



The Impact of Grammatical Voice And Subject Noun Animacy on Verb Processing



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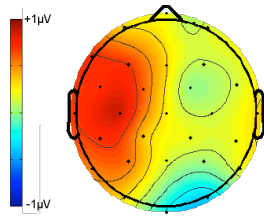
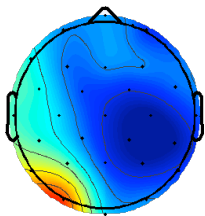
Results

Grammatical Voice

Active Voice: The gardener/juice *had soaked*...
Passive Voice: The sailor/carpet *was soaked*...

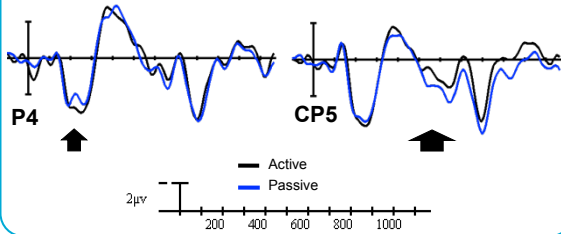
Critical Verb

Critical Verb



200-250msec

600-800msec



2µV

— Active
— Passive

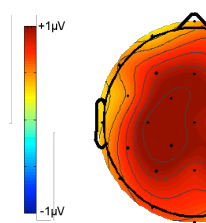
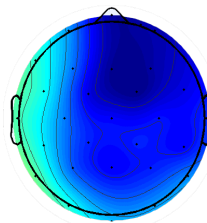
200 400 600 800 1000

Subject Animacy

Animate: The *gardener*... ...had/was *soaked*...
Inanimate: The *juice*... ...had/was *soaked*...

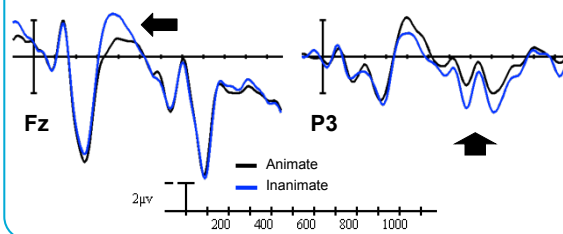
Subject NP

Critical Verb



300-450msec

600-800msec

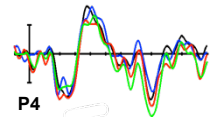


2µV

— Animate
— Inanimate

200 400 600 800 1000

Voice X Subject Animacy

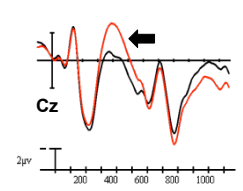


P4

— Animate Subj/Active
— Animate Subj/Passive
— Inanimate Subj/Active
— Inanimate Subj/Passive

CP5

Semantic Anomaly



Cz

2µV

200 400 600 800 1000

Introduction

The non-canonical passive voice, in which the grammatical subject is assigned the Patient role, has been shown to increase thematic role assignment errors (Ferreira, 2003). Non-canonical argument ordering has also been shown to increase reading times (Traxler, et al. 2002) an indication of increased processing costs.

However, this non-canonical argument ordering penalty has been shown to be attenuated when the Patient argument is inanimate (Traxler et al., 2002, Trueswell et al., 1994) and several ERP studies have suggested that animacy information is used rapidly during the assignment of thematic roles (Weckerly & Kutas, 1999; Frisch & Schlesewsky, 2001).

Our first aim was to identify the ERP correlates of passive voice processing costs incurred on the verb. Our second aim was to determine whether grammatical subject animacy modulated this processing cost. If animacy information guides thematic role assignment, inanimate grammatical subjects should facilitate passive processing, leading to a Grammatical Voice X Subject Animacy interaction

Methods

- 27 participants, age 18-24
- Plausibility judgment task
- Participants read 160 experimental sentences (40 per condition), 160 filler sentences, presented word-by-word (450ms presentation, 100ms ISI)
- Half of both experimental and filler sentences contained semantic anomalies.
- ERPs measured with 29 active tin electrodes, continuously sampled at 200 HZ with a bandpass filter of 0.01-40 Hz.

Conclusions

The passive related positivity appears to be neither the P345 nor the P600, based on its time-course and scalp distribution, respectively. This suggests a pattern of activation distinct from that previously reported for syntactically assigning or reassigning thematic roles. Animacy affected verb processing independently of thematic roles assignment. Instead, our data suggest Animacy Hierarchy (Aissen, 2003) based influences on both verb and verb argument processing.

References

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