

Introduction to special issue

NetWordS (“The European Network on Word Structure. Cross-disciplinary approaches to understanding word structure in the languages of Europe”) is a 4-year research networking programme (2011–2015) promoted by the European Science Foundation, gathering 16 European countries and over 50 national laboratories and scientific institutions. Its ultimate objective is to sharpen our understanding of the current theoretical, typological, psycholinguistic, computational and neurophysiological issues on the structure and processing of words, by fostering effective integration of multi-disciplinary research agendas, technological infrastructures, experimental protocols and shared data.

Any attempt to understand more of the dynamic interaction between the independent knowledge domains interfaced in the mental lexicon, their co-organisation and their characteristically non-linear developmental course is known to go well beyond the limits of introspective intuition, single-domain knowledge, and box-and-arrow models of cognition. Over the last 20 years, the anatomy of language has been investigated with functional neuroimaging techniques based on perfusion and metabolism (PET, fMRI), whose results supported more traditional analyses of anatomo-clinical correlations in selected groups of brain-damaged patients, and have more recently been complemented by so-called virtual lesion studies (through Transcranial Magnetic Stimulation) and evidence of intraoperative direct electrical stimulation. Brain areas associated with language processing have been identified consistently, thereby making it possible to draw a distinction between processes localized to specific structures (e.g. sensory and motor processing) and processes where specialisation emerges from the distributed pattern of activation over many different areas, each of which participates in multiple functions (e.g. phonological and orthographic processing). Although the general picture is clear in broad outline, and future studies will undoubtedly be able to improve the spatial and temporal localization of functional regions, the greatest challenge lying ahead of us is to understand how different brain regions interact with one another in their joint contribution to language comprehension and production. Arguably, the main task for future research will be to specify the details of the inter-region organization and computational operations, to move from functional descriptions to truly explanatory models of language.

NetWordS has taken a few important steps in this direction, through a battery of initiatives promoting dissemination of awareness on issues of common interest, multi-disciplinary education and more targeted research synergy. If sustained by prospective follow-up programmes, through more effective infrastructural support and a wider coverage of the world languages, this seminal effort is bound to play a fundamental role in fostering novel methods of research and assessment for grammar architecture and language physiology. Not only will this help scholars to arrive at a deeper understanding of how language is represented and processed in the brain, but it will

also develop novel protocols for early diagnosis and effective therapy of both verbal and non-verbal communication disorders.

Collaboration, training and networking have been among the main goals of the NetWordS programme. These goals were achieved through several activities: regular yearly meetings of the steering committee, two summer schools (Dubrovnik 2012 and Trondheim 2014) and three workshops (Pisa 2010, Toulouse 2012 and Dubrovnik 2013). Workshops were organized around interdisciplinary issues, bringing together experienced scientists and early career researchers. Workshops enabled researchers who received NetWordS grants for short visits to present results of their collaborative research. The third NetWordS workshop (Dubrovnik, September 2013) gathered researchers from various disciplines, who study word structure by adopting different methods and approaches.

Issue 78 of the journal *Suvremena lingvistika* is an edited collection of some of the papers that were presented during the third NetWordS workshop. These papers clearly reflect the interdisciplinarity of the NetWordS research programme, bearing witness to the wide area of different types of research, methods and collaborative work that were stimulated within the programme.

The paper *Adaptation Effects in Lexical Processing* (Christina L. Gagné and Thomas L. Spalding) is focused on a few methodological aspects of psycholinguistic inquiry, arguing that psycholinguistic research generally adopts a scientific strategy that assumes a relatively stable set of representations and processes. In this paper authors present four sets of example data drawn from various experimental tasks to show that the psycholinguistic system appears to adapt across the trials of the experiments. The discussion of the paper focuses both on the theoretical and the methodological implications of the adaptiveness of the psycholinguistic system.

In the paper *Prepositional antonymy in Croatian: a corpus approach* (Daniela Katunar) the author examines co-occurrence patterns of prepositional antonyms in the Croatian National Corpus by adopting a specific corpus-based methodology for antonymy research. The author endorses the cognitive linguistic position that antonymy is a prototype-based category, modulated by both conceptual opposition and contextual modifications, and she observes its workings in the novel prepositional structures. Starting from the definition of four different antonym types, the author describes different contextual modifications and conceptual structures that shape these antonymy relations, indicating a complex interplay between the language system and language use. The paper highlights the importance of interfacing cognitive linguistic and corpus-based approaches to language inquiry in the explanation of word structure and word relations.

The paper *Perception of typicality in the lexicon: wordlikeness, lexical density and morphonotactic constraints* (Claudia Marzi, Marcello Ferro, Emmanuel Keuleers) presents a computational model of lexical organisation, based on Self-Organising Maps with Hebbian connections defined over a temporal layer (TSOMs), providing a principled algorithmic account of effects of lexical acquisition, processing and access to further investigate these issues. The au-

thors show that (morpho-)phonotactic probabilities and lexical density, though correlated in lexical organization, can be taken to focus on different aspects of speakers' word-processing behaviour and thus provide independent cognitive contributions to our understanding of the principles of perception of typicality that govern lexical organization.

The paper *Language use and the architecture of grammar: a Construction Morphology perspective* (Geert Booij) motivates a usage-based account of morphological knowledge and illustrates its place in the architecture of grammar. Morphology must be usage-based in order to understand the knowledge and creation of complex words. The paper presents Construction Morphology as a theory about the place of morphology in the architecture of grammar that assumes a hierarchical lexicon, with various degrees of schematicity that do justice to actual language use in the domain of word formation. The model of Construction Morphology is shown to allow for the graceful integration of findings concerning lexical knowledge in various subdomains of Linguistics such as language acquisition, change, and processing.

Vito Pirrelli & Ida Raffaelli