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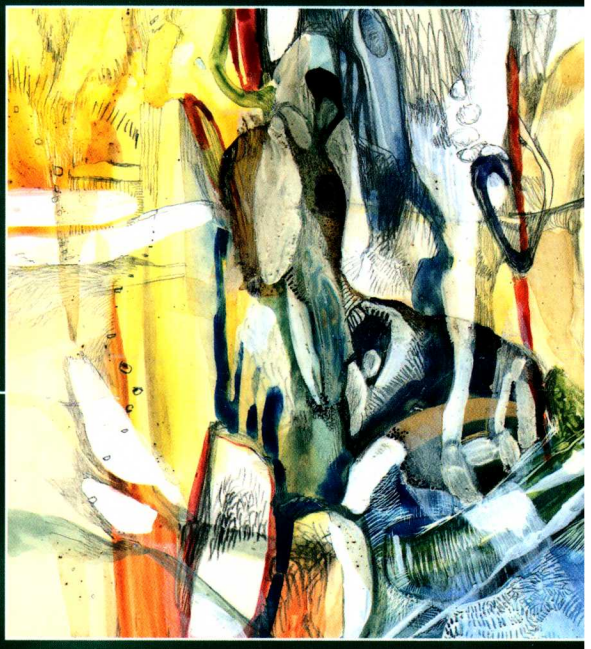
Event Representation in Language and Cognition



Edited by
Jürgen Bohnemeyer
and Eric Pederson

CAMBRIDGE

Event Representation in Language and Cognition

Edited by

Jürgen Bohnemeyer

University at Buffalo, The State University of New York

and

Eric Pederson

University of Oregon

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CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org
Information on this title: www.cambridge.org/9780521898348

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First published 2011

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data
Event representation in language and cognition / edited by Jürgen Bohnemeyer and
Eric Pederson.
p. cm. – (Language, culture, and cognition)
Includes bibliographical references and index.
1. Semantics. 2. Grammar, Comparative and general – Syntax.
3. Events (Philosophy) I. Bohnemeyer, Jürgen, 1965– II. Pederson, Eric.
III. Title. IV. Series.
P325.E97 2010
401′.43 – dc22 2010041512

ISBN 978-0-521-89834-8 Hardback

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Event Representation in Language and Cognition

Event Representation in Language and Cognition examines new research into how the mind deals with the experience of events. Empirical research into the cognitive processes involved when people view events and talk about them is still a young field. The chapters by leading experts draw on data from the description of events in spoken and signed languages, first and second language acquisition, co-speech gesture and eye movements during language production, and from non-linguistic categorization and other tasks. The book highlights newly found evidence for how perception, thought, and language constrain each other in the experience of events. It will be of particular interest to linguists, psychologists, and philosophers, as well as to anyone interested in the representation and processing of events.

JÜRGEN BOHNEMEYER is Associate Professor of Linguistics at the University at Buffalo, The State University of New York. He is the author of *The Grammar of Time Reference in Yukatek Maya* (2002).

ERIC PEDERSON is Associate Professor of Linguistics at the University of Oregon. He is the co-editor (with Jan Nuyts) of *Language and Conceptualization* (Cambridge, 1997) and *Perspectives on Language and Conceptualization* (1993).

Language, culture and cognition

Editor
Stephen C. Levinson,
Max Planck Institute for Psycholinguistics

This series looks at the role of language in human cognition – language in both its universal, psychological aspects and its variable, cultural aspects. Studies focus on the relation between semantic and conceptual categories and processes, especially as these are illuminated by cross-linguistic and cross-cultural studies, the study of language acquisition and conceptual development, and the study of the relation of speech production and comprehension to other kinds of behaviour in a cultural context. Books come principally, though not exclusively, from research associated with the Max Planck Institute for Psycholinguistics in Nijmegen, and in particular the Language and Cognition Group.

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Contributors

JULIE BAUER MORRISON Glendale Community College

JÜRGEN BOHNEMEYER University at Buffalo, The State University of New York

MELISSA BOWERMAN Max Planck Institute for Psycholinguistics

PENELOPE BROWN Max Planck Institute for Psycholinguistics

MARY CARROLL Ruprecht-Karls-Universität Heidelberg

CHRISTIAN DOBEL Westfälische Wilhelmsuniversität Münster

SONJA EISENBEIß University of Essex

N. J. ENFIELD Max Planck Institute for Psycholinguistics

JAMES ESSEGBEY University of Florida at Gainesville

REINHILD GLANEMANN Westfälische Wilhelmsuniversität Münster

MARIANNE GULLBERG Centre for Languages and Literature, Lund University

MATTHEW HAUSKNECHT University of Texas at Austin

KEVIN HOLMES Emory University

SOTARO KITA University of Birmingham

HELENE KREYSA Bielefeld University

JEFF LOUCKS Institute for Learning and Brain Sciences, University of Washington

BRIDGETTE MARTIN HARD Stanford University

BHUVANA NARASIMHAN University of Colorado at Boulder

ASLI ÖZYÜREK Radboud University Nijmegen and Max Planck Institute for Psycholinguistics

ANDREW PAWLEY Australian National University

ERIC PEDERSON University of Oregon

PAMELA PERNISS Radboud University, Nijmegen, Max Planck Institute for Psycholinguistics, and DCAL, University College London

DAN I. SLOBIN University of California, Berkeley

BARBARA TVERSKY Stanford University and Columbia Teachers College

CHRISTIANE VON STUTTERHEIM Ruprecht-Karls-Universität Heidelberg

PHILLIP WOLFF Emory University

JEFFREY M. ZACKS Washington University

PIENIE ZWITSERLOOD Westfälische Wilhelmsuniversität Münster

Acknowledgments

The origins of this volume lie in the Event Representation project at the Max Planck Institute for Psycholinguistics. From 2000 to 2004, this project brought together researchers studying lesser documented languages in the field and scholars studying child language development to explore universals and variation in how events are described across languages. Several of the contributing authors were members or external collaborators of this project (Bohnemeyer and Bowerman jointly directed the project and Brown, Eisenbeiß, Enfield, Essegbey, Kita, Narasimhan, Pederson, and Slobin participated) or members of institute research projects on co-speech gesture, language production, multilingualism, and sign language who collaborated with Event Representation (Dobel, Gullberg, Özyürek, Perniss). The Max Planck Institute for Psycholinguistics is unique in the breadth of the different approaches to the interface between language and cognition its researchers are able to provide. The multifaceted perspective that is the result of this breadth is well reflected in the present collection. Moreover, the research presented in five of the ten chapters of the body of the book was wholly or in part funded by the Max Planck Society (Bohnemeyer *et al.*, Dobel *et al.*, Gullberg, Özyürek, and Perniss, Slobin *et al.*).

The Event Representation project was highlighted by two workshops dedicated to the topic of event encoding in language and mind. These workshops brought together participants of the project and some of the premier scholars of event representations in linguistics, psychology, and philosophy from outside the project. The first of these was organized by Bohnemeyer at the Max Planck Institute in Nijmegen in 1999; the second in 2004 was organized by Pederson and Russell S. Tomlin, of the University of Oregon, as well as by Bohnemeyer. This second symposium was sponsored by the University of Oregon Foundation, the University of Oregon College of Arts and Sciences, and the Department of Linguistics.

As for the current volume, the chapters by Bohnemeyer *et al.*, Dobel *et al.*, Loucks and Pederson, and Pawley all evolved out of presentations at the Eugene symposium. Carroll and von Stutterheim and Wolff likewise presented from their ongoing research on event representation in language and

cognition in Eugene. Zacks and Tversky's joint research was presented on both occasions (by Tversky in Nijmegen and by Zacks in Eugene). It was during the Eugene symposium that the idea for this volume was conceived. It was clear from the beginning that the goal would be a record, not so much of the proceedings of the symposium, but rather of the state of the art in research on the relation between linguistic and cognitive event representations. Consistent with this, however much the current volume may trace a history back to this symposium, the chapters reflect a broad body of scholarship far beyond the original conference.

We would like to thank the contributors, the editors in charge of the project at Cambridge University Press, Helen Barton and Joanna Garbutt, and the series editor Steve Levinson. We should particularly thank Levinson, who in his capacity as Director of the Language and Cognition research group at the Max Planck Institute for Psycholinguistics instigated the Event Representation project, made it possible, and served as a source of ideas and advice throughout its development. We would also like to thank the two anonymous reviewers of the book proposal for their valuable suggestions for improvement, Carolyn O'Meara for compiling the bibliography, Randi Tucker for assistance during the proofreading process, and Linda Konnerth and Holly Lakey for producing the index, and Jill Lake for meticulous and impeccable copy-editing. In the end, this volume has been the product of the efforts of many individuals contributing in many different ways.

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1 On representing events – an introduction

Eric Pederson and Jürgen Bohnemeyer

This volume presents a collection of essays reporting on new research into the relationship between event representations in language and mind. In recent decades, linguists have increasingly invoked the notion of 'events' – under this and other labels – in modeling the meanings of natural language expressions. Indeed, numerous aspects of the structure of human languages are now commonly seen across theories and frameworks as geared towards the task of expressing event descriptions.

Like many of the constructs of semantic analysis and theory, the concept of 'event' has been influenced by the work of philosophers and natural scientists, usually with no more than a passing acknowledgment of the puzzles and controversies besetting its philosophical treatment (see Pianesi and Varzi 2000 for an overview). Philosophers have referenced the concept since antiquity, especially in treatments of causality (the subordinate notion of 'actions' has been used even longer in moral philosophy). However, events and their properties do not appear to have become topics of ontological research before the twentieth century, and their status must at present be considered far from settled. Even more glaring is the contrast between the rich and imposing architecture of event representations in language envisioned by many semanticists and the limited and scattered research on the status, nature, and role of event representations in the cognitive processing of perception and action by psychologists.

The research presented in this volume aims to make advances towards bridging the gap between linguistic and psychological research by illuminating from various perspectives the relationship between linguistic and cognitive event representations. The chapters come from different traditions and use different methods, but each presents empirical research on the interaction of linguistic and cognitive event representations. Some draw on data from the linguistic categorization of events in single languages (Pawley; Tversky *et al.*; Wolff *et al.*). Others directly compare results from multiple spoken (Bohnemeyer *et al.*; Slobin *et al.*; Carroll and von Stutterheim) or signed (Özyürek and Perniss) languages. Further, first language acquisition (Slobin *et al.*) and gestures accompanying speech (Gullberg) are examined. Attention and the visual

processing of stimuli during language production are examined (Dobel *et al.*). Two studies look at the non-linguistic categorization of event stimuli in the context of language use (the components of motion events in Loucks and Pederson; and event segmentation in Tversky *et al.*).

By presenting this set of different perspectives on the relationship between event encoding in language and internal cognition, the volume provides an overview of the research that has been conducted into this question. Our hope is that this will foster cross-stimulation, in that researchers interested in one approach (or method, or source of evidence) will find helpful the lessons from those pursuing other approaches.

1 Previous treatments of event representation in linguistics and psychology

Grammarians through the ages have relied on what one might think of as "expert folk theories" of event description in language. These are sets of unstated assumptions involving undefined notions that are presupposed by linguistic analyses. As an example, the practice of defining the verb as a part of speech or 'lexical category' (wholly or in part) with reference to the semantic property of describing (kinds of) actions or events can be traced back (in the European tradition) at least as far as the Greek grammarian Apollonius Dyscolus of the second century AD (Luhtala 2002: 279). Yet, explicit theories of event semantics would not be developed until the late twentieth century. It is impossible to characterize the assumptions folk theories consist of without turning them into something they are not – explicit statements. That said, the following core assumptions, even though they are couched in the terminology of contemporary linguistic theory, seem compatible with a great many of the folk theories implicit across the scholarship on language structure.

- Verbs generally describe (kinds of) actions or events.
- The arguments and complements of verbs – for example, subject, object, and perhaps certain kinds of embedded clauses – describe entities (or perhaps other events) involved in the event which is described by the verb (event participants).
- The roles that characterize the ways in which the participants are involved in the event – roles such as agent, theme, and recipient – are typically reflected by the syntactic properties of the expressions describing them. That is to say, the relationship between a verb and its arguments reflects these relationships between the event and its participants.
- The meanings of sentences and clauses involve states of affairs or propositions which may be about the reality or realization of the event described by the main verb of the sentence or clause.

To make this a little more concrete, consider the example in (1):

(1) Sally gave Floyd a book on event semantics on Monday with a conspiratorial wink

On the standard view of event encoding in contemporary linguistic theory, this sentence asserts a proposition concerning the occurrence of an event of the kind described by *give*, with the participant named by the subject, *Sally*, as the agent (here: the giver), the one named by the first (or 'primary') object, *Floyd*, as the recipient, and a third participant described by the second (and 'secondary') object, the noun phrase *a book on event semantics*, in the role of theme. All of the semantic properties just mentioned have been the focus of theorists' attention since the 1960s; but all of them have been part of implicit assumptions about event description from the beginning of scholarly work on the structure of language.

Indisputably, the most influential step in the development of event semantics was the publication of the paper 'The logical form of action sentences' by the philosopher Donald Davidson in 1967. Davidson's point of departure is a subtle observation: many adverbials, rather than functioning as true predicate modifiers, show an "intersective" behavior vis-à-vis the verb. For example, *on Monday* and *with a conspiratorial wink* in (1) do not so much single out particular kinds of giving, but rather impose independent constraints on the action described by the verb: the verb and its arguments require the action to be a giving of a book to Floyd by Sally, and the adverbials require the action to have taken place on a Monday and to have been conducted with a conspiratorial wink. In predicate-logic terms, it seems that the verb and the adverbials are all interpreted as predicates over the same argument, and that argument is not expressed by any of the syntactic arguments of the verb, but rather refers to the event itself. To formalize this insight, Davidson proposes that content words such as verbs and adverbs – and the nouns, adjectives, prepositions, and so forth that combine with them – express predicates, not just over individual arguments of the traditional kind referring to animate beings, inanimate things, and perhaps also abstract things, but over event arguments – existentially bound argument variables whose values are events.

Since 1967, Davidson's framework (and its numerous variants and offshoots) has been applied to many other problems of event semantics. One example is the theory of semantic (or 'thematic') roles such as agent, patient, recipient, and so on, alluded to above, the origins of which can be traced as far back as the Sanskrit grammarian Pāṇini of the fourth century BC. Most syntactic arguments of a sentence have referents that bear semantic roles in the event described by the sentence, and the syntactic properties of each argument reflect the semantic role of its referent. For example, in an English sentence with three syntactic arguments in the active voice such as (1), the agent is expressed by the

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