











of mirror neurons in monkeys by perceptual predictions and perceived actions, but may also be understood as involving context-sensitive language “emulators”.

All of this points to a converging trend between computational and cognitive lines of scientific inquiry, supporting the view that grammar and lexical competence are acquired through minimal steps, shaped up by performance-driven factors such as memory limitations, frequency-based sensitivity, and modality-specific constraints, ultimately blur-ring the dichotomy between language knowledge and usage.

By exchanging words in ecological settings, we share, assess, modify, extend and structure our “semantic memory”. Yet, the nature and content of such memory, the principles of its associative organisation and internal structure, the developmental role of the dynamic interaction between linguistic form, meaning and sensing are among the most controversial issues in the current linguistic and neurocognitive debate.

Suggestions in the literature range from relatively abstract representations, including hierarchical semantic networks and lexical conceptual structures, to more concrete perceptual- or motor-based representations. Each of these approaches faces difficulties. Abstract representations elude the issue of symbol interpretation by severing meaning from our system of experiences of the external world. On the other hand, linguistic units can combine and behave distributionally in ways that are not strictly predictable from their semantic properties. Inferences, sense extensions, metaphors and processes of concept composition and coercion show that grounded sensory motor knowledge does not suffice to account for our ability to extract meaning from language. Intermediate hypotheses need be entertained and empirically assessed, casting meaning as abstract, schematic representations, based on linguistically articulated, structured knowledge and word co-occurrences in large text samples, which are nonetheless embodied in human perceptual and motor systems. Researchers working in a neurocomputational framework have recently addressed issues of semantic knowledge arising from patterns of combinatorial information using more brain-like neural network simulations.

Interpretation of Noun-Noun compounds seems to require integration of the meaning representations associated with the two constituent nouns and in-dependently accessed from the lexicon. However, it has been shown that access to conceptual representations is considerably more dynamic and context-sensitive, so that the whole construction appears to prompt a process of selective activation of contextually-relevant semantic properties. From a computational standpoint, constraint-satisfaction approaches made the interesting suggestion that the interpretation of a complex construction makes use of pre-compiled, schematized information, memorized in the mental lexicon and applied probabilistically.





“Word stress systems and the role of stress in lexical processing” were illustrated by *Richard Wiese* by examining typological aspects of prosodic and lexical representations, providing evidence that processing strategies at the prosodic level may vary as a function of the stress patterns being processed and their level of lexical conditioning.

Principles of paradigms organisation were illustrated by *Fabio Montermini* in his “Stem spaces and regularity in verbal inflection” as a network of connected forms.

*Greville Corbett* presented the high variability of paradigms, within and across languages in “Shapes of lexemes: a typological perspective”.

Models of processing printed words are presented by *Ram Frost* in his “What determines principles of word recognition and lexical structure: Evidence from cross-linguistic research”. Every language presents a different solution for representic phonological, morphological and semantic information, and principles of lexical organization are language specific, reflecting the language phonological space and morphological structure.

*Mila Vulchanova* in “Morphology in ASD: Local processing bias and language” provided evidences for a connection between the local processing bias and the acquisition of morphology and grammar.

*Christina Manouilidou* provided evidence of lexical semantic representation in her “The architecture of the mental lexicon: insights from compound processing”.

*Dominiek Sandra* by illustrating how young children are sensitive to morphological relations in his “Orthographic representations of homophonous word forms”, suggested the existence of orthographic representations of whole-word forms in mental lexicon.

*Harald Baayen* presented a quantitative modeling of acoustic duration in his talk “Why is the signal smooth?” to provide evidence in favour of a highly combinatorial and distributed nature of word-based information in the brain.

*Madeleine Voga* investigated morphology in the bilingual lexicon in her “Inflectional and derivational processing in a morphologically rich language: an overview of Greek bilingual and monolingual data” presenting psycholinguistic experiments.

*Vito Pirrelli* in his “Word alignment and Morphology Induction” presented explanatory models of word learning and word processing as memory-driven processes.

In his presentation “Two words, one meaning: lexical organization and processing in bilinguals” *Manuel Carreiras* presented possible answers to how bilinguals access lexical information from different languages in reading, by taking in examination inflection, derivation and compounding.

To sum up, word storage and word processing have traditionally been modelled according to complementary theoretical paradigms, in line with the classical tenet of so-called dual-route models of word structure (Pinker and Ullman 2002) assuming a modular dichotomy between memory and computation. The extensive linguistic, psycho-linguistic, neuro-linguistic and typological evidence reviewed and discussed in Pisa broached an overall different picture. Finite state automata, hierarchical lexica, stochastic classifiers, dynamic self-organizing memories, together with







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**Richard Wiese (University of Marburg, Germany)**

Word stress systems and the role of stress in lexical processing

12.45-14.30 *Buffet lunch*

**Fabio Montermini (CNRS, Université de Toulouse le Mirail, France), Olivier Bonami (Université Paris-Sorbonne, France)**

Stem spaces and regularity in verbal inflection

**Greville Corbett (University of Surrey, UK)**

Shapes of lexemes: a typological perspective

16.00-16.30 *coffee break*

**Ram Frost (The Hebrew University, Israel)**

What determines principles of word recognition and lexical structure? Evidence from cross-linguistic research

**Mila Vulchanova, Valentin Vulchanov (Norwegian University of Science and Technology, Norway)**

Morphology in ASD: Local processing bias and language

**Manouilidou Christina and Ralli Angela (University of Patras, Greece)**

The architecture of the mental lexicon: insights from compound processing

**Dominiek Sandra (University of Antwerp, Belgium)**

Orthographic representations of homophonous word forms

19.30 **End of Friday Session**

20.00 ***Buffet dinner***

## **Saturday, 26 November 2011**

09.15 **start of final Workshop Session**

**Harald Baayen (Tuebingen University, Germany)**

Naive discriminative learning and construction morphology

**Madeleine Voga (Paul Valéry University, France), Hélène Giraudo (CNRS, Université de Toulouse le Mirail, France), Anna Anastassiadis-Symeonidis (University of Thessaloniki, Greece)**

Inflectional and derivational processing in a morphologically rich language: an overview of Greek bilingual and monolingual data

10.45-11.15 *coffee break*

**Marcello Ferro, Claudia Marzi, Vito Pirrelli (Institute for Computational Linguistics, CNR Pisa Italy)**

Word alignment and Morphology Induction

**María Dimitropoulou, Jon Andoni Duñabeitia, Manuel Carreiras (Basque Centre on Cognition, Brain and Language, Spain)**

Two words, one meaning: lexical organization and processing in bilinguals.

13.00 **End of Workshop**

13.15-15.30 ***NetWordS Steering Committee Meeting (including a buffet lunch)***