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

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The man saw the woman with binoculars.
INTRODUCTION: AMBIGUITY

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INTRODUCTION: RESOLUTION

Ambiguities are solved by **default mechanisms** like

*Subject-first* (Bever, 1970),

*Attachment preferences* (Frazier & Fodor 1978),

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favouring simplest structures.

STRUCTURE ⇔ MEANING
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Subject-*before*-Object  
Object-*before*-Subject

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

Subject-before-Object Object-before-Subject

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World knowledge can affect structure to meaning mapping.
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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.
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.
   'Mikel has seen these girls’
AMBIGUITY IN BASQUE

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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
Spansh speakers processing Basque do not reach native-likeness

**ERGATIVE PROCESSING** Diaz et al., 2016
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**VO-OV PROCESSING** Erdocia & Laka, 2018
Natives: Negativity; Non-Natives: Positivity
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  horieken  jan  dituzte
     Wolf  these  sheep  those  eat  have
EXPERIMENT: Materials

2 Conditions. 32 sentences per condition.

'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 $F(2,38) = 3.741; P(HF)=0.049$
ERP RESULTS

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
CONCLUSIONS

- Very highly proficient bilinguals, *almost natives*, showed a delayed negativity when disambiguating temporally ambiguous sentences towards a non-preferred word order,
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- because of the differences between L1 and L2 of the participants:
  - Basque Ergative, heads follow complements (OV)
  - Spanish Nominative, heads preceded complements (VO)
- In line of our previous research, L2 speakers do not reach the native-like processing when L1 and L2 differ syntactically.
- 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.
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Welsh implicit learning. Lesson 2:

**DIOLCH - ESKERRIK ASKO**

*Remember:*
Croeso
Paca
Covfefe (better not)
MORE RESULTS

Erdocia et al., 2009, 2014
Ambiguous sentences
DP2 position

Native speakers

Non-native speakers

unpublished