

ESF Exploratory Workshop on

# Words In Action: Interdisciplinary Approaches To Understanding Word Processing And Storage

Pisa (Italy), 11-14 October 2009

Convened by:  
**Vito Pirrelli** <sup>①</sup>

**Organising Committee**

**Claudia Marzi  
Marcello Ferro  
Vito Pirrelli**

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Co-sponsored by <sup>①</sup> Istituto di Linguistica Computazionale (CNR Pisa, Italy)

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*ISTITUTO DI LINGUISTICA COMPUTAZIONALE*  
*"ANTONIO ZAMPOLLI"*



The European Science Foundation (ESF) is an association of 80 Member Organisations devoted to scientific research in 30 European countries. The Mission of ESF is to provide a common platform for its Member Organisations in order to advance European research and to explore new directions for research at the European level. Through its activities, the ESF serves the needs of the European research community in a global context.

The main objectives of ESF for the years 2006-2010 as defined by its current *Strategic Plan* are to promote Science Strategy and Science Synergy, paving the way for initiatives across disciplinary and geographic boundaries in the European Research Area (ERA).

The Exploratory Workshops scheme is one of the key instruments of the Science Strategy “pillar”. Each year, ESF supports approximately 50 Exploratory Workshops across all scientific domains. The focus of the scheme is on workshops aiming to explore an emerging and/or innovative field of research or research infrastructure, also of interdisciplinary character. Workshops are expected to open up new directions in research or new domains. It is expected that a workshop will conclude with plans for specific follow-up research activities and/or collaborative actions or other specific outputs either within the frame of ESF (e.g. prepare the ground to develop a [Forward Look](#), a [Research Networking Programme](#) or a [EUROCORES](#) proposal; publication of a Policy Briefing...) or for submission to the EU 7th Framework Programme or to other European or international funding organisations.

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## **Main Objectives of the Workshop:**

Words represent a fundamental part of what is traditionally meant by human language knowledge, a key to our understanding of how humans process and represent symbolic sequences of serially-ordered items. By focusing on issues of storage, processing and learning of morphologically complex words, the workshop intends to provide an interdisciplinary forum taking stock of current neuro-psychological, computational and theoretical evidence of the morphological organization and access of the mental lexicon with a view to promoting novel methods of research and assessment for grammar architecture and language disturbance.

## **Workshop Agenda**

By bringing together experts of various scientific domains and different theoretical inclinations, we intend to advance our current awareness of the theoretical, historical, psycholinguistic, computational and neurophysiological evidence on morphological processing and learning, with a view to assessing levels of convergence and exploring the potential for synergy. This should be instrumental in breaking the present deadlock in the one-route/dual-route debate of the last twenty years.

Current interdisciplinary evidence seems to suggest that differential morphological effects may be the complex outcome of uniform learning and processing mechanisms, according to an indirect correspondence hypothesis. Any serious appraisal of such an indirect correspondence hypothesis, however, is likely to exceed the limits of i) partial, domain-specific approaches, ii) human intuition and iii) box-and-arrow models of cognition, thus calling for a shift of methodological emphasis in language inquiry, focusing on intense usage of computational simulations of realistic

learning conditions. We believe that an open truly interdisciplinary Europe-wide forum will provide the timely opportunity to foster novel research methods on fundamental questions concerning the representation, organization and access of morphologically complex words as serially ordered structures in the mental lexicon. This will meet a general expectation that dynamic models of language, brain and computation can shed light on aspects of learning and fundamental issues of the architecture of grammar and cognition that would otherwise elude scientific inquiry.

Scientists all over Europe are currently pursuing highly related and complementary work in this field through support of nationally-funded projects or bi-lateral cooperation programmes. However, due to the fundamental character of this research area and the comparative lack or insufficient availability of technological impact, funding initiatives are in most cases not particularly generous and typically (although not always) small-scale. A larger-scale integrated European effort, focusing on common medium-term objectives, will promote interdisciplinary cross-fertilization and synergy, and optimize research investments in terms of more convergent and complementary efforts. It is our contention that the European research scenario is particularly conducive to these goals, due to the robustly empirical character of European research in a vast range of scientific domains (encompassing processing models of the mental lexicon, short-term and long-term memory issues, typological and historical trends) where European scientists appear to be playing a leading role. Failure to produce such an effort will progressively undermine the impact of this huge potential, to eventually provide an objective advantage to other international actors.

Ideally, the workshop should aim at fostering European concerted research actions and networked project activities such as the Mental Lexicon Project of the Social Sciences and Humanities Research Council of Canada, while promoting the establishment of European-scale interdisciplinary schools and laboratories for Brain, Language and Cognition.

### **Report publication and dissemination**

Electronic records of the workshop will be made available through the ILC website. A written report of the workshop will be drafted by the convenor and circulated among all participants. An edited collection of all workshop presentations will be submitted for publication as a book to a major European publisher.

## PROGRAMME

### Sunday, 11 October 2009

Afternoon *Arrival*

### Monday, 12 October 2009

- 09.00-09.05 **Welcome by convenor**
- 09.05-09.20 **Presentation of the European Science Foundation (ESF)**  
**Marco Tadic**, ESF Standing Committee for the Humanities (SCH)
- 09.20-12.45** **Morning Session: Typological and variational trends in language morphologies**
- 09.20-10.05 **Presentation 1 "On the 'Deep Morphology' of the Romance Languages and its Implications for Word-Structure"**  
**Martin Maiden** (Oxford University, Oxford, UK)
- 10.05-10.35 **Discussant**  
**John Nerbonne** (Rijksuniversiteit, Groningen, The Netherlands)  
"A Variationist Perspective on Morphology"
- 10.35-10.50 **questions & answers**
- 10.50-11.15 *Coffee / Tea Break*
- 11.15-12.00 **Presentation 2 "Morphological Complexity: a typological perspective"**  
**Greville G. Corbett** (University of Surrey, Guildford, UK)
- 12.00-12.30 **Discussant**  
**Ingo Plag** (Siegen University, Siegen, Germany)  
"Morphological Complexity: Inflection Classes and Probabilistic Allomorph Selection"
- 12.30-12.45 **questions & answers**
- 12.45-14.00 *Lunch*
- 14.00-17.00** **Afternoon Session: Neuro-psychological Evidence on Morphological Processing and Storage**
- 14.00-14.45 **Presentation 3 "Discrete elements: the essence of language? Comments on the neural side of morphemes and rules"**  
**Friedemann Pulvermüller** (MRC Cognition and Brain Sciences Unit, Cambridge, UK)
- 14.45-15.15 **Discussant Alessandro Laudanna** (Università di Salerno, Salerno, Italy)  
"Evidence for the representation of morphemes and/or words in the Italian mental lexicon"
- 15.15-15.30 **questions & answers**
- 15.30-16.15 **Presentation 4 "Modulation of the fronto-temporal language system by different grammatical markers"**  
**Lorraine K. Tyler** (Cambridge University, Cambridge, UK)

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16.15-16.45	<b>Discussant</b> <b>Cristina Burani</b> (ISTC CNR, Rome, Italy) "Morpho-lexical reading and comprehension in dyslexic and skilled readers"
16.45-17.00	<b>questions &amp; answers</b>
17.00-17.15	<i>Coffee/Tea Break</i>
17.15-19.00	<i>Poster Sessions</i> <b>Valentina Bambini</b> ( <i>Scuola Normale Superiore di Pisa</i> ) <b>Tracking metaphor through eye-movements: from words to meanings</b> <b>Paola Marangolo</b> ( <i>Dipartimento di Neuroscienze, Università Politecnica delle Marche</i> ) <b>Language and its interacting components: The right hemisphere hypothesis in derivational morphology</b> <b>Krista Lagus</b> ( <i>Adaptive Informatics Research Centre, Helsinki University of Technology</i> ) <b>Unsupervised induction of morphology and sentence constructions from text using Minimum Description Length</b> <b>Emiliano Guevara</b> ( <i>University of Oslo, Norway</i> ) <b>Compositionality in Distributional Semantics: Derivational Affixes</b> <b>Fermín Moscoso del Prado Martín</b> ( <i>Laboratoire de Psychologie Cognitive, CNRS &amp; University of Provence</i> ) <b>The thermodynamics of language processing</b> <b>Mirjam Ernestus</b> ( <i>Radboud University Nijmegen &amp; Max Planck Institute for Psycholinguistics</i> ) <b>The role of acoustic reduction in the production and comprehension of affixes</b> <b>Hélène Gaudio &amp; Fabio Montermini</b> ( <i>Laboratoire "Cognition, Langues, Langage, Ergonomie" CNRS-UMR 5263</i> ) <b>Sublexical vs. Supralexical models of morphological processing : towards a reconciliation</b> <b>Paolo Acquaviva</b> ( <i>University College Dublin</i> ) <b>Nominality: Grammar and Conceptualization in the Lexicon</b> <b>Alessandro Lenci</b> ( <i>Università di Pisa</i> ) & <b>Marco Baroni</b> ( <i>Università di Trento</i> ) <b>Distributional Memory: a Generalized Framework for Corpus-Based Semantics</b> <b>Gert Westermann</b> ( <i>Department of Psychology, Oxford Brookes University</i> ) <b>Inflecting the English past tense - regular vs. irregular or easy vs. hard?</b>
20.30	<i>Social Dinner</i> Osteria dei Cavalieri, v. S. Frediano 16, Pisa

## Tuesday, 13 October 2009

- 09.00-12.30**      **Morning Session: The Lexicon-grammar divide in the current debate on Theoretical Morphology**
- 09.00-09.45      **Presentation 1 "The hierarchical lexicon and morphological constructions"**  
**Geert Booij** (Universiteit Leiden, Leiden, the Netherlands)
- 09.45-10.15      **Discussant**  
**Gary Libben** (University of Calgary, Calgary, Canada)
- 10.15-10.30      **questions & answers**
- 10.30-11.00      *Coffee / Tea Break*
- 11.00-11.45      **Presentation 2 "Desiderata for a theory of the Lexicon: parallelism and distributed representations"**  
**Luigi Burzio** (Johns Hopkins University, Baltimore, USA)
- 11.45-12.15      **Discussant**  
**Vito Pirrelli** (ILC CNR, Pisa, Italy)  
  
"Paradigm self-organization in Time and Space"
- 12.15-12.30      **questions & answers**
- 12.30-13.45      *Lunch*
- 13.45-16.45**      **Afternoon Session: Psycho-computational approaches to Word Processing and Storage**
- 13.45-14.30      **Presentation 3 "Computational accounts of lexical organisation and processes"**  
**George Houghton** (Bangor University, North Wales, UK)
- 14.30-15.00      **Discussant**  
**Walter Daelemans** (University of Antwerp, Antwerp, Belgium)  
  
"Memory-based Morphological Processing"
- 15.00-15.15      **questions & answers**
- 15.15-16.00      **Presentation 4 "There is more to process than meets the eye: A study of paradigmatic effects in reading case-inflected words"**  
**Harald Baayen** (University of Alberta, Edmonton, Canada)
- 16.00-16.30      **Discussant**  
**William Marslen-Wilson** (MRC Cognition and Brain Sciences Unit, Cambridge, UK)
- 16.30-16.45      **questions & answers**
- 16.45-17.00      *Coffee/Tea Break*
- 17.00-18.45      *Round Table: **Follow-up research activities and collaborative actions***
- 18.45              *End of Workshop*

## Wednesday, 14 October 2009

morning              *Departure*

## European Science Foundation

### **Objectives of the ESF Standing Committee for the Humanities (SCH)**

The main tasks of the **ESF Standing Committee for the Humanities (SCH)** are:

- to encourage interdisciplinary work through the independent evaluation of collaborative research proposals emanating from the scholarly community;
- to identify priority research areas and to play an integrative and co-ordinating role by creating links between research communities which in the Humanities are often small and fragmented.
- to contribute to the development of the ESF science policy agenda and to provide expert advice on science policy actions at the European level in the field of its responsibilities.

The Committee is well aware that the ESF is the only European Agency where the Humanities have a place next to the other sciences and where European projects are reviewed, developed and subsequently operated.

The Committee considers it all the more important to be heard as the voice of the Human Sciences in Europe and to continue pleading for a more prominent place for the Humanities in the European landscape.

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