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The Processing of Events

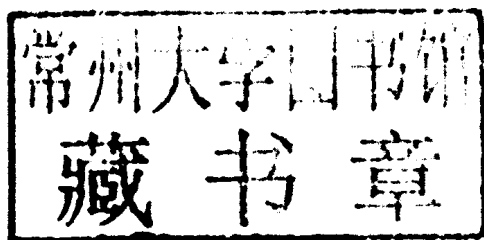
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The Processing of Events

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The Processing of Events

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Linguistik Aktuell/Linguistics Today (LA) provides a platform for original monograph studies into synchronic and diachronic linguistics. Studies in LA confront empirical and theoretical problems as these are currently discussed in syntax, semantics, morphology, phonology, and systematic pragmatics with the aim to establish robust empirical generalizations within a universalistic perspective.

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Volume 162

The Processing of Events
by Oliver Bott

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Abbreviations and symbols

#	semantically deviant sentence	DRT	discourse representation theory
*	clearly unacceptable sentence	DRT/EC	semantic framework combining DRT and EC
?	marked sentence	e_0, \dots, e', \dots	events
[\pm ADDTO]	feature expressing whether a verb introduces a path or not	EC	event calculus
[\pm DUR]	feature expressing whether a verb is durative or not	EEG	electroencephalography
[\pm SQA]	specified quantity feature	ELAN	early left anterior negativity in the ERPs
[\pm PERF]	perfectivity feature	ERP	event related potentials
α	conventional significance level	f_0, \dots, f', \dots	fluents
\exists	existential quantifier	F_1	F value of the by subjects ANOVA
\forall	universal quantifier	F_2	F value of the by items ANOVA
λ	lambda operator	fMRI	functional magnetic resonance imaging
\neg	negation operator	IAIH	incremental aspectual interpretation hypothesis
\rightarrow	conditional	IP	inflection phrase
\leftrightarrow	biconditional	K Ω	kilo ohm
\vee	disjunction	LAIH	late aspectual interpretation hypothesis
\wedge	conjunction	LAN	left anterior negativity in the ERPs
acc.	accomplishment	LDH	lexical disambiguation hypothesis
ach.	achievement	LPH	lazy parsing hypothesis
act.	activity	M350	an MEG component
AdvP	adverbial phrase	MEG	magnetencephalography
AEH	aspectual enrichment hypothesis	ms	milliseconds
AKTIONSART	aktionsart feature	MSE	mean squared error
AMF	anterior midline field, a MEG component	MT+	brain region selectively activated by motion
ANOVA	(repeated measures) analysis of variance	μV	micro volt
AP	adjective phrase	N	number of participants
ATSH	abstract type shifting hypothesis	N400	negative ERP component peaking around 400ms
AUH	aspectual underspecification hypothesis	NMUH	post stimulus non monotonic update hypothesis
CI	confidence interval	NP	noun phrase
CLLS	constraint language for lambda structures	obj.	direct object
CP	complementizer phrase	OVAS	object verb adverbial subject
CVPH	complete verb phrase hypothesis	p	word order significance level
DP	determiner phrase		
DRS	discourse representation structure		

P(A B)	conditional probability of A given B	SRH	syntactic reanalysis hypothesis
P100	ERP component	std.	standard deviation
P300	ERP component	subj.	subject
P600	positive ERP deflection between 500–900ms post stimulus	SVAO	subject verb adverbial object word order
PH	planning hypothesis	SVOA	subject verb object adverbial word order
pl.	plural	t_1	t value of the by subjects paired t-test
PP	prepositional phrase	t_2	t value of the by items paired t-test
PPH	probabilistic parsing hypothesis	TENSE	tense feature
PROG	progressive operator	TP	temporal perspective feature
PROLOG	logic programming	VP	verb phrase
pSTS	posterior superior temporal sulcus	WebExp2	java toolbox for conducting web-based experiments
RT	reading/reaction time		
sem.	semelfactive		
sing.	singular		

CHAPTER 1

Introduction

Human language understanding has a very remarkable property. Seemingly effortlessly, we mentally structure the plot of the incoming linguistic material, by encoding and ordering events and actions in our mental construction of time. This is astonishing because the computation of the temporal profile of a described situation rests upon the integration of tense, grammatical aspect and lexical aspectual information as well as world knowledge and information from preceding discourse. This interplay of information at multiple linguistic and extralinguistic dimensions makes temporal processing an excellent test case for investigating semantic interpretation on a supralexical level. This book is about the cognitive mechanisms involved in this construction process during language perception.

The cognitive notion of time as it is reflected in our linguistic categories is only indirectly connected to physical time in its Newtonian representation as a dimension comprising an infinite number of instants corresponding to the real numbers. In contrast, mental time involves the construction of a cohesive representation of ontological primitives like processes, states and events by means of a whole range of relations like precedence, causality, and so forth. Thus, there is a discrepancy between the external and our individual representations of time. Linguistic theory has a lot to offer concerning the latter. Interestingly, crosslinguistic studies on tense and aspect show that although there is variation between languages in terms of how they encode temporal categories and relations, the temporal concepts underlying these varying systems seem to be universal (Dahl 1985; Smith 1991). Moreover, studies on the ontogenesis of temporality in language have shown that English speaking children learn the progressive as their first inflectional form without making stativity-errors at any stage of acquisition (Brown 1973, p. 324–328). That is, children learning English never say things like *I am liking you* indicating that from the very beginning they cognitively make a distinction between state predicates and non-statives. These findings suggest that the encoding of events in language directly reflect fundamental ontological distinctions between event types. Psychological studies, on the other hand, have shown that event perception can be conceived of as a fundamental cognitive capacity analogous to object perception (Zacks & Tversky 2001).

Although there is a rich theoretical literature on temporality in language, there are only very few psycholinguistic studies on the processing of eventualities. This is