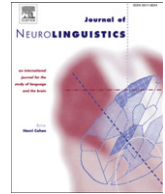




Contents lists available at SciVerse ScienceDirect

## Journal of Neurolinguistics

journal homepage: [www.elsevier.com/locate/jneuroling](http://www.elsevier.com/locate/jneuroling)



# Time reference teased apart from tense: Thinking beyond the present

Laura S. Bos<sup>a,b,c,\*</sup>, Olga Dragoy<sup>d,e</sup>, Laurie A. Stowe<sup>b,c</sup>, Roelien Bastiaanse<sup>b,f</sup>

<sup>a</sup> International Doctorate for Experimental Approaches to Language and Brain (IDEALAB), University of Groningen, PO Box 716, 9700 AS Groningen, The Netherlands

<sup>b</sup> Center for Language and Cognition Groningen (CLCG), University of Groningen, PO Box 716, 9700 AS Groningen, The Netherlands

<sup>c</sup> NeuroImaging Center (NIC) of the University Medical Center Groningen (UMCG), and the University of Groningen, PO Box 196, 9700 AD Groningen, The Netherlands

<sup>d</sup> Moscow Research Institute of Psychiatry, Potesnaya st. 3, 107076 Moscow, Russia

<sup>e</sup> National Research University Higher School of Economics, Myasnitskaya st. 20, 101000 Moscow, Russia

<sup>f</sup> University Medical Center Groningen (UMCG), PO Box 30001, 9700 RB Groningen, The Netherlands

## ARTICLE INFO

### Article history:

Received 12 June 2012

Received in revised form 9 October 2012

Accepted 10 October 2012

### Keywords:

Time reference

Tense

Discourse linking

ERP

P600

Periphrastic verbs

Auxiliary

## ABSTRACT

Reference to a time frame in which an event takes place can be done by verb inflection. If the time frame (past, present, future) is set by a temporal adverb, the verb inflection should correspond (yesterday he walked; today he walks). Temporal violations by simple verbs (single, lexical verbs inflected with tense) in the present tense and with present time reference elicit a P600 effect (Baggio, 2008; Dragoy, Stowe, Bos, & Bastiaanse, 2012). However tense does not always coincide with time reference; in languages such as Dutch and English, reference to the past can be established by using the present tense in the present perfect (e.g. 'he has eaten the cake'). The current study investigates whether the P600 effects described by Dragoy et al. and Baggio are caused by tense or time reference violations of the verb. In the context of a past adverb, ERP responses to auxiliaries in present tense with either congruent past time reference or incongruent non-past time reference were compared. The findings show that the P600 effect for violations of the temporal context is caused by the time reference of the complete verb form, rather than by the tense.

© 2012 Elsevier Ltd. All rights reserved.

\* Corresponding author. Center for Language and Cognition Groningen (CLCG), University of Groningen, PO Box 716, 9700 AS Groningen, The Netherlands. Tel.: +31 50363 9396; fax: +31 50 363 6855.

E-mail address: [l.s.bos@rug.nl](mailto:l.s.bos@rug.nl) (L.S. Bos).

1. Introduction

The use of verb morphology to express temporal relations has been widely studied in linguistics. Languages such as English and Dutch use verb inflections for both tense and aspect. *Tense* provides information about *when* an event happens/happened. More precisely, it contains information about the temporal relation, such as ‘simultaneity’ or ‘precedence,’ between the time interval of the event expressed through the verb morphology and the time of evaluation set by the context. The evaluation time can be, for example, the speech time (the time of the speaker’s context) or the time of the matrix clause event. *Aspect* further specifies temporal relations by providing information about the boundaries (beginning, end point) of a situation. It tells the listener whether the event is seen as completed or as ongoing (Comrie, 1976). There is a clear distinction between tense and time reference, both of which are characteristics of temporal relations. *Tense* is a morphological element within a finite (i.e. tense-inflected) verb, while *time reference* is a semantic feature of the event being described and is a characteristic of a verb complex as a whole. It is the combination of tense, aspect and context that specifies the time reference. The difference between tense and time reference becomes clearest when present tense is used in a construction that refers to the past, which is possible in Dutch, for example. This will be further elaborated in the current study.

The outline is as follows: In the introduction, more theoretical background on time reference will be provided. Then, findings from aphasia will be discussed that demonstrate that for agrammatic speakers reference to the past is selectively impaired. In agrammatic aphasia, the time reference deficit is irrespective of tense, because past time reference by a construction containing a present tense auxiliary is also impaired. The distinction between past and present seems also to exist for non-brain-damaged adults. An ERP study by Dragoy, Stowe, Bastiaanse, and Bos (2012) in healthy individuals showed differential responses to present and past time reference violations. This study does not reveal whether the differential neural responses for past vs. non-past reported in Dragoy et al. (2012) are due to tense morphology per se or to time reference. The aphasiological data would predict the latter. The goal of the current experiment is to investigate whether it is in fact tense or time reference which evoked the ERP effects in Dragoy et al. (2012).

1.1. Theoretical background on time reference and discourse linking

Tense and aspect can be expressed on a single lexical verb, called a ‘simple verb form,’ for example *writes*. If the verb form consists of an auxiliary plus a lexical verb, it is called a ‘periphrastic verb form,’ for example *has written* or *will write*, as illustrated in the Dutch sentences in (1) and (2). *Heeft*: ‘has’ and *gaat*: ‘will’ are both inflected for tense and agreement and are called *temporal auxiliaries*, because they are used for time reference.

(1)	De man the man	heeft has <sub>present tense</sub>	de brief the letter	geschreven. written <sub>past participle</sub>
	The man has written <sup>1</sup> the letter.			
(2)	De man the man	gaat will <sub>present tense</sub>	de brief the letter	schrijven. write <sub>infinitive</sub>
	The man will write the letter.			

<sup>1</sup> The meaning of the Dutch present perfect is closer to the English simple past than to the English present perfect, but to indicate that it is a periphrastic verb form, throughout this article the literal translation (e.g. ‘has written’) will be used.

Download English Version:

<https://daneshyari.com/en/article/911855>

Download Persian Version:

<https://daneshyari.com/article/911855>

[Daneshyari.com](https://daneshyari.com)