SECOND ANNOUNCEMENT

2ND INTERDISCIPLINARY SUMMER SCHOOL ON

Words: structure, meaning, acquisition, processing

TRONDHEIM (NORWAY), 4TH-9TH AUGUST 2014

The school, jointly organised and sponsored by *NetWordS* and the *Norwegian Graduate Researcher School in Linguistics and Philology* (http://www.ntnu.edu/lingphil), will bring together, for a full week, PhD students and post-doctoral researchers from all over Europe and beyond, to attend courses on interdisciplinary approaches to the study of word structure and usage, focusing on either **thematic** or **methodological issues**. The school intends to target two levels of studentship, ranging from less experienced to more experienced attendants, according to the following rationale:

***Thematic courses**:*
'non-specialist' courses are geared towards PhD students and postdocs that do not specialize in the particular areas dealt with by the courses but would like to seize the opportunity to broaden their horizon beyond their respective specializations;

'specialist courses' are more geared towards PhD students and postdocs that have already some first-hand experience in the areas covered by the courses and are interested in discussing related advanced research issues.

***Methodological courses**:*
'basic' courses are geared towards people with very little experience in the methods dealt with by the courses;

'advanced' courses are geared towards people with previous experience in the domains addressed by the courses and are seeking expert tutoring on more complex problems arising in connection with the specific methods under discussion.

Programme Information

List of courses*	**teacher(s)**
Thematic courses	
Fundamental issues in Theoretical Morphology (nS) Issues in Morpho-phonology (S)	Antonio Fábregas Ingo Plag
Lexical semantics (nS) Semantics and word formation (S)	Carita Paradis Paolo Acquaviva
Morphology in language contact (nS) The acquisition of morphology (S)	Francesco Gardani Dorit Ravid
Morphological processing (nS) Aspects of bilingual lexical processing (S)	Martina Penke Hélène Giraudo, Madeleine Voga

* **S**= specialist, **nS** = non-specialist, **B** = basic, **A** = advanced. **NB**: courses in the same box are run concurrently

Methodological courses

Statistics for newbies (B)	Melanie Bell
Naïve Discriminative Learning (A)	Harald Baayen
Computational morphology for newbies: automata and hierarchical lexica (B)	Gábor Prószéky
Connectionist architectures for lexical modelling (A)	Claudia Marzi, Marcello Ferro
Obtaining behavioural data for lexical research (B)	Emmanuel Keuleers
Neurolinguistic issues in lexical access and organisation (A)	Mila Vulchanova, Vito Pirrelli

Plenary lecturers: Milena Žic Fuchs, Harald Baayen.

Practical Information

The school is **free of tuition fees** and will be able to accept only a limited number of attendants (up to one hundred). Attendant accommodation and meals will partly be provided by *NetWordS* and the *Norwegian Graduate Researcher School in Linguistics and Philology*.

A WEB-BASED ON-LINE PRE-REGISTRATION FORM IS AVAILABLE ON THE NETWORDS WEBSITE FROM DECEMBER 20TH, 2013 TO FEBRUARY 15, 2014. Requests for pre-registration will be processed and accepted in order of receipt. Priority will be given to participants from countries which financially support the ESF Programme (http://www.networds-esf.eu/).

Registration is carried out in **two steps**.

Step 1): applicants will have to submit a **pre-registration form** first. A confirmation of successful submission will immediately be sent to the email address provided in the form.

Step 2): by **March 15th** applicants will receive a further email confirming that their application was accepted and will be asked to finalise their registration accordingly.

Course Abstracts

Thematic Courses

Fundamental issues in Theoretical Morphology

Antonio Fábregas, University of Tromsø, Norway

The goal of this course is to offer an introduction to the current debate between Lexicalism and Neoconstructionism, with overviews of the main theories that have contributed to this debate (including l-syntax, Distributed Morphology and Nanosyntax). The course has three parts, each corresponding to one session:

(i) Lexicalism vs. Neoconstructionism: defining properties and main theories; the status of morphology and the lexicon in each theory.

(ii) The relation between syntax and the lexicon. Endo-skeletal vs. exo-skeletal views of argument structure, event structure and grammatical categories.

(iii) Morphology and syntax. Word formation processes, affix rivalry and affix ordering: how they are analysed in the main current morphological theories.

Issues in Morpho-phonology

Ingo Plag, University of Düsseldorf, Germany

This course is about the pronunciation of morphologically complex words. Traditional approaches to the role of sound structure in complex words have focused on phonologically conditioned allomorphy or morphologically conditioned segmental or prosodic alternations (such as stress shift, stress preservation, truncation, degemination, or syllabification in English). Such studies have detected interesting generalizations across sets of words but also exceptions to the observed regularities. These findings have given rise to highly influential theoretical models like like Kiparsky's (1982) Lexical Morphology and Phonology, and, underlying such theories, to far-reaching assumptions about the modular organization of grammar. The general amount and the nature and significance of variation in morpho-phonological alternations, however, been seriously neglected (see Bauer, Lieber & Plag 2013: chapter 9 for an overview of the challenges that English still has in store in this respect). In this course we will look more closely at some recent empirical research that seriously challenges established theories of morphology-phonology interaction, the common distinction between lexical and postlexical phonology, and current theories of speech production.

Kiparsky, Paul. 1982. Lexical morphology and phonology. In In-Seok Yang (ed.), Linguistics in the Morning Calm: Selected Papers from SICOL, 3–91. Seoul: Hanshin.
Bauer, Laurie, Rochelle Lieber & Ingo Plag. 2013. The Oxford reference guide to English morphology. Oxford: Oxford University Press.

Lexical semantics

Carita Paradis, Centre for Languages and Literature Lund University, Sweden

The purpose of this course is to acquaint you with the major issues dealt with in lexical semantics. It offers a brief overview of some current (and less current) lexical semantics theories with the main focus on work within the Cognitive Linguistics framework which has dominated theorising in lexical semantics since the end of the last century. Central to this approach is the meaningful functioning of

language in all its guises and all its uses in discourse. Different empirical methods – corpus techniques as well as experiments – are used in order to arrive at a better understanding of what linguistic expression reveals about human cognition and how cognitive abilities give rise to patterns and structures in natural language use. Language is seen as a highly dynamic entity for which no absolute boundaries between the traditional areas of syntax, semantics, and pragmatics are assumed. The study of language becomes an exciting and challenging part of the study of human perception, cognition and interaction. The subject matter covered in the course includes the relationship between lexical items and conceptual structure, lexical semantic relations, such as polysemy, antonymy, metaphor and metonymy and the modelling of meaning for research in the field.

Semantics and Word Formation

Paolo Acquaviva, School of Languages and Literatures University College Dublin, Dublin, Ireland

This course deals with the complex relation between word meaning and word structure; more specifically, between lexical semantics and the structure of derived words. It will first review the main questions and analytical approaches, showing how different conceptions of morphology and its place in grammar provide different answers to the questions of what constitutes the primitive semantic lexicon ('senses', basic concepts, encyclopaedic listemes) and what expresses them (morphemes, stems, abstract operations, full word forms). It will then concentrate on issues of word-internal compositionality and on alternative views of lexical decomposition, particularly syntax-based ones which question the notion of lexicon itself. The discussion assumes some familiarity with the theory and the descriptive vocabulary of word formation, and with basic notions of syntax and semantics; it does not however assume familiarity with any formal framework. Particular attention will be given to basing the discussion on empirical phenomena, to promote a direct engagement with linguistic facts.

For participants with a background in theoretical linguistics, this course will offer an advanced overview of the morphology-semantics interface, complementing more traditional courses. For other participants, the course will provide a structured account of the language-internal evidence necessary for a linguistically informed approach to word meaning.

Morphology in Language Contact

Francesco Gardani, Vienna University of Economics and Business, Vienna, Austria

Language contact is one of the fundamental factors of language evolution. This course will begin with a survey of prominent approaches to contact linguistics, such as Thomason & Kaufman (1988) and van Coetsem (2000), and of the possible effects of language contact on all levels of the linguistic processing (phonology, syntax, and morphology). After this introductory session, the course will focus on contact-induced morphological change covering a wide range of phenomena. The main topics will include mat-borrowing vs. pat-borrowing (Sakel 2007); borrowing derivation vs. inflection; types of morphological non-integration, such as indeclinability and 'Parallel System Borrowing' (Kossmann 2010); strategies and degrees of inflectional integration; mechanisms of contact-induced morphological change, such as codeswitching and negotiation; as well as the exceptional phenomenon of inflectional borrowing (Gardani 2008). We will also focus on cases of extreme language mixture (pidgins, creoles, bilingual mixed languages) and show that the degree of inflectional borrowing largely depends on the different kinds of contact settings. In the final sessions,

we will consider the implications that contact-induced morphological change has for the architecture of morphology, in terms of derivation vs. inflection and their sub-modules.

Gardani, Francesco. 2008. Borrowing of inflectional morphemes in language contact. Frankfurt am Main: Peter Lang.
Kossmann, Maarten. 2010. Parallel System Borrowing: Parallel morphological systems due to the borrowing of paradigms. Diachronica 27(3). 459–487.
Sakel, Jeanette. 2007. Types of loan: Matter and pattern. In Yaron Matras & Jeanette Sakel (eds.), Grammatical borrowing in cross-linguistic perspective, 15–29. Berlin & New York: Mouton de Gruyter.
Thomason, Sarah G. & Terrence Kaufman. 1988. Language contact, creolization, and genetic linguistics. Berkeley: University of California Press.
Van Coetsem, Frans. 2000. A general and unified theory of the transmission process in language contact. Heidelberg: Winter.

The acquisition of morphology

Dorit Ravid, Tel Aviv University

The course will present current topics in the acquisition of morphology from a psycholinguistic perspective, as against the background of theoretical issues and linguistic typology. As a linguistic domain that extends to both structure and semantics, syntax and the lexicon, the different parts of the course will continuously pick up on these themes in relation to the topics under analysis. Methodological issues regarding the elicitation of morphological forms and meanings in child language experimentation and the analysis of morphology in child-directed speech and child discourse will be discussed. The three parts of the course will be as follows: (i) theories of morphological detection, comprehension and acquisition in infants and children; (ii) inflectional and derivational morphology across child development in early and later language acquisition, and the role of morphology in development of literacy (spelling and reading); (iii) morphological impairment in language and learning disorders, and morphological learning in children from different socio-economic backgrounds.

Morphological Processing

Martina Penke, Heinrich-Heine-Universität, Düsseldorf

This basic course aims to give an introduction into some key topics in morphological processing. The course provides an introduction into core terms and concepts related to morphological processing as well as an introduction into the most important experimental methodologies adopted in investigating morphological processing (e.g. lexical decision, priming, off-line methods). The course consists of three lectures.

Topics of the first lecture are:
- Short introduction into the relevant terms and concepts (free and bound morphemes, inflection, derivation and compounding, theories on morphology and lexicon)
- Why is there morphology? What is the role of morphology in parsing?
- Why are there different types of morphology (agglutinative, fusional)? Are there advantages or disadvantages associated with these different morphological types?

- Why do we have suffixes rather than prefixes?
- What happens when we hear or read complex words?

The second lecture focusses on the so-called Dual-Mechanism Debate on the status of inflectional affixes. Since the mid 80s the processing of inflectional morphology has been at the heart of the debate between two different approaches to human cognition: the symbolic and the anti-symbolic approach to mental computations (cf. Rumelhart & McClelland 1986, Pinker 1999, Marcus 2001, Ambridge & Lieven 2011, Penke 2012). According to the symbolic view of cognitive processing, inflected word forms are structurally composed out of component morphemes by application of a mental operation that combines morphemes displaying the right abstract features such as [+V] or [+PAST]. Hence, an English past-tense form such as inflected is composed by an operation combining the verb stem inflect[V] with a past-tense marker -ed[PAST]. Antisymbolic approaches assume instead that inflected forms are structurally non-compositional and are learned and stored as whole-word forms in an associative memory network.

Topics of this lecture are:
- Are inflected word forms decomposed into stem and affix morphemes?
- What is the status of inflectional morphemes? Are they epiphenomena or entities stored in the mental lexicon?
- How do connectionist networks represent inflected word forms?

The third lecture covers the topic of how complex words and bound morphemes are represented in the mental lexicon in more depth taking up issues from the first two lectures:
- What is the evidence that bound morphemes have lexical entries?
- How does a lexical entry for an inflectional affix might look like?
- How are irregular inflected words stored in the mental lexicon?
- Is morphological processing universal? Or do different morphological systems lead to differences in morphological processing?
- Is morphological processing amodal? Or do visual and auditory morphological processing differ?

Suggested readings
Diependaele, K.; Grainger, J. & D. Sandra (2012): Derivational morphology and skilled reading. In: Spivey, M.; McRae, K. & M. Joanisse (eds.): The Cambridge Handbook of Psycholinguistics. CUP.
Marslen-Wilson, W. (2009): Morphological processes in language comprehension. In: G. Gaskell (ed): Oxford Handbook of Psycholinguistics. OUP.
Penke, Martina (2006): The representation of inflectional morphology in the mental lexicon: an overview on psycho- and neurolinguistic methods and results. In: Dieter Wunderlich (Hrsg.): Advances in the Theory of the Lexicon. Berlin: Mouton de Gruyter, 389-428. Pdf available
Penke, Martina (2012): The Dual-Mechanism Debate. In: Markus Werning, Wolfram Hinzen & Edouard Machery (Hrsg.): The Oxford Handbook of Compositionality. Oxford: Oxford University Press, 574-595.

Aspects of bilingual lexical processing

Hélène Giraudo, Laboratoire Cognition, Langues, Langage, Ergonomie (CNRS), Toulouse 2 le Mirail University, Toulouse, France
Madeleine Voga, Univerité Paul-Valéry, Montpellier 3, France

According to the theoretical view presented by Bybee (1985), morphology is the factor that clusters the lexicon and this organisation transcends languages. Such an organisation would therefore be reflected in bilingual and second language online processing, where morphology is the factor linking lexical representations.

We will focus on two areas of the psycholinguistic literature: first, the cognate effect and the different circumstances under which it is (or isn't) observed, depending on linguistic materials, inter-alphabet, e.g. English-Dutch, or intra-alphabet, e.g. Greek-French, as well as priming directions. We will present several studies (refs 1/2/3/4/5/6), many of which use masked priming, aiming to bring to the fore the precise role of morphology in the cognate effect, its implications for the bilingual lexicon, as well as the somehow neglected aspects of the domain, very promising for future research.

The second area concerns the L2-L2 direction of priming in advanced learners: Recent studies suggested that the computational component of morphological processing is impaired, a conclusion essentially based on data showing insensitivity in inflectional priming (ref. 7). From the other hand, studies focusing on the L2-L2 priming direction or comparing the performance of native and non-native reach the opposite conclusion (refs 3/8/9).

1. Kirsner, K., Lalor, E., & Hird, K. (1993). The bilingual lexicon: Exercise, meaning and morphology. In R. Schreuder & B. Weltens (Eds.), The bilingual lexicon. Amsterdam: John Benjamins.
2. Sánchez-Casas, R. García-Albea, J. E. (2005). The representation of cognate and noncognate words on bilingual memory: Can cognate status be characterized as a special kind of morphological relation? In J. F. Kroll y A. M. B. De Groot (Eds.), Handbook of Bilingualism: Psycholinguistic Approaches (pp. 226-250). New York: Oxford University Press.
3. Duñabeitia, J.A., Dimitropoulou, M., Morris, J., & Diependaele, K. (2013). The role of form in morphological priming: Evidence from bilinguals. Language and Cognitive Processes, 28(7), 967-987.
4. Voga, M. & Grainger, J. (2007). Cognate Status and Cross-script Translation Priming. Memory and Cognition 35, 938-952.
5. Voga, M. (2014). Cognatenes and translation priming: the role of the orthographic cue and etymology through two Greek-French experiments. Studies in Greek Linguistics, 34.
6. Gollan, T., Forster, K. I., & Frost, R. (1997). Translation priming with different scripts: Masked priming with cognates and noncognates in Hebrew-English bilinguals. Journal of Experimental Psychology: Learning, Memory and Cognition, 23, 1122-1139.
7. Silva, R. & Clahsen H. (2008). Morphologically complex words in L1 and L2 processing: Evidence from masked priming experiments in English. Bilingualism: Language and Cognition, 11, 245-260.
8. Voga, M., Anastassiadis-Symeonidis, A. & Giraudo, H. (2013). Does morphology play a role in L2 processing? Two masked priming experiments with non-native English speakers. First international symposium "Morphology and its interfaces", Université Lille 3, France, September 12-13, 2013.
9. Dal Maso, S. & Giraudo, H. (2013). The processing of morphologically complex words in Italian L2. First international symposium "Morphology and its interfaces", Université Lille 3, France, September 12-13, 2013.

Methodological Courses

Statistics for Newbies

Melanie Bell, Anglia Ruskin University, UK

This course is intended for those with no previous experience of statistics. It will provide a basic introduction to statistical principles and methods, with a view to building participants' confidence in reading and understanding linguistic studies that use such methods. Topics covered will include: types of data, sampling, patterns of distribution, describing data, testing hypotheses, levels of significance, comparing groups for significant differences, and identifying significant relationships between variables. All examples will use data and problems related to word structure, and will be presented using the statistical software R. Students will be expected to undertake set reading in support of the classes. For those who would like to use statistical techniques in their own work, or simply want to know more, the statistics tutorials will provide an opportunity both to revisit the examples presented in class and to gain hands-on instruction in using the software.

Naive discriminative learning

Harald Baayen, Tuebingen University, Germany

Naive discrimination learning (NDL) is a computational approach to implicit learning (and especially implicit language learning), based on a set of formal principles that have proven fundamental to explaining basic learning effects in humans and animals. Unlike other computational techniques currently employed in psycholinguistics, NDL models scale up to learning from realistic samples of language, and can even simulate the effects of training on corpora of billions of words. These models have proven to be very useful in explaining a large range of phenomena in language processing, ranging from language acquisition and aging to modeling response latencies in lexical decision. The NDL model can also be used as a statistical classifier.

Theoretically, the NDL approach is highly compatible with formal, information theoretic approaches to communication, and another attractive property of NDL is that it can help explain why language is intrinsically sensitive to probability, without having to assume that linguistic processes rely on explicit counting, or that the mind contains a homunculus with an advanced degree in statistics.

Thursday: The first session introduces the Rescorla-Wagner equations and the equilibrium equations for the Rescorla-Wagner model, familiarizing participants with the NDL package for R, which provides a toolkit for working with naive discrimination learning. The second half of this session will discuss key studies by Michael Ramscar and colleagues, and will illustrate how the NDL package can be used to construct the models and the associated predictions discussed in these papers. The data sets in this session will pertain mostly to language acquisition.

Friday: The second session provides an overview of how NDL has been used to help predict processing costs in visual lexical decision and eye-tracking, in word naming, and speech production. Data will cover mostly lexical processing in L1, but one modeling example of bilingual lexical processing will be presented as well.

Saturday: In the first half of the third session, examples of how NDL can be used as a classifier will be discussed. In the second part of this session, the advantages of the "discriminative stance" as a theoretical perspective on language will be illustrated by means of a detailed examination of the currently highly popular but misguided view that cognitive faculties would decline over the lifetime. The importance, for computational modeling, of selecting corpora that properly reflect the language experience of participants in experimental studies will also be highlighted.

Please install: Cyrus Shaoul, Antti Arppe, Peter Hendrix, Petar Milin and R. Harald Baayen. (2013). ndl: Naive Discriminative Learning. R package version 0.2.14. http://CRAN.R-project.org/package=ndl

Suggested readings:
Baayen, R. H. (2010). Assessing the processing consequences of segment reduction in Dutch with naive discriminative learning. Lingue & Linguaggio 9, 95–112.
Baayen, R. H. (2010). Demythologizing the word frequency effect: A discriminative learning perspective. The Mental Lexicon 5, 436-461.
Baayen, R. H. (2011). Corpus linguistics and naive discriminative learning. Brazilian Journal of Applied Linguistics 11, 295–328.
Ramscar, M., Dye, M., and McCauley, S.M., Error and expectation in language learning: The curious absence of "mouses" in adult speech. To appear inLanguage.

Computational morphology for newbies: automata and hierarchical lexica

Gábor Prószéky, Pázmány Péter Catholic University, Budapest, Hungary

Computational morphology is a general term for automatic approaches that identify or generate word structures of human languages. The main methods of the mostly used approaches are introduced in the course. As a formal background, some interesting results of automata theory and directed acyclic graphs are discussed first. Then, two important approaches to morphological analysis and generation— two-level morphology and unification-based morphology—are introduced in details with examples from several languages. Their expansions to various real-life applications that cause difficulties to the basic methods (search algorithms, proofing tools, etc.) are also discussed. The course is going to deal not only with inflectional, derivational and compositional morphologies, but with topics like analogical approaches, morphological guessing, syntax-morphology interface, treatment of morphological ambiguities and some questions of morpho-graphemics. Traditional and feature-based lexical representations for the above morphological approaches are also discussed.

Connectionist architectures for lexical modelling

Claudia Marzi, Marcello Ferro
Institute for Computational Linguistics, CNR, Italy

The course will focus on the computational simulation of biologically inspired neural architectures of the mental lexicon, which offer the possibility for an analytical study of the developmental and self-organising processes governing the acquisition of the morphological lexicon in different languages, to reproduce a wide range of naturalistic conditions of both mono- and multi-lingual input exposure, and to shed light on the complex dynamics triggered by the acquisition of more than one language – either concurrently or deferred in time.

We will firstly review connectionist architectures for lexical modelling, focusing on artificial neural network models ranging from classical supervised Multi-Layer Perceptrons (MLPs), where morphology acquisition is modelled as a one-to-one mapping task, to unsupervised Self-Organising Maps (SOMs), where emergent morphological patterns play an important role in word processing and acquisition. We will then outline a particular variant of SOM, where an additional temporal connection layer encodes probabilistic expectations based on past experience on the assumption of the lexicon as a redundant store.

In the frame of this latter architecture, lexical modelling will be addressed in terms of processing and storage dynamics, training parameters, incremental learning regime, and evaluation methods.

Obtaining behavioural data for lexical research

Emmanuel Keuleers, Ghent University, Belgium

This module will begin with an overview of the most commonly used experimental methods in psycholinguistic research. We will cover lexical decision, naming, eye-tracking, and EEG. Next, we will focus more deeply on how to set up methodologically sound experiments, with an emphasis on stimulus selection and factorial and continuous experimental designs. Finally, we will discuss how to make (re)-use of existing behavioral resources and how to collect behavioral resources with re-use in mind. As an illustration, we will design and set-up an experiment to collect behavioral data online.

Neurolinguistic issues in lexical access and organisation

Mila Vulchanova, Norwegian University of Science and Technology, Trondheim, Norway
Vito Pirrelli, Institute for Computational Linguistics, CNR, Italy

The course is intended to provide an integrated view of the role of the perisylvian network in language processing and storage, based on recent neuroanatomical evidence of a bidirectional pathway from the Superior Temporal Gyrus (STG, or “Wernicke’s area”) to “Broca’s area” through the inferior parietal lobe (IPL, or “Geschwind’s area”, Catani et al., 2005). The network defines the neuro-cognitive substrate to the retention of sequences of linguistic units and orosensory goals for their vocalization in working memory (Gathercole and Baddeley, 1989; Papagno et al., 1991). We will introduce a model of the mental lexicon based on the principles of word storage and access. In particular, we will explore the role of verbal working memory in lexical processing and acquisition, as a dynamic form of sensory-motor integration. Under this view, which will also be exemplified and illustrated through computational models, integration of auditory-motor circuits ensures maintenance/control of transient activation of long-term memory structures in the absence of external stimuli.