

Bilinguals processing case morphology: an ERP study

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Introduction

Several ERP studies on native versus non-native language processing argue that native/nonnative differences result either from language proficiency (Rossi et al., 2006), age of acquisition (AoA) (Weber-Fox & Neville, 1996) or language transfer (Kotz, 2009).

The relative impact of these and other factors in bilingual processing is still not well understood. Here we present the results of an Event-Related Potentials (ERP) study on case morphology in Basque where native/nonnative differences obtain at high levels of overall

language proficiency and early AoA only in one of the two conditions tested. We conducted a study where the experimental conditions were ergative case (1ab), absent in Spanish, L1 of the bilinguals, and dative case (2ab), shared by both Spanish and Basque.

Methods

23 L1Basque / L2Spanish and 23 highly proficient L1Spanish/L2Basque (AoA=3yrs) bilinguals participated in the study. ERPs (59 electrodes, impedance kept below 5kOhms, digitalization rate 250 Hz) were registered while the participants were reading grammatical and ungrammatical sentences (word-by-word) and performing a grammaticality judgment task.

1(a) Liburua ekarri dio neska-ri goizean **irakasle-ak** klasera.
book brought girl-DAT morning teacher-ERG classroom-to
'This morning the teacher brought the girl the book to the classroom.'
1(b) Liburua ekarri dio neska-ri goizean ***irakasle-a** klasera.
book brought girl-DAT morning teacher-ABS classroom-to

Materials

In the ungrammatical (1b) the subject of the sentence (**irakaslea**) lacks ergative case mark (-k), present in 1(a). In 2(b) the indirect object (**neska**) misses a dative case mark (-ri), yielding ungrammaticality.

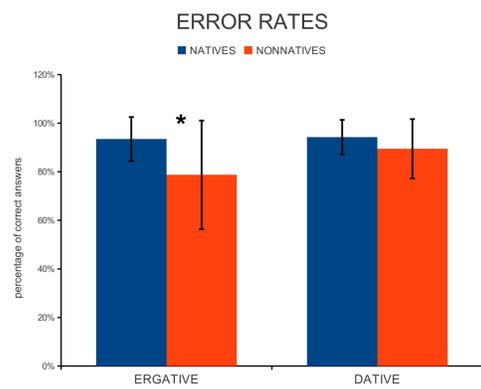
2(a) Liburua ekarri dio irakasle-ak goizean **neska-ri** klasera.
book brought teacher-ERG morning girl-DAT classroom-to
'This morning the teacher brought the girl the book to the classroom.'
2(b) Liburua ekarri dio irakasle-ak goizean ***neska-Ø** klasera.
book brought teacher-ERG morning girl-ABS classroom-to

Basque and Spanish

case morphology

	ergative	dative
Basque	+	+
Spanish	-	+

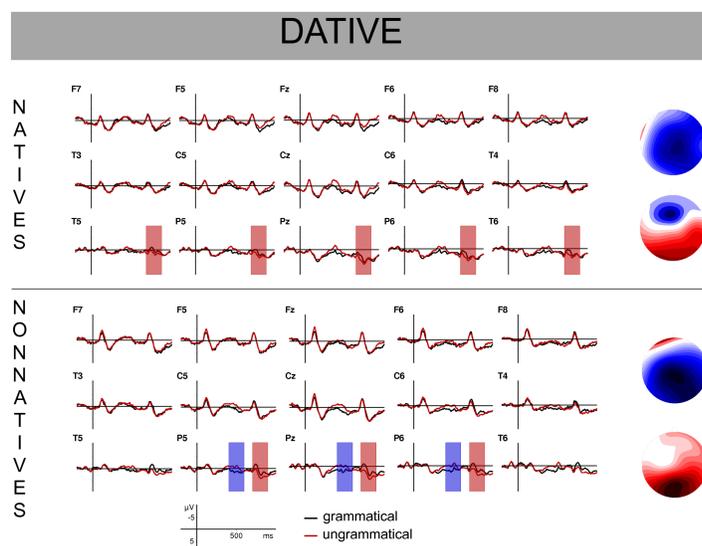
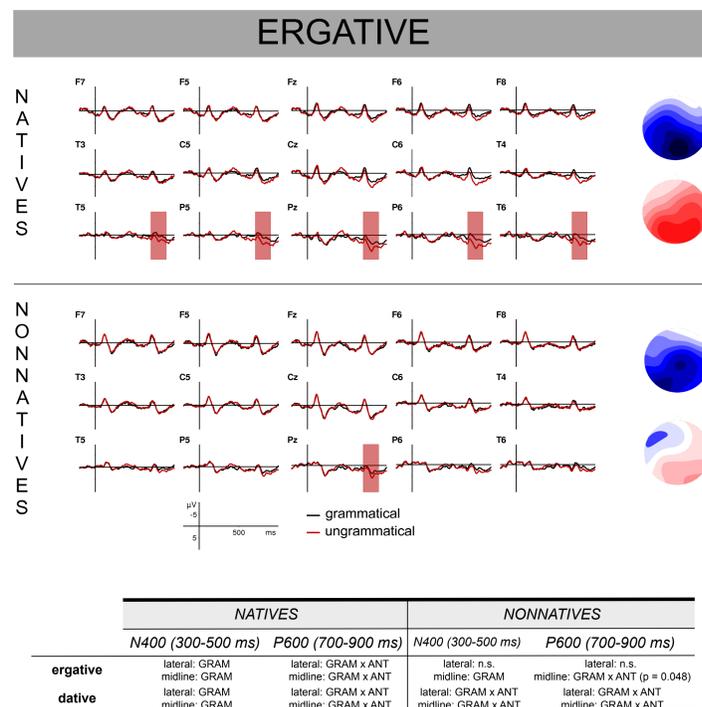
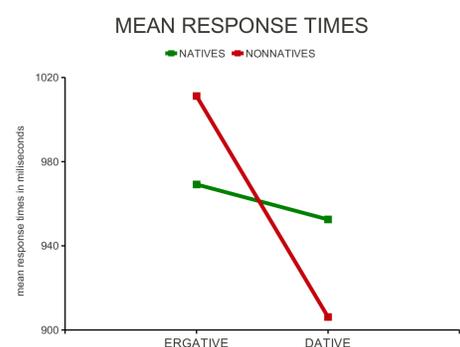
Results



STATISTICS

ERROR RATE
COND x GROUP: $F(1,44) = 18.04, p < 0.001$

RESPONSE TIMES
COND x GROUP: $F(1,44) = 8.44, p < 0.01$



Discussion & Conclusions

Results show that both groups behaved differently in the ergative case condition, but similarly when processing dative case. Nonnatives displayed a smaller P600 component and made more errors than natives during the grammaticality judgment task regarding ergative case, whereas a similar N400-P600 pattern and similar behavioral measures obtained for dative case violations in both groups.

These results indicate that native and non-native processing differs for the case absent in the bilinguals' L1, but not for the case present in L1. They suggest that morphosyntactic processing might involve transfer from L1 when significant grammatical differences between L1 and L2 are at play, even at high proficiency and early AoA.

References

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