N DPs**

- majority of participants displayed no discernible preference for any strategy
- minimal number of participants preferred agreement between the D and the N in the switch or the translation equivalent N



Results: Individual Agreement Strategies

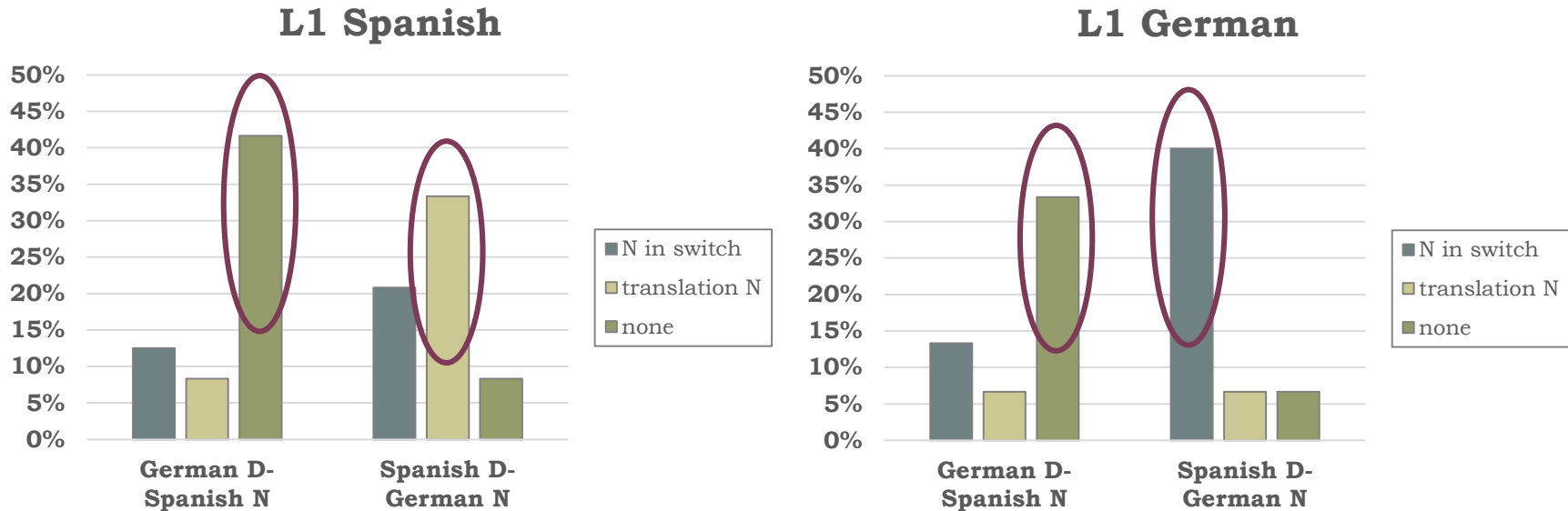
Agreement strategy	Overall	Switch-specific strategy	
	strategy users	users	
		<i>German D-Spanish N</i>	<i>Spanish D-German N</i>
N in switch	8	5	11
translation N	2	3	9
none	6	15	3
total	16 / 41%	23 / 59%	

- **Spanish D-German N DPs**

- majority of participants preferred agreement between the D and the N in the switch
- second-most preferred strategy was agreement between the D and the translation equivalent N



Results: Individual Agreement Strategies



- **German D-Spanish N DPs**

- neither L1 Spanish nor L1 German bilinguals display a predominant preference for either agreement strategy

- **Spanish D-German N DPs**

- L1 Spanish bilinguals prefer agreement between the D and translation equivalent N
- L1 German bilinguals prefer agreement between the D and N in the switch



Discussion

- individual analysis offers a more complete picture than analysis by group
- majority of participants opted for a switch-specific strategy

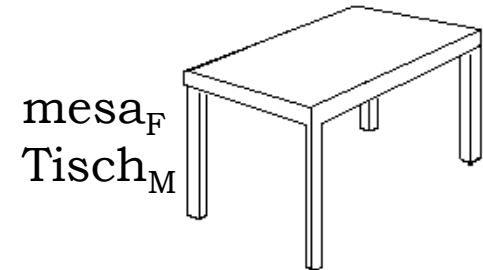
DP Type	L1 Spanish	L1 German
German D-Spanish N	none	none
Spanish D-German N	translation N	N in switch

- L1 Spanish and L1 German bilinguals pattern together in displaying no clear agreement preference with German D-Spanish N switches
- with Spanish D-German N switches, on the other hand, they opt for opposite agreement strategies



Discussion

- **Spanish D-German N switches**



L1 Spanish – translation equivalent N

la_F Tisch_M (mesa_F)

L1 German – N in switch

el_M Tisch_M

agreement between D and noun in L1



Discussion

- **German D-Spanish N switches**
- lack of clear agreement strategy preference for either L1 Spanish or L1 German bilinguals
- due to the fact that additional gender value option (neuter) on the D is more problematic than on the N

Determiner

Noun

masculine
feminine
neuter



masculine
feminine



Conclusions

- **Gender agreement strategy preferences in code-switched Spanish-German DPs**
 - preferences vary by L1 and according to the type of switch
 - **Spanish D-German N switches**
 - in both types of bilinguals preferred agreement with the L1 noun
 - **German D-Spanish N switches**
 - neither group of bilinguals displayed a discernible preference for one agreement strategy over the other
 - gender agreement strategies not as clear-cut as in previous studies
- **Code-switching and gender in the bilingual lexicon**
 - integrated representation of asymmetric gender systems
 - the fact that the bilinguals show a preference for agreement with the L1 noun even when it does not appear in the switch illustrates that both L1 and L2 gender information is available to these bilinguals
 - complexity of asymmetric gender systems
 - illustrated in the lack of discernible agreement preference with some DPs for both groups of bilinguals





¡Gracias!

Danke!