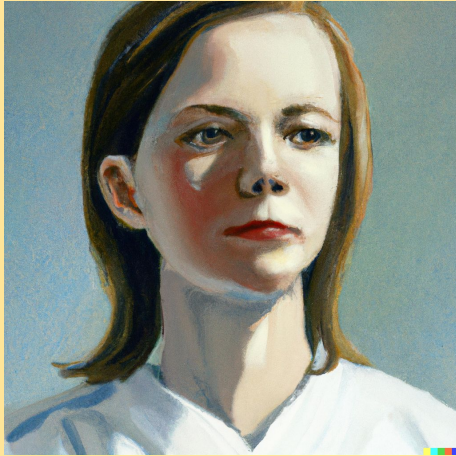


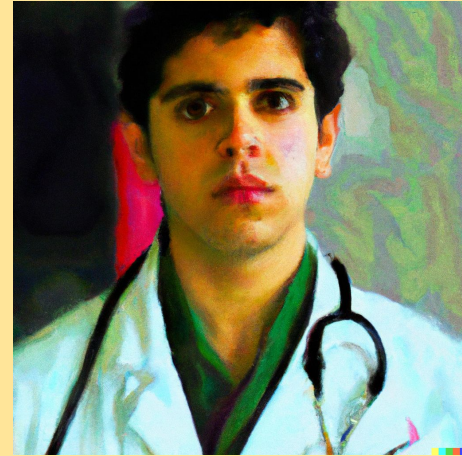
# **Grammatical Gender and Cognition**

How Language May Shape Thought and Culture

# What is grammatical gender?



*La mujer / The woman*  
*La doctora / The doctor*



*El hombre / The man*  
*El doctor / The doctor*

# What is grammatical gender?



*La mesa (f.)  
The table*

*El pincel (m.)  
The paint brush*

*La pintura (f.) /  
El cuadro (m.)  
The painting*

*El arte (m.)  
The art*

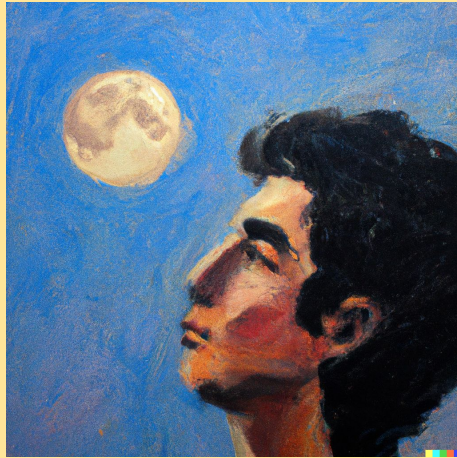
*Los colores (m.)  
The colours*

# What is grammatical gender?

The moon



La luna (f.)



Der Mond (m.)

The sun



El sol (m.)



Die Sonne (f.)

# Where does grammatical gender come from?



**Ancestors, animism and associations**  
“[Grammatical gender] represented gender as due to the **personifying instinct** of **primitive man**. **Natural objects** were not only personified, but also **freely sexualized**. Grammatical gender as a classification of word-*forms* is then a conventionalized, crystallized resultant of this **primitive sexualization**.” (Wheeler 1899, 529)

# Where does grammatical gender come from?

Cerez -



Cereza (f.)  
Cherry



Cerezo (m.)  
Cherry tree

## **Morphology, multiplication and markers**

“The form-groups of nouns which mark the classification by gender had originally **nothing** to do with **distinctions of sex**. Their distinctive endings did not carry with them originally the suggestion of sex” (Wheeler 1899, 530)

# Linguistic relativism - does language affect thought?

## Quick facts

- AKA Sapir-Whorf theory (Edward Sapir, Benjamin Lee Whorf)
- Differentiates between two versions: weak and strong
- Strong version AKA linguistic determinism (lacks evidence)
- Language *may* in some particular cases *impact* thought
- Speaking, thinking and thinking for speaking (Slobin 1990)
- Several studies on the topic: perception of colour, time, aspect, grammatical gender etc.

# The experiment

- Based on previous studies (Sera, Berge and Pintado 1994; Haertlé 2017)
- Two segments: native Spanish-speakers and native English-speakers
- Conceptualize 20 images of various objects (animals, natural products and artificial objects)

“We would like to make an animated cartoon for children, where various animals, fruit and objects communicate with each other. The following images represent these characters that we will use in the animation. We ask you to indicate for each image whether you think the character should be played with a male or a female voice”

Sera, Maria D., Christian A. H. Berge, and Javier del Castillo Pintado. 1994. “Grammatical and Conceptual Forces in the Attribution of Gender by English and Spanish Speakers.” *Cognitive Development* 9 (3): 261-292. doi:10.1016/0885-2014(94)90007-8

Haertlé, Izabella. 2017. “Does Grammatical Gender Influence Perception? A Study of Polish and French Speakers.” *Psychology of Language and Communication* 17 (1): 386-407. doi:10.1515/plc-2017-0019



# Hypothesis

## Hypothesis A

For the **Spanish-speaking** segment, participants will tend to assign voices to objects in **congruence** with the **grammatical gender** of the noun of the object. Despite still being **influenced** by several **cultural** and **individual** factors, compared to the English-speaking segment, it will be clear that their **conceptualisation** will to a higher degree be **influenced** by **language**.

## Hypothesis B

For the **English-speaking** segment, **apart** from various **cultural** and **individual** factors, participants may tend to assign **male** voices to **artificial products** and **female** voices to **natural products**, following the principle of a **universal gender conceptualisation**.

# The material



Apple (f.) & Bell pepper (m.)



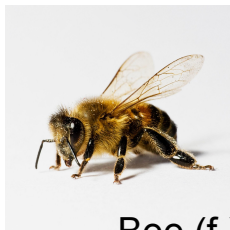
Crow (m.) & Seagull (f.)



Frog (f.) & Toad (m.)



Ship (m.) & Sword (f.)



Bee (f.) & Ant (f.)



Cat (m.) & Rabbit (m.)

# The participants



78 participants

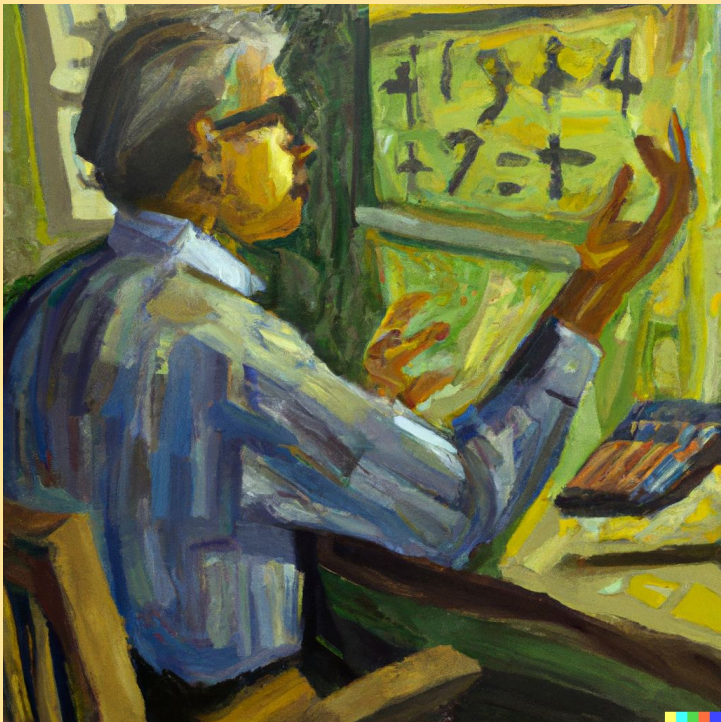
- Monolinguals (37%)
- English (66%), Danish (20%)  
Romance languages (33%)
- Male (25.6%), female (73.1%)  
Other (1.3%)



23 participants

- Monolinguals (21%)
- Danish (17%), Romance  
languages (43%)  
Serbian, Arabic, Polish (17%)
- Male (56.5%), female (43.5%)

# The results



Object	Sp. M.V.	Sp. F.V.	Sp. Skips	En. M.V.	En. F. V.	En. Skips
Bee	23.1%	<u>76.9%</u>	0	56.5%	43.5%	0
Pig	<u>73.1%</u>	26.9%	0	43.5%	56.5%	0
Crow	<u>85.9%</u>	14.1%	0	87%	13%	0
Frog	46.2%	<u>53.8%</u>	0	65.2%	34.8%	0
Cat	<u>53.8%</u>	46.2%	0	21.7%	78.3%	0
Seagull	42.9%	<u>57.1%</u>	1	78.3%	21.7%	0
Ant	24.4%	<u>75.6%</u>	0	65.2%	34.8%	0
Bear	<u>84.6%</u>	15.4%	0	69.5%	30.4%	0
Rabbit	<u>57.7%</u>	42.3%	0	39.1%	60.9%	0
Toad	<u>89.7%</u>	10.3%	0	87%	13%	0
Tortoise	27.6%	<u>72.4%</u>	2	73.9%	26.1%	0
Bell pepper	<u>74.4%</u>	25.6%	0	63.6%	36.4%	1
Apple	15.4%	<u>84.6%</u>	0	17.4%	82.6%	0
Maize	<u>65.4%</u>	34.6%	0	68.2%	31.8%	1
Mushroom	<u>64.1%</u>	35.9%	0	54.5%	45.5%	1
Clock	<u>76.6%</u>	23.4%	1	73.9%	26.1%	0
Book	<u>62.8%</u>	37.2%	0	40.9%	59.1%	1
Guitar	40.3%	<u>59.7%</u>	0	56.5%	43.5%	0
Sword	39.5%	<u>60.5%</u>	2	78.3%	21.7%	0
Ship	<u>87%</u>	13%	1	52.2%	47.8%	0

# The results

## Quick stats

Spanish segment tendency to assign voice in congruence with g.g. of noun: 71%

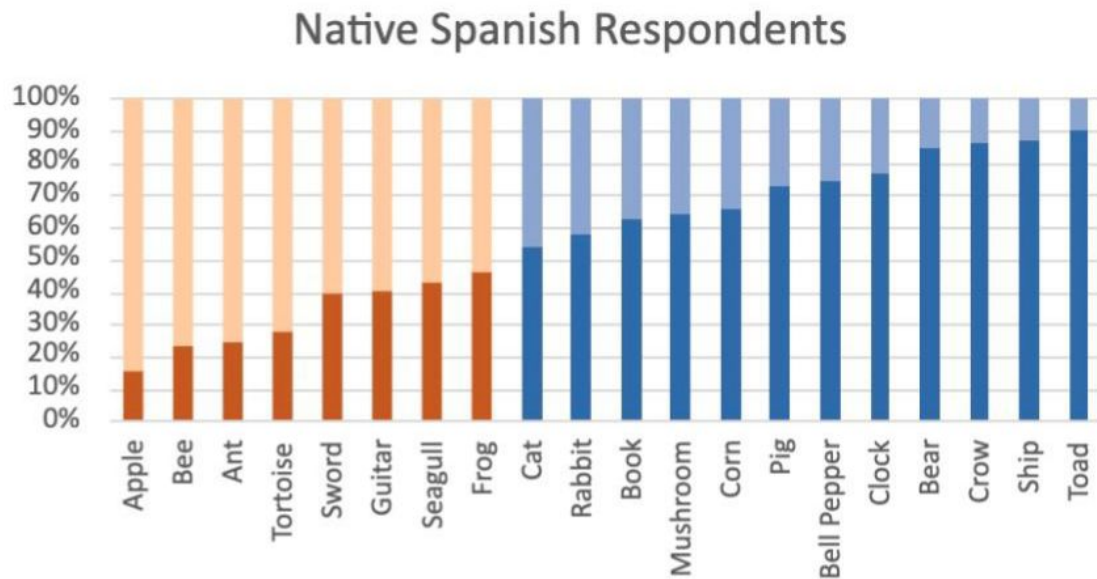
English segment: Avg. 49% female voice for natural products, avg. 60% male voice for artificial objects

Spanish segment: Avg. 45% female voice for natural products, avg. 61% male voice for artificial objects

English segment skips:  $4/23 = 17\%$

Spanish segment skips:  $6/78 = 7\%$

# The results



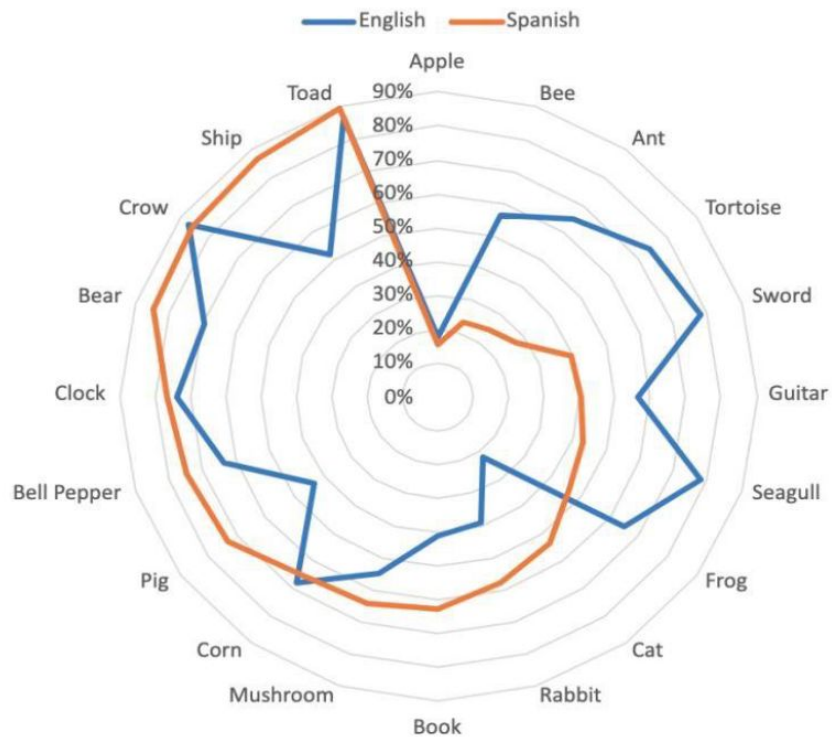
# The results

**AMBIGUOUS ZONE**



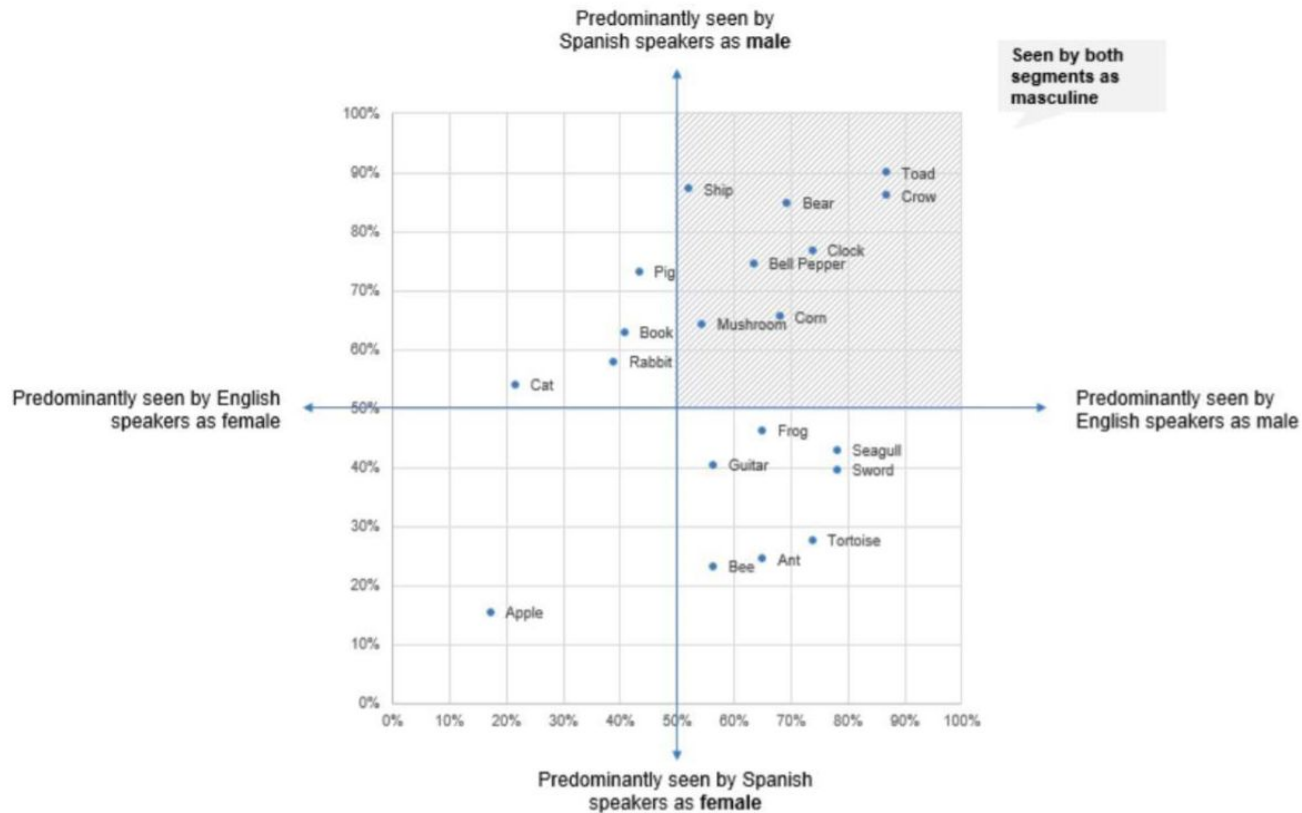
# The results

Sorted by perception of femininity by Spanish speakers





# The results



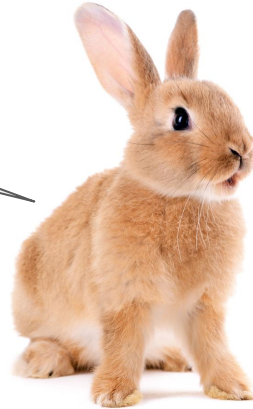
# We learn in disagreement



**“Colour”, “deep red”**  
**“Sweetness”**  
**“Elegance”**  
**“Garden of Eden”**

# Individual or cultural factors - or linguistic relativism?

"I chose a male voice for the rabbit, because it reminded me of the Rabbit from Winnie the Pooh."



"I chose male voice because of Peter Rabbit."



# Individual or cultural factors - or linguistic relativism?



21.7% female voice

60.5% female voice



"cutting/violence/desire for strength"

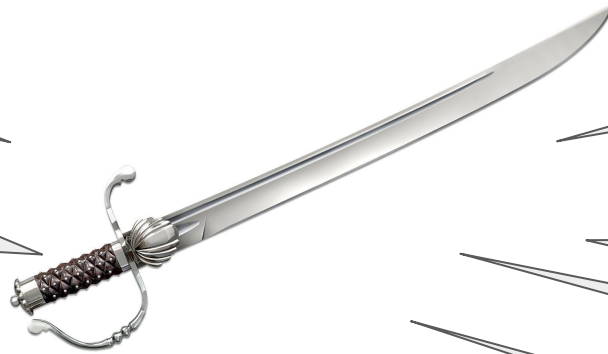
"a thin and sensitive object of care"

"a device of violence and control, these are more male characteristics."

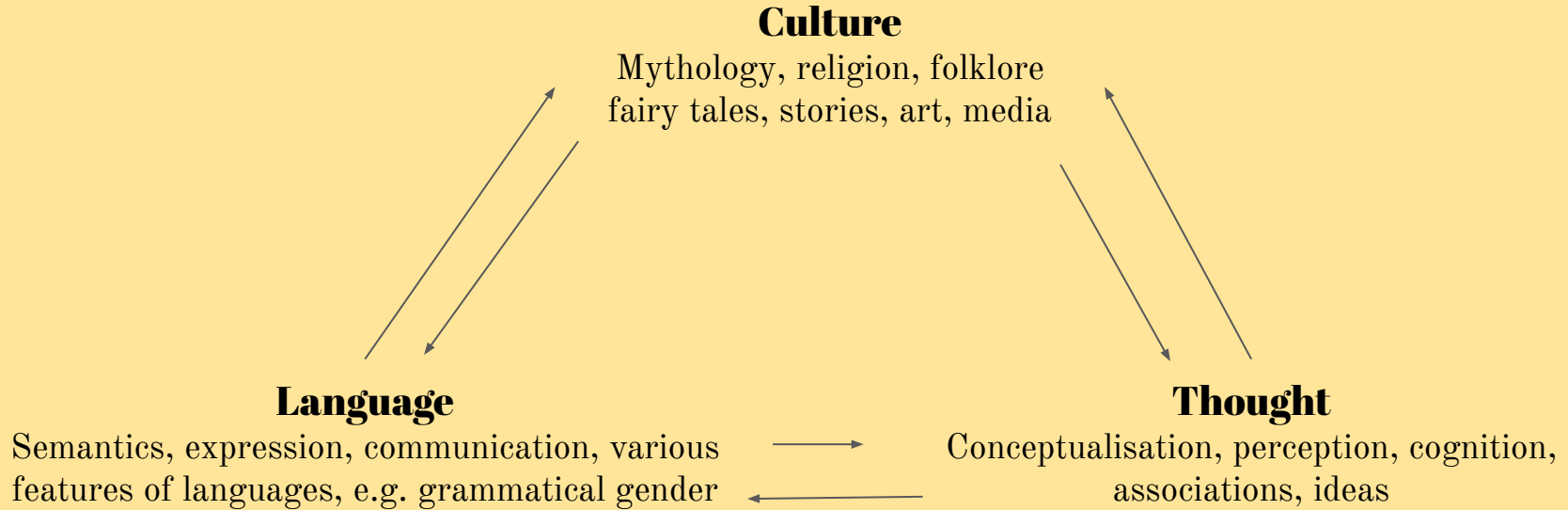
"Fine"

"Elegant"

"Delicate"



# The chicken or egg



# Similar studies

## German keys and Spanish bridges

Some examples of their findings include the German masculine keys, being described as “hard, heavy, jagged, metal, serrated, and useful” (Boroditsky, Schmidt, and Phillips 2003, 70) and Spanish feminine keys being described as “golden, intricate, little, lovely, shiny, and tiny” (Boroditsky, Schmidt, and Phillips 2003, 70).

Boroditsky, Lera, Lauren A. Schmidt, and Webb Phillips. 2003. “Sex, Syntax, and Semantics.” In *Language in Mind: Advances in the Study of Language and Thought*, edited by Dedre Gentner and Susan Goldin-Meadow, 61-79. [https://web.stanford.edu/class/linguist156/Boroditsky\\_ea\\_2003.pdf](https://web.stanford.edu/class/linguist156/Boroditsky_ea_2003.pdf)

## Gender in Art

They also found connections between grammatical gender and depictions of abstract ideas as personified gender in art (Segel and Boroditsky 2011), concluding that their analysis could “predict the gender of personification in art 78% of the time” (Segel and Boroditsky 2011, 2).

Segel, Edward and Lera Boroditsky. 2011. “Grammar in Art.” *Frontiers in Psychology* 1: 244. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3153848/>

# Conclusion

## **Does language affect thought?**

Difficult to prove, but one may argue for/against. Depends on who you ask - and what you are asking: what is thought? what is “affecting”; “impacting”?

## **Did Spanish-speakers choose voices in congruence with grammatical gender?**

Yes, they did. This study shows that they conceptualize gender according to features of language. However, it cannot be ruled out that they just chose voices that matched the captions of the images.

## **Is there such a thing as universal gender conceptualization?**

This study did not find any convincing evidence for a male-artificial/female-natural object categorisation.

## **Is grammatical gender a bad thing?**

It is not inherently bad nor good, may serve as a “metaphorical bridge”

