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Time and Temporality in Language and Human Experience



PETER LANG
EDITION

Introduction: Time as a Multidimensional Concept

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There are two main visions relating to the concept of time. The first, classical one, describes time as constant, universal and possibly extramental. The more recent one, rooted in Einstein's theories of relativity, proposes a space-time perspective and views time as strongly dependent on the observer. Looking across various scientific disciplines which ask questions about the existence and essence of time, a place and role for language studies can be identified as illuminating the role of objective and subjective time as well as shedding light on multiple temporalities we live in, think and talk about.

The research presented in this volume has been inspired by a number of projects investigating time and temporal experience in human life and language with researchers working either independently or in teams. COST Action TD0904 TIMELY, in which the University of Lodz participates, provides us with a unique opportunity to meet and learn from one another in a truly international surrounding. A parallel project from the National Science Centre in Poland, focusing on the Perception of Time as a Linguistic Category (Project No UMO-2011/01/M/HS2/03042), makes it possible for us to deal with complex issues in the cognitive analysis of time in terms of the structure of events, identification and extraction of temporal expressions from large language corpora and several attempts at a new interpretation of time and temporal categories in linguistic and artistic creations. The projects aim to propose a more adequate, mentally mediated, theory of time and a theory of users' time perception and time conceptualization.

Both empirical findings on linguistic temporal parameters, the neural mechanisms underlying time perception, memory, attention, and eventually conceptualization are the cognitive processes closely linked to the understanding of time. Culture and language provide two essential frameworks to deal with time. Event structures, language specificity and cultural framing of events enable time interpretation in culture and language specific ways. Metaphor and other figurative language pave the way to elucidate the complex nature of temporal experience as documented in everyday language, in the language of literature and in the semiotic codes of arts. An interaction of gesture culture, verbal and sign language and time is another area explored and presented across temporal research domains.

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A plethora of the questions being raised in connection with time and temporal experience in life, language and arts and our involvement in the relevant research and interest in time across numerous fields of studies, led to the organization of the Time and Temporal Experience in Language and Human Life TimeLing conference by the University of Lodz on 10-12 October, 2012. The conference grouped an international consortium of scholars from a variety of academic disciplines: philosophy, psychology, language acquisition, medical sciences, sociology, literature and media studies, economics, translation and linguistics. The conference was made possible by the financial support of the COST Action TD0904 and the Polish National Science Center (Narodowe Centrum Nauki) grant No. UMO-2011/01/M/HS2/03042, with continuous support of the University of Lodz authorities represented by Prof. Dr. habil. Piotr Stalmaszczyk, Dean of the Philological Faculty. Benefitting from the involvement of the colleagues and students of the Institute of English Studies, University of Lodz, particularly the continuous organizational support of Dr Janusz Badio, the TimeLing conference attracted a number of distinguished scholars of time and provided an excellent opportunity for the participants to hold fruitful discussions and develop new cooperation links. We wish to express our appreciation to all the conference participants and, particularly, to the plenary speakers: Prof. Vyvyan Evans (Bangor University), Prof. Anna Esposito (University of Naples), Prof. James Pustejovsky (Brandeis University), Prof. Roy F. Ellen (University of Kent), Prof. Rolf Ulrich (University of Tübingen), Prof. Katarzyna Jaszczołt (Cambridge University), Prof. Elżbieta Szeląg and Dr Joanna Skolimowska (Nencki Institute of Neuropsychology, Warsaw).

The present volume is a selection of peer-reviewed papers, some of which were presented at the conference, others are written by invited authors. The book is divided into four parts. Each of them deals with a different aspect of time in language. The Introduction is followed by the chapter *TIMELY: A network on timing and time perception*, authored by Dr Argiro Vatakis, Chair of *TIMELY* COST Action TD0904.

Part 1 contains eight papers on the concept of time in philosophy, language and discourse. Barbara Lewandowska-Tomaszczyk looks at the question of time from a general perspective and provides an overview of methods and materials used to study time in language and culture. Dwight Holbrook discusses two approaches to the concept of *the present*, relying on Martin Heidegger's ideas. James Moir plays down the role of temporal factors in discourse and argues instead that the flow of conversation actually depends on human reactions to language through the words themselves. Jacek Waliński discusses two basic concepts of complementarity of time and space in motion, and atemporality of spatial extension in fictive motion in the two papers which follow. Janusz Badio employs experimental methods to describe perception and verbalisation of events. Jerzy Tomaszczyk proposes his interpretation of older language users' intuitions across time. Martina Ivanová shows how Slovak evidential constructions depend on temporal aspects of the con-

text. In the last paper in Part 1, Joanna Latkowska employs a film retelling task to investigate the bilingual Polish-English approaches to creating narratives.

Part 2 investigates aspects of temporal speech processing in two papers. Dan Zakay, Dida Fleisig, and David Neta present conversational materials and a discussion of temporal data in spoken language, and in Anna Esposito, Antonietta M. Esposito, and Marilena Esposito's contribution visual and auditory timing cues in language tasks are analysed.

Part 3, including five contributions, explores aspects of time in grammar and language acquisition. Andrzej Bogusławski presents an outline of his original theory concerning Polish and Russian verbal aspects as expounded in his book *Aspekt i negacja* 'Aspect and Negation' (2004). John Newman and Kristina Geaert conduct a semantic analysis of time-related tags in the Canadian component of the International Corpus of English (ICE-CANADA). Joanna Pawliczak presents an analysis of metaphors of time in English corpus data. Krzysztof Kosecki argues that time signs in Polish Sign Language are often based on metaphors and metonymies. Agnès Leroux compares ways to construct meanings of duration in English and in French. Finally, Michał B. Paradowski advances a pedagogical model which helps to learn foreign language tense systems.

Finally **Part 4**, with eight contributions, focuses on meanings of time and temporal experience in literature and the arts. Valery Lichev's paper draws on diverse philosophical sources to account for the subjective relativity of time in literature. Jacek Wiśniewski analyses the pivotal role of the Great War for the perception of time in early 20th-century British culture. Jadwiga Uchman presents aspects of time in drama and theatre production with special regard to Christopher Marlowe's play *Doctor Faustus*. Finally, Sonia Front shows how concepts of 20th century physics are used to render time in Caribbean literature. Selga Goldmane adopts a semiotic perspective in the discussion of how time is represented in literary works and films based on them. Karen Heald and Susan Ligget discuss the perception of time and space by artists and psychiatric patients on the basis of short films, and Magdalena Zegarlińska describes the techniques of handling time in David Lynch's films.

The editors present the volume with the hope that it will stimulate a wider and deeper discussion of the perennial questions of what time is, and how we construct, perceive, and interpret time and temporal dimensions.

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TIMELY: A Network on Timing and Time Perception

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Introduction

How do we perceive the timing of everyday events? Is physical time comparable to perceived time? The discussion about timing and time perception has been longstanding and has "infiltrated" many different disciplines. But, as yet, time perception has been quite difficult to define, thus leading many cognitive scientists to focus on research related to the interaction of timing with space and timing with various cognitive processes (e.g., attention, memory etc.). In the text below, I briefly present the main topics of interest for TIMELY, including language- the focus of this edited book.

Main Topics of TIMELY

Conceptual analysis and measurement of time: Time is a concept that has intrigued philosophers, anthropologists, biologists, physicists, and psychologists for quite some time now. Since the early days of Psychology, time perception has been among the central concerns of scientific investigations in the field and it has been researched worldwide in both behavioral and neuroimaging settings. However, what concept of time is being studied in each laboratory, and what do the findings really mean? In the literature, one will find a variety of terms such as time sense, psychological time, temporal reasoning, psychological moment etc. and measures of time perception using discrimination, motor tapping, duration, and order judgment tasks, to name just a few. But what conceptual scheme of time perception do all these terms and tasks refer to?

Developmental aspects of time perception: For years now, researchers have been observing the dynamics of protoconversation in early mother-infant interaction. Human infants, beginning as early as the second month of life, can integrate multisensory events on the basis of time [1].

Experience of time by infants and young children, however, is quite different from that of adults, since various psychological and neurobiological mechanisms, which affect sensitivity to time and shape the timing of motor behavior are not yet fully developed [2]. Experimenting with time developmentally will provide valuable information regarding the time course of time perception, but most importantly will influence our knowledge on the association between temporal abilities and the

developmental pattern of the neural mechanisms underlying time perception early in human development.

Culture and language: These domains are major constituents of the sociocultural context which interacts with our experience of time, but their influence on human time perception is yet under-researched. We generally perceive time as moving forward and we often express this linguistically using spatial metaphors. It has also been demonstrated that people whose native language conceptualizes time with a different directionality (vertical vs. horizontal) interpret statements regarding time differently [3]. Thus, suggesting that our concept of time is modulated by the way a given language associates the concepts of time with nontemporal concepts such as space. What happens in the cases where the concept of time is ambiguously represented in language? For instance, the Hindi language uses only one word "kal" for both "yesterday" and "tomorrow" with the meaning being determined by the context [4]. While the Aymara people appear to have a reverse concept of time by using gestures that place the past ahead and the future behind [5]. The interaction of language, culture, and timing in, thus, a highly interesting topic for current and future investigation.

Uncovering the neural correlates of time perception: In order to better understand the mechanisms underlying time perception, it is essential to investigate the existence of specialized brain systems for representing time and the specific structures involved in these systems. Research to date has provided strong evidence that specific structures in the human brain play a role in the processing of temporal information (e.g., basal ganglia, premotor and motor cortex, superior temporal gyrus, inferior prefrontal cortices). The cerebellum, for example, is argued to be involved in a variety of tasks such as speech perception/production, where the timing of brief intervals is an important component. However, it is not yet clear whether or not the cerebellum is involved only in the short-interval timing, or whether it covers a wide duration range. Recent evidence also showed that the parietal cortex is involved in the processing of temporal intervals. Studies of patients with right parietal stroke have shown decreased temporal order sensitivity for visual stimuli in the contralateral side of space [6]. Such findings, suggest that the right parietal cortex may also play an important role in multisensory integration as a function of time and space.

Understanding time perception is also critical in clinical populations. For example, neglect patients mainly show an impairment related to a spatial component of an event, however, neglect can also be observed in the temporal domain [7]. Patients suffering from schizophrenia, depression, or bipolar disorder experience a disorganized time perception. Finally, in studies with dyslexic patients, a deficit in the processing of rapidly presented stimuli has been demonstrated [8]. It seems therefore that other disorders (e.g., aphasia) may have a temporal component that has not been explored yet. Brain functional neuroimaging and animal research

should contribute in further elucidating the underlying mechanisms of time perception.

Time perception research extensions to practical, everyday applications: Given the ambiguity surrounding the concept of time, along with the difficulty in understanding timing, the development of time-related applications has been lagging. Even in Artificial Intelligence, the concept of time and its application in Robotics has not yet been properly explored. The limited time-related applications that have been developed are very successfully and useful. For instance, Tallal and colleagues have developed a therapeutic technique for dyslexics that involve training in temporal processing related tasks. This therapeutic technique was based on research data showing that expanding the transitional element of synthetic syllables (by increasing the formant transition duration from 40 to 100 ms) significantly improved temporal order performance in dyslexics [8].

Until now, scientists have been trying to approach these fundamental issues from a single-discipline perspective. It is now clear, however, that multiple disciplines must interact in order to resolve these issues. TIMELY is one such union bringing together over 200 senior and junior scientists involved in the study of time from different perspectives. This common multidisciplinary effort is unique with the potential to take time-research a step forward.

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