Delayed disambiguation when L2 differs from L1 in argument alignment and word order

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INTRODUCTION: AMBIGUITY

The man saw the woman with binoculars.

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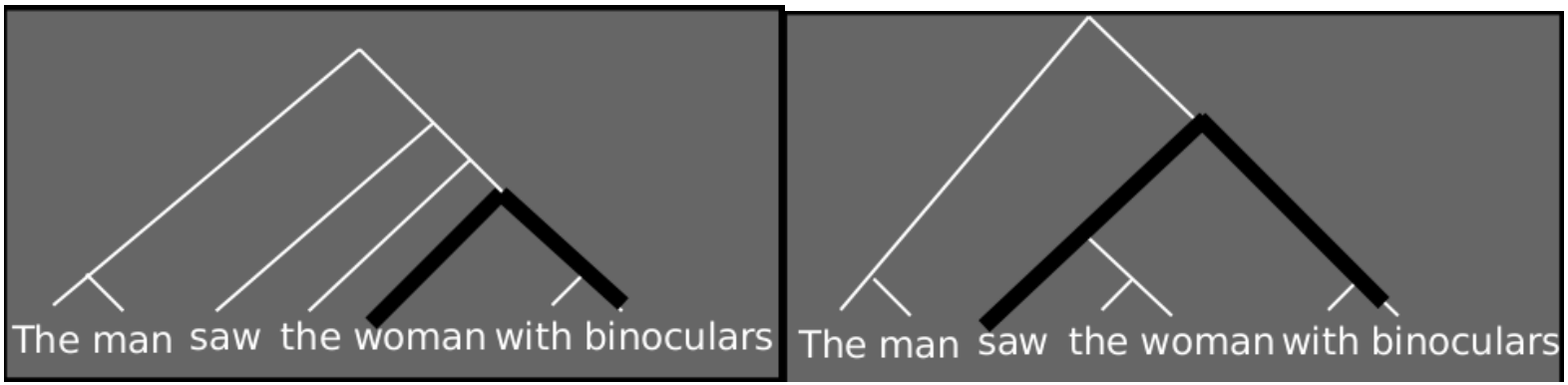

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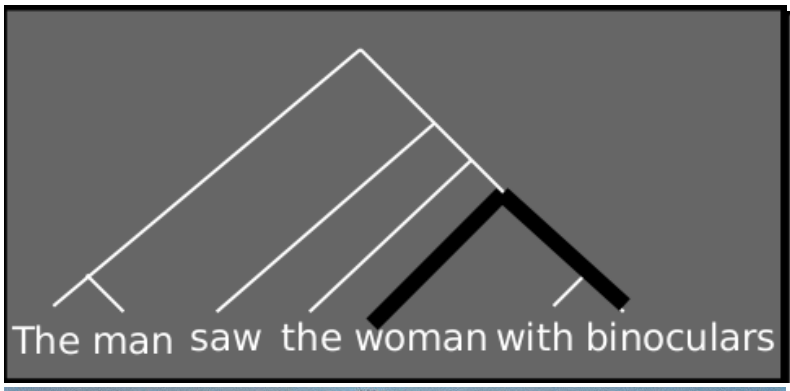

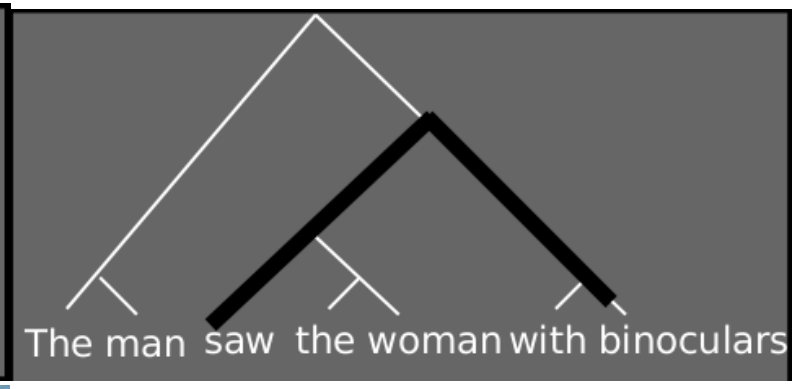

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Ambiguities are solved by **default mechanisms** like
Subject-first (Bever, 1970),
Attachment preferences (Frazier & Fodor 1978),
Prominence scales (Bornkessel & Schelewsky, 2006)... favouring simplest structures.

STRUCTURE $\Leftrightarrow$ MEANING

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Manipulating Grammatical Gender, for instance, disambiguation towards non-preferred RC.

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World knowledge can affect structure to meaning mapping.

When ambiguity is solved towards a non-preferred structure, the incrementally built structure has to be reanalysed.

AMBIGUITY IN BASQUE

Plural demonstratives: hauek=these horiek=these-those haiek=those

They are equal for Subjects and Objects in Basque:

(1) Neska hauek Mikel ikusi dute.

'These girls have seen Mikel'

(2) Neska hauek Mikelek ikusi ditu.

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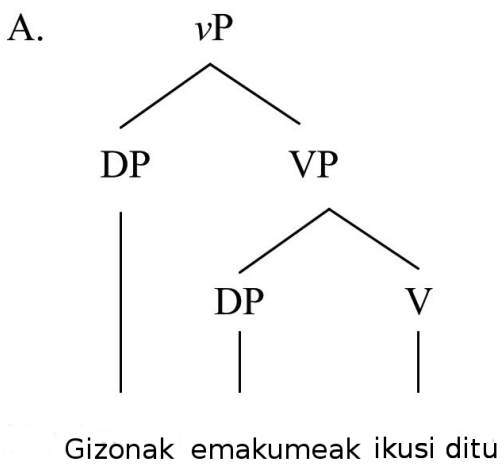
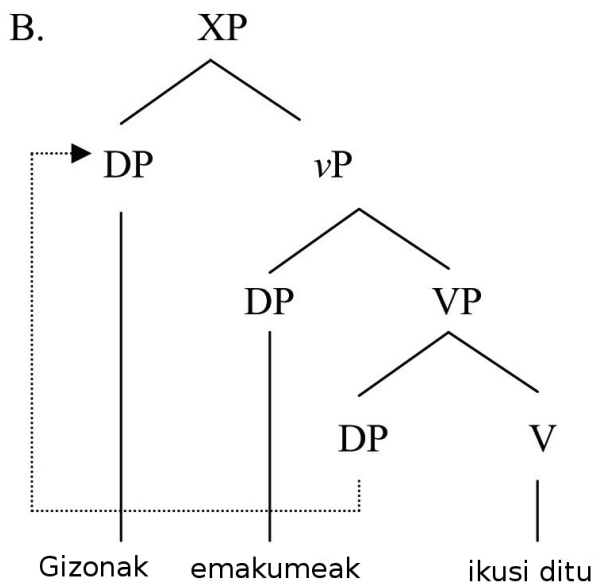
SINTACTIC STRUCTURE: SOV vs. OSV





for neurophysiological of word order evidence see Erdocia et al., 2009

BASQUE vs. SPANISH

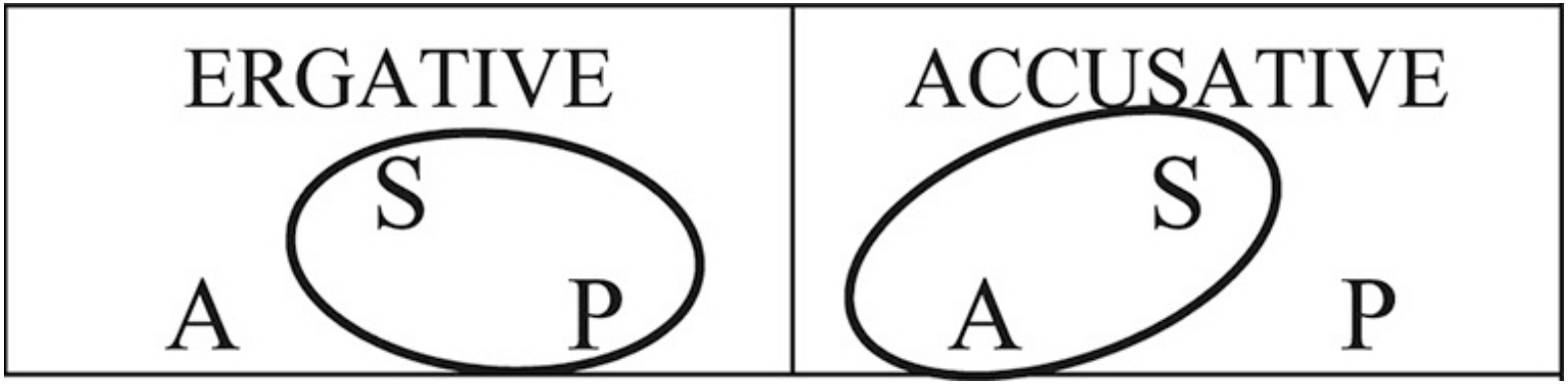
BASQUE

Canonical SOV (OV)
ERGATIVE-ABSOLUTIVE
Neskak (A) mutila (P) ikusi du.
Mutila (S) etorri da.

SPANISH

Canonical SVO (VO)
NOMINATIVE-ACCUSATIVE
La chica (A) ha visto al chico (P).
La chica (S) ha venido.

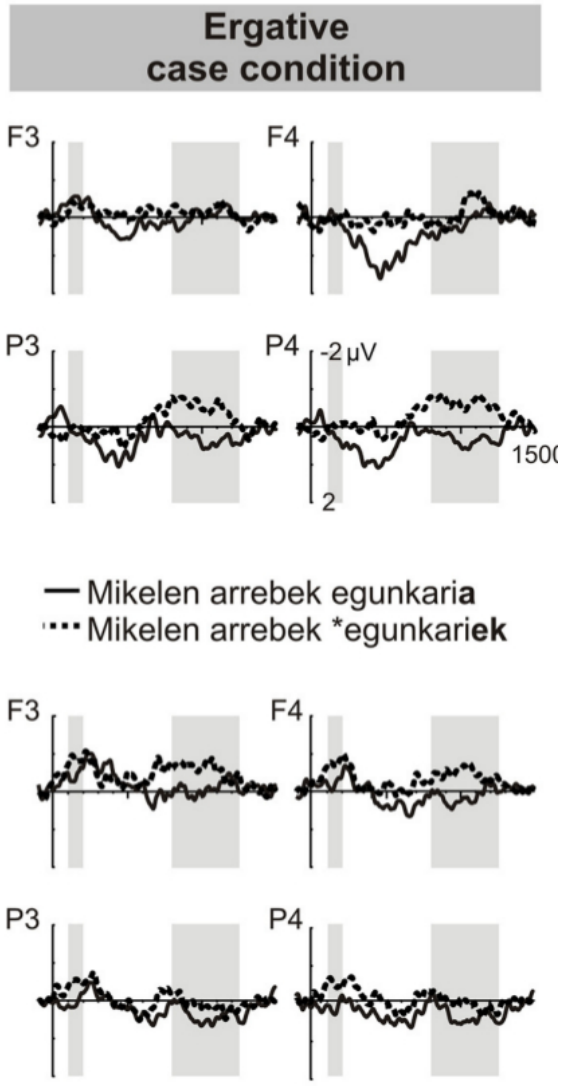
The girl (A) has seen the boy (P).
The girl (S) has arrive.



Spanish speakers processing Basque do not reach native-likeness

ERGATIVE PROCESSING Diaz et al., 2016

Non-natives: no-P600



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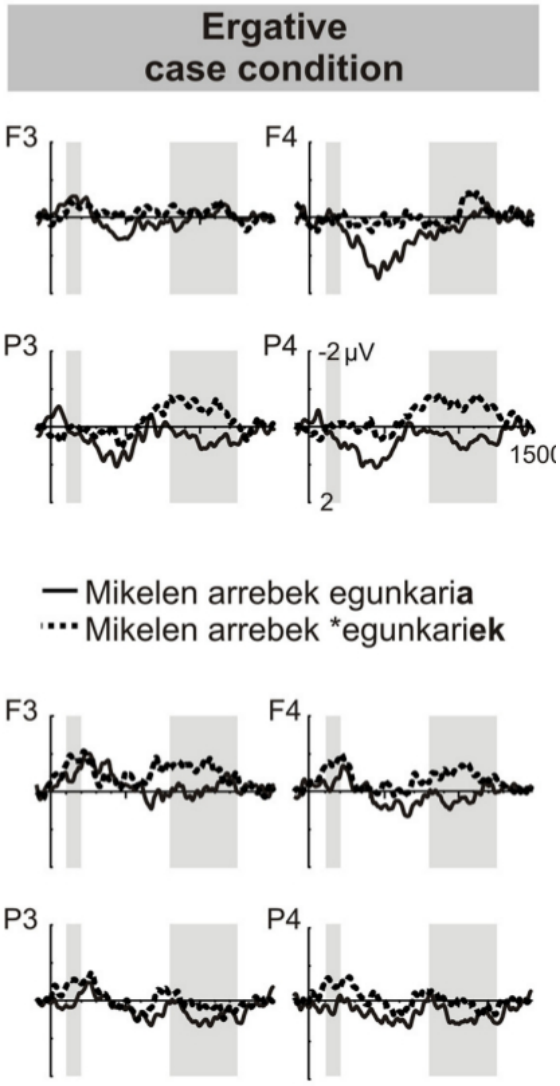
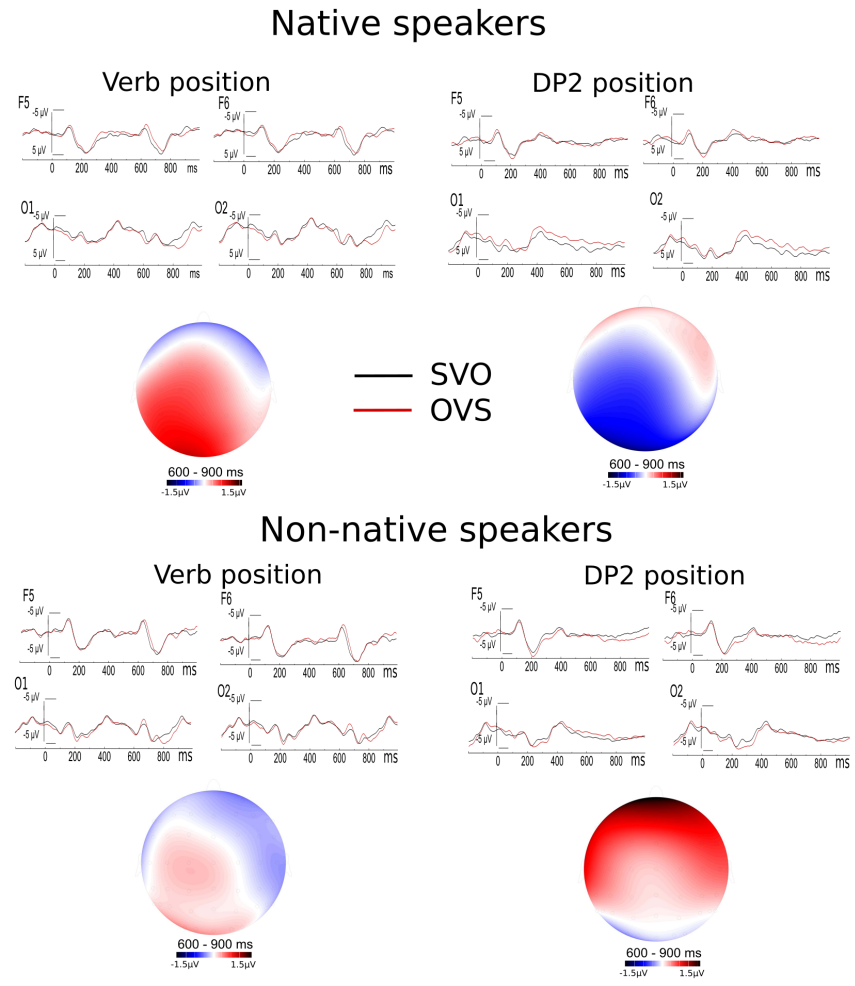


VO-OV PROCESSING Erdocia & Laka, 2018

Natives: Negativity; Non-Natives: Positivity



EXPERIMENT

Evidence from Artificial (Friederici et al., 2002) and Natural (Rossi et al., 2003) language learning shows that non-natives can reach *native-like* processing (see Steinhauer & Drury, 2009).

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Research Question

We wanted to see whether **non-native speakers** process temporally ambiguous sentences that disambiguated towards a non-preferred non-canonical word order **like native speakers** do, when the disambiguation is forced by shared **world knowledge**.

EXPERIMENT: Materials

2 Conditions. 32 sentences per condition.

SOV	Otso	hauek	ardi	horiek	jan	dituzte
	Wolf	*these*	*sheep*	*those*	*eat*	*have*

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	Wolf	*these*	*sheep*	*those*	*eat*	*have*
OSV	Ardi	hauek	otso	horiek	jan	dituzte
	Sheep	*these*	*wolf*	*those*	*eat*	*have*

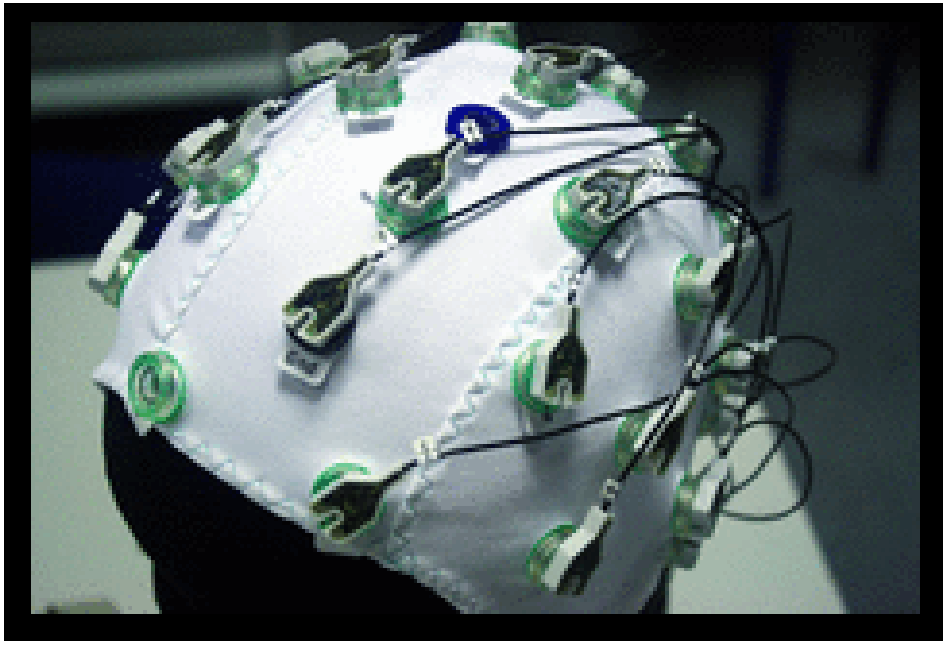
'These wolves have eaten those sheep'

Procedure

ACTICAP: 32 channels

Reading experiment.

RSVP: 350ms. + 250ms. ISI.

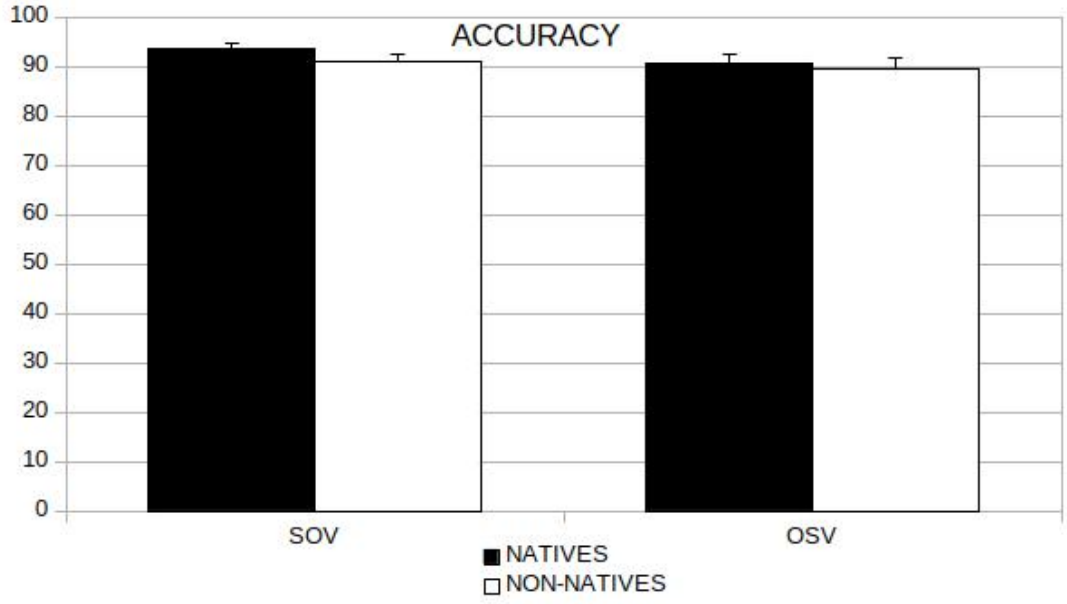


Participants

- 20 Highly Proficient L2 speakers of Basque
  - L1-Spanish
  - AoA = 3 y.o.
  - School in Basque
- 19 Native Speakers of Basque.

TASK: Acceptability Judgment Task

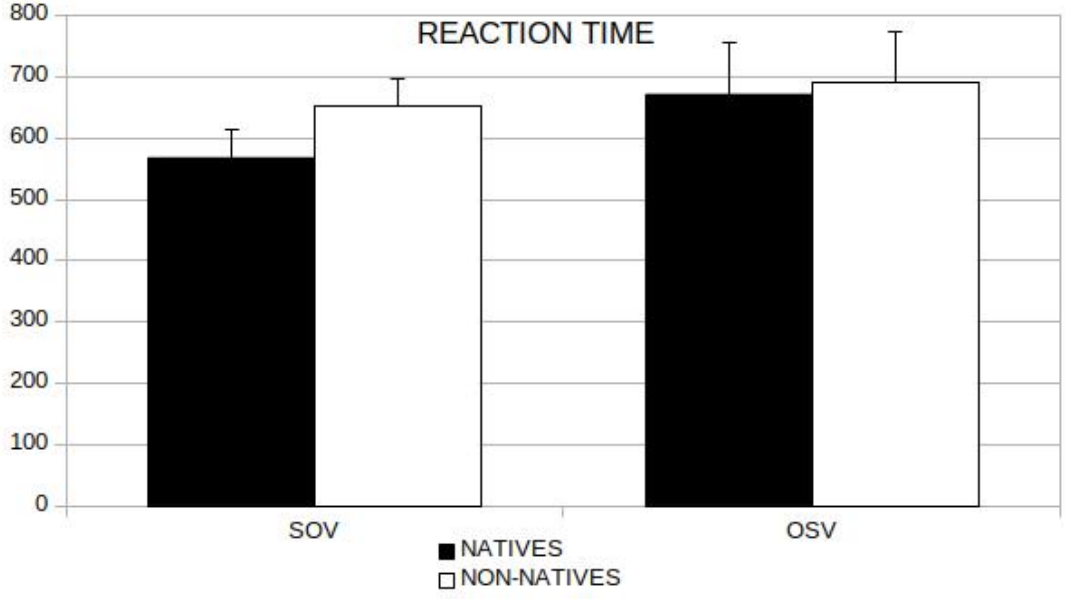
BEHAVIOURAL RESULTS



Accuracy:

No group effect

No interaction



Reaction times:

SOV faster than OSV.

No group effect

No interaction.

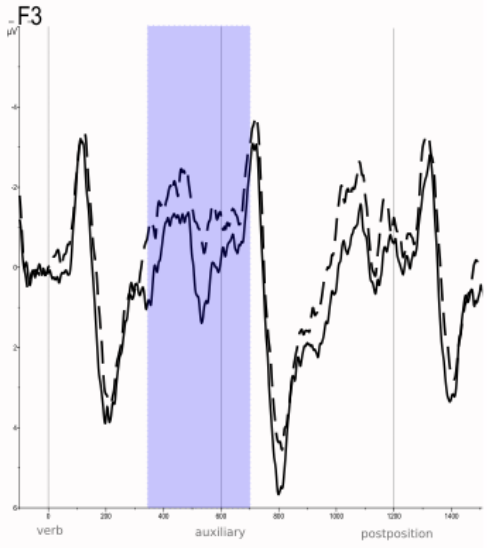
ERP RESULTS

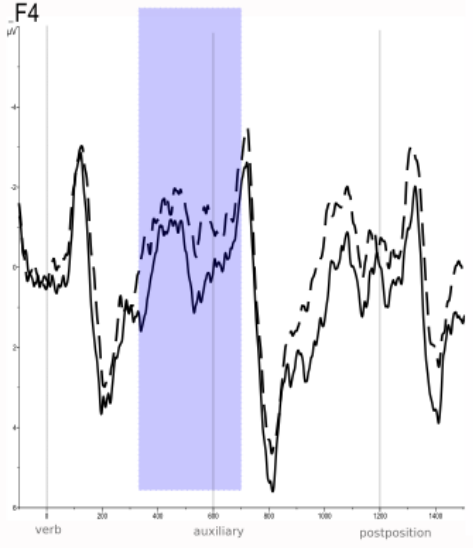
VERB POSITION: NATIVES: 350-400 ms. WOxAP F(2,36) = 5.151; P(HF)=0.025. 500-600 ms. WO F(1,18)=5.515; P(HF)=0.03.
NON-NATIVES: NS
AUX POSITION: NATIVES: NS. NON-NATIVES: 500-700 ms. WOxAPxH F(2,38) = 3.741; P(HF)=0.049

Natives

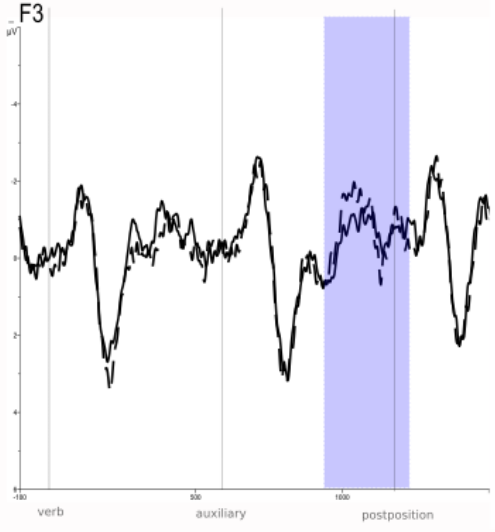
sov ——

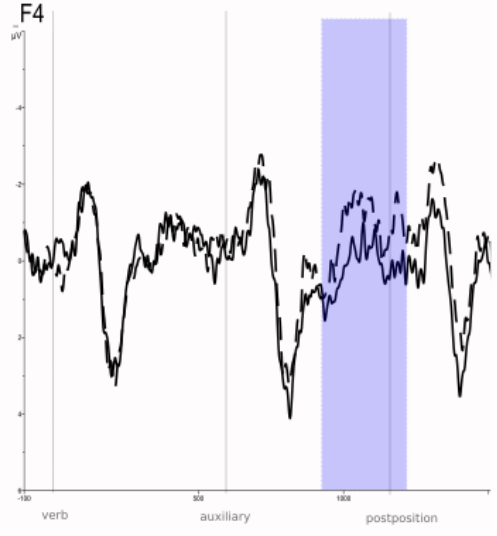
osv ·····





Non-natives





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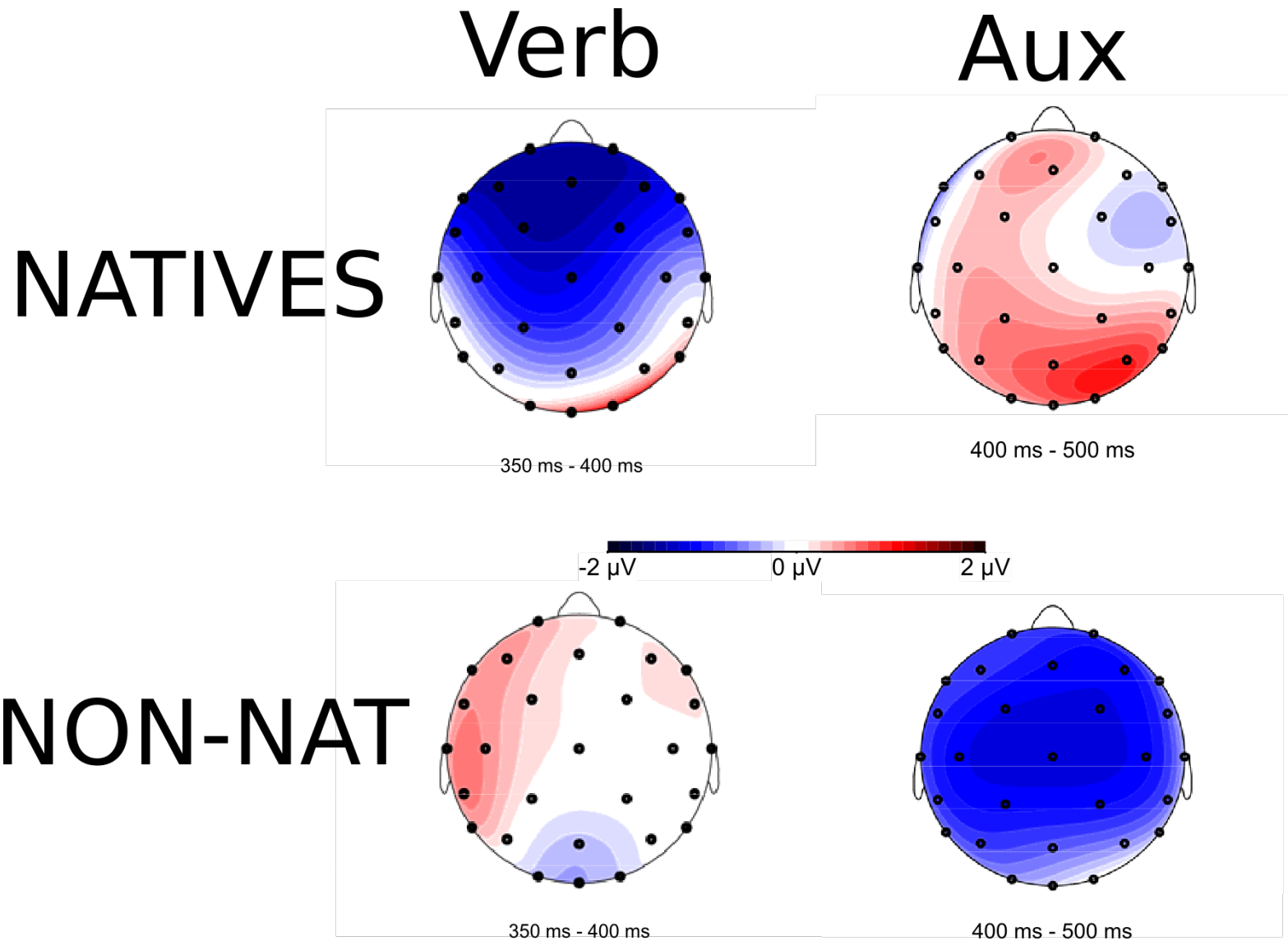

VERB POSITION: 300-500 ms. ORDERxAPxGROUP F(2,74)=3.964; P(HF)=0.046
AUX POSITION: 400-450ms. Midline, ORDERxGROUP F(1,37)=3.306; P(HF)=0.077

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- Shared world knowledge does not facilitate syntactic processing of non-preferred word order for non-native speakers.
- Re-structuring the preferred structure in a second language that differs in **Head Placement** and **Argument Alignment** is difficult even at highest levels of proficiency.

Welsh implicit learning. Lesson 2:

DIOLCH - ESKERRIK ASKO

Remember:

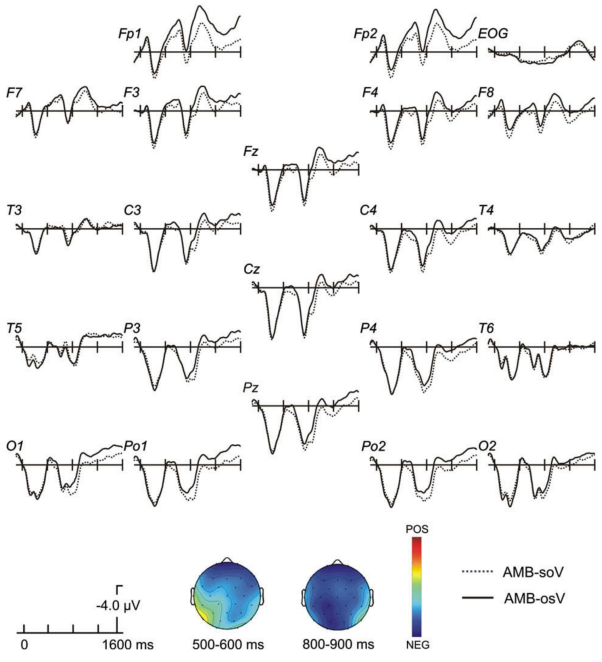
Croeso

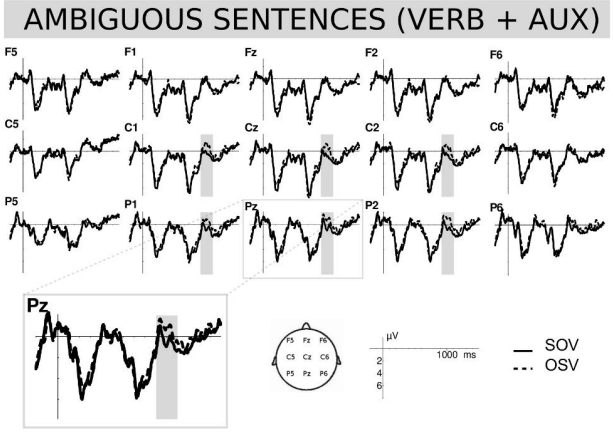
Paca

Covfefe (better not)

eman ta zabal zazu
Universidad del País Vasco
Euskal Herriko Unibertsitatea
GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN
The Bilingual Mind

MORE RESULTS





Erdocia et al., 2009, 2014

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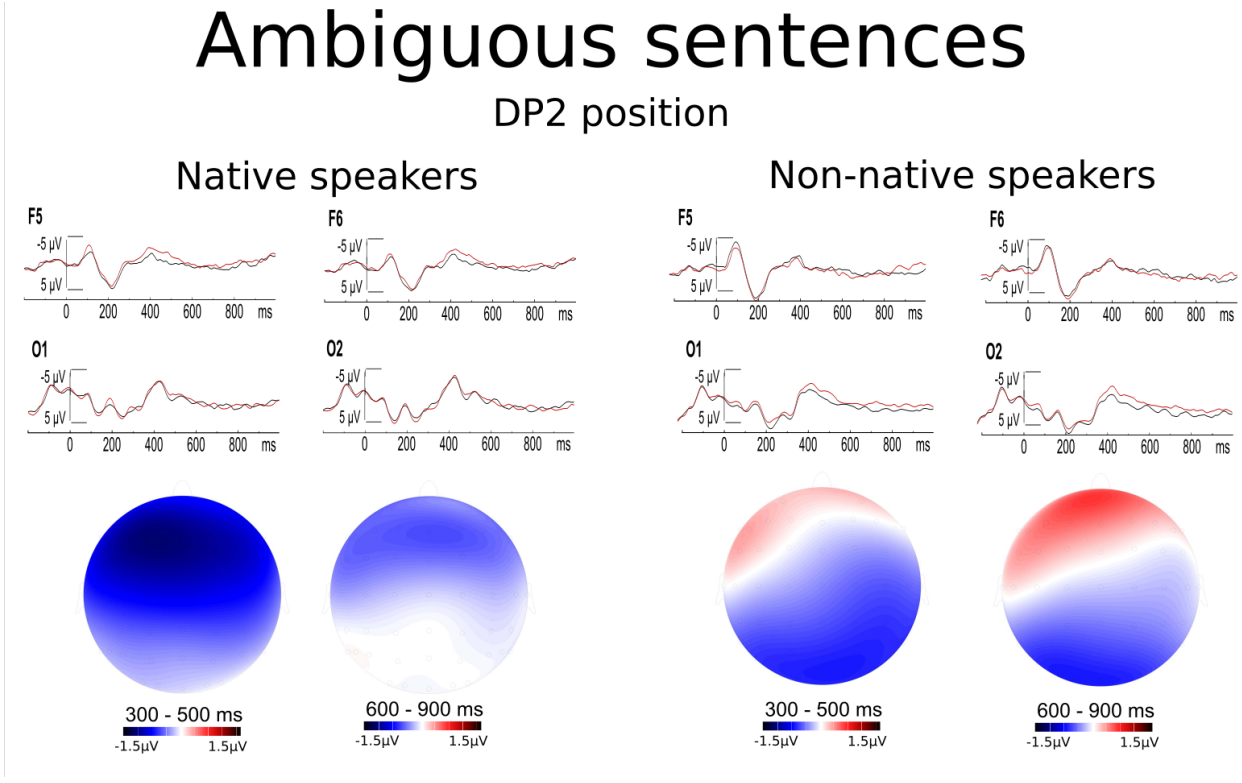

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