# LI 7843 Linguistic Typology (John Saeed)

Hilary Term

#### Aims:

The module's mains aims are (i) to introduce students to the study of the structural similarities and differences between the languages of the world; (ii) to familiarize students with the principles of research in linguistic typology, including how representative language samples are established; (iii) to give students experience of the practical analysis of cross-linguistic patterns that are found in phonology, morphology and syntax; and (iv) to familiarize students with the tasks of formulating and evaluating typological argumentation.

#### Syllabus:

The module topics include the genetic classification of languages, phonological inventories, word order, word classes, case marking, classication systems, ergativity, complex predication, and spatial language and lexicalization. The module also covers methodology and sampling. An important element is weekly exercises in the typological decription of languages unfamiliar to the students.

#### Learning outcomes:

On successful completion of this module students should be able to:

- Describe in detail the basic theoretical framework for the systematic analysis of language diversity
- Apply the tools of typological analysis to genetically unrelated languages
- Explain how competing claims about cross-linguistic structural properties may be evaluated
- Analyse how typological analysis relates to historical linguistics, areal linguistics and language contact.

#### Assessment:

Students write an assignment of 4,000 words.

## Suggested readings:

Moravcsik, Edith A. 2013. Introducing Language Typology. Cambridge: Cambridge University Press. (Textbook)

Comrie, B. 1989. Language Universals and Linguistic Typology: Syntax and Morphology. Chicago: University of Chicago Press.

- Croft, W. 2002. *Typology and Universals*. (2nd ed.) Cambridge: Cambridge University Press.
- Dryer, M. S. & M. Haspelmath. (eds.) 2013. *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. At <a href="http://wals.info">http://wals.info</a>
- Payne, T.E. 2006. Exploring Language Structure: A Student's Guide. Cambridge: Cambridge University Press.
- Shopen, Timothy (ed.) 2007. Language Typology and Syntactic Description. Three volumes. Second edition. Cambridge: Cambridge University Press.
- Song, Jae Jung. 2001. Linguistic Typology: Morphology and Syntax. Harlow: Longman.
- Song, Jae Jung (ed.) 2011. *The Oxford Handbook of Linguistic Typology*. Oxford: Oxford University Press.

## LI 7856 Describing Grammar (John Saeed)

Michaelmas term

#### Aims:

The module's main aims are (i) to introduce students to the basic concepts of grammatical description, focusing on syntactic description; (ii) to familiarize students with the basic features of sentence structure: syntactic categories, constituency, and dependency; (iii) to give students experience of the practical description of the grammatical structures of languages; and (iv) to familiarize students with the tasks of formulating and evaluating syntactic argumentation.

#### Working methods:

The topics of the module are introduced in lectures and explored and developed in workshops and seminars. Exercises and discussion will focus on a range of languages in addition to English. The module assumes no previous knowledge of morphology and syntax.

#### Syllabus:

The module topics include the basic features of sentence structure: syntactic categories, constituency, dependency, agreement, the subordination and co-ordination of sentences. The course also covers relationships within sentences (word order, grammatical relations and case systems) and valency processes (for example, passives, causatives and applicatives). A major theme is the relationships between syntactic and lexical rules. The course includes exercises in the syntactic description of English and other languages.

# Learning outcomes:

On successful completion of this module students should be able to:

- Demonstrate a knowledge of the basic features of sentence structure: syntactic categories, constituency, and dependency
- Apply the tools of a functional and lexicalist view of grammar to the description of simple sentences in English and one or more other languages
- Explain how cross-linguistic syntactic variation may be described
- Analyse how syntactic rules and processes interface with other levels of linguistic knowledge, in particular with the semantics of verbal argument structure.

Students write an assignment of 4,000 words developing themes introduced in the module and applying them to the syntactic description of one or more languages.

## Suggested readings:

- Aronoff, Mark and Kirsten Fudeman. 2005. What is Morphology? Oxford: Blackwell.
- Kroeger, P.R. 2005. *Analyzing Grammar: An Introduction*. Cambridge: Cambridge University Press.
- Pavey, Emma L. 2010. *The Structure of Language*. Cambridge: Cambridge University Press.
- Payne, Thomas E. 2006. Exploring Language Structure: A Student's Guide. Cambridge: Cambridge University Press (textbook)
- Tallerman, Maggie. 2015. *Understanding Syntax*. Fourth edition. Abingdon, UK: Routledge. (textbook)
- Van Valin Jr., R. D. 2001. *Introduction to Syntax*. Cambridge: Cambridge University Press.

## LI 7857 Language Acquisition (Francesca La Morgia) Hilary Term

#### Aims:

The general aim of this module is to introduce students to the known facts, the principal theoretical issues and the current areas of debate relative to language acquisition. The module will include within its purview child language development involving a single language, the acquisition in childhood of two or more languages, and the learning of additional languages later in life. As well as examining the above acquisitional phenomena themselves, the module will outline the research methodologies deployed in their investigation.

#### Working methods:

The topics of the module will be presented in lecture form and will be further explored in group discussion. Students will be pointed towards readings dealing with aspects of material covered in class and will be encouraged to link such material to their own experience as language learners and teachers.

#### **Syllabus:**

Specific themes addressed in the module will include:

- The major milestones of child language development
- Behaviourist and Nativist perspectives
- Language Acquisition and age
- Input modification and its effects
- The Critical Period Hypothesis
- Bi-/Multilingualism
- Cross-linguistic and developmental aspects of multiple language learning

## Learning outcomes:

On successful completion of this module students will be able to:

- Discuss language acquisition on the basis of the agreed central facts of monolingual child language development, simultaneous bi-/multilingual acquisition and additional language learning.
- Engage in informed debate about the controversial questions associated with the above and of a range of theoretical perspectives attempting to address such question.
- Provide evidence of a critical awareness of the range of research methodologies used by language acquisition researchers.

Students will write an assignment of 3,000 words on one of the syllabus themes.

## Suggested readings:

- Aronin, Larissa and David Singleton. 2012. *Multilingualism*. Amsterdam: John Benjamins.
- Baker, Colin. 2006. Foundations of Bilingual Education and Bilingualism. 4th ed. Clevedon: Multilingual Matters Ltd.
- Clark, Eve V. 2003. *First Language Acquisition*. Cambridge: Cambridge University Press.
- Cook, V., and D. Singleton (2014). Key topics in second language acquisition. Bristol: Multilingual Matters.
- Cook, Vivian. (ed.) 2002. *Portraits of the L2 User*. Clevedon: Multilingual Matters.
- De Angelis, G. 2007. Third or Additional Language Acquisition. Clevedon: Multilingual Matters
- Ellis, R., and N. Shintani (2014). Exploring language pedagogy through second language acquisition research. London: Routledge.
- Larsen-Freeman, Diane and Michael H. Long. 1991. An Introduction to Second Language Acquisition Research. London: Longman.
- Mitchell, R., Myles, F. Marsden, E. (2013) Second Language Learning Theories. Third Edition. Abingdon: Routledge.
- Ringbom, Håkan. 2007. Cross-linguistic Similarity in Foreign Language Learning. Clevedon: Multilingual Matters.
- Singleton, David and Lisa Ryan. 2004. Language Acquisition: the Age Factor. 2nd ed. Clevedon: Multilingual Matters.
- Singleton, David. 1999. Exploring the Second Language Mental Lexicon. Cambridge: Cambridge University Press.

# LI 7858 Second Language Curriculum Planning and Implementation (Bronagh Catibusic)

Michaelmas term

#### Aims:

This module has three aims: (i) to explore in theory and practice the key pedagogical concepts of learner-centredness and learner autonomy; (ii) to give students a thorough knowledge of learner-centred principles of second language curriculum design and their pedagogical implementation; and (iii) to familiarize students with the Common European Framework of Reference for Languages (CEFR) and the European Language Portfolio (ELP). The module is designed to challenge students to reflect critically on their own experience as language learners and their practice as language teachers.

## Syllabus:

Specific themes addressed in the module include: the theoretical underpinnings of learner-centredness and learner autonomy; the theory and practice of needs analysis in language curriculum design and implementation; the CEFR's action-oriented approach to the description of language use and language learning; how to use the CEFR to design second language curricula; how to use the ELP to implement second language curricula; the target language as the principal medium of language teaching and learning; the concepts of "scaffolding" and the "zone of proximal development"; the use of writing in the target language to stimulate learner reflection.

## Learning outcomes:

On successful completion of this module students will be able to:

- Explain the concepts of learner-centredness and learner autonomy
- Analyse the descriptive categories of the Common European Framework of Reference for Languages (CEFR)
- Apply the descriptive categories of the CEFR to the analysis of learners' needs
- Employ the descriptive categories of the CEFR to design and generate a scaled second language curriculum
- Employ the European Language Portfolio (ELP) to mediate and implement a scaled second language curriculum

- Apply techniques and theories learned in class in order to develop language learners' capacity to plan, monitor and evaluate their own learning
- Develop and apply practical techniques for developing language learner autonomy

#### Working methods:

The successive topics of the module are presented in lectures and explored in small-group discussion and workshops. Students maintain an online portfolio in which they relate the issues raised in the module to a target language and learner group they are investigating.

#### Assessment:

Students write an assignment of 3-4,000 words that addresses the theoretical implications and practical challenges of a key dimension of second language curriculum design/implementation.

#### Suggested readings

- Council of Europe 2001. A Common European Framework of Reference for Languages. Cambridge: Cambridge University Press. Free electronic version available to download from the Council of Europe website). (Textbook)
- Macalister, J. & Nation, I. S. P. (eds.) 2011. Case Studies in Language Curriculum Design: Concepts and Approaches in Action Around the World. New York: Routledge
- Johnson, R. K. (ed.) 1989. *The Second Language Curriculum*. Cambridge: Cambridge University Press.
- Nation, I. S. P. & Macalister, J. 2009. *Language Curriculum Design*. London: Routledge.
- Little, D. 1991. Learner Autonomy 1: Definitions, Issues and Problems. Dublin: Authentik.
- Dam, L. 1995. Learner Autonomy 3: From Theory to Classroom Practice. Dublin: Authentik.
- Little, D. 2006. The Common European Framework of Reference for Languages: contents, purpose, origin, reception and impact. *Language Teaching* 39.3, pp. 167-90.
- Benson, P. 2001. *Teaching and Researching Autonomy in Language Learning*. Harlow: Pearson Education/Longman.
- Long, M. H. (ed.) 2005. Second Language Needs Analysis. Cambridge: Cambridge University Press.
- Barnes, D. 1976. From Communication to Curriculum. Harmondsworth: Penguin.

# LI 7859 Language Testing (Bronagh Catibusic) Hilary term

#### Aims:

This module has two aims: (i) to familiarize students with fundamental principles in language testing, and (ii) to apply those principles to the design of language tests, scoring/rating schemes, and validation procedures. Particular importance is attached to the development of students' practical ability to design valid and reliable tests.

#### Syllabus:

Specific themes addressed in the module include: types of language test and their purpose; the concept of the criterion in language testing; the testing cycle; the design of test items and test tasks — discrete point vs. integrative tests; the design of scoring and rating procedures; establishing the validity and reliability of language tests; relating tests to the CEFR's proficiency levels.

#### Learning outcomes:

On successful completion of this module students should be able to:

- describe in detail fundamental principles in language testing
- apply those principles to the successive stages of language test design, implementation and validation
- devise and design test items and test tasks
- create a scoring scheme for tests of receptive competence
- design and implement a rating scheme for tests of productive competence
- discuss the measures that are used to explore the stability of individual test items and the reliability of raters
- critically evaluate and appraise the literature in the field *Working methods*:

The class is divided into groups of three or four students and each group is assigned a different language-testing project. Week by week, key topics in language testing are introduced with close reference to the module textbook and other readings. The topics are then explored by the student groups as they gradually develop their projects. In the final week of the module the groups present their completed projects, explaining how they have taken account of the theoretical issues raised in the course of the module. Students are expected to relate their

projects to the proficiency levels of the Common European Framework of Reference for Languages (CEFR).

#### Assessment:

Students prepare and deliver a group presentation as described above. The final presentation contributes towards 40% of students' final score in the module. The remaining 60% is based on an individual written assignment of 2,500 - 3000 words. The student designs a language test to measure the proficiency or learning achievement of a particular group of language learners. The test, which must not replicate any of the group projects developed during the module, may focus on one particular skill or on a combination of skills. It is presented in a discursive assignment that briefly describes the chosen group of learners and their learning goal, explains the choice of test, justifies the test design, describes the rating and scoring procedures, and outlines appropriate validation procedures.

## Suggested readings:

- McNamara, T. 2000. Language Testing. Oxford: Oxford University Press.
- Council of Europe. 2001. Common European Framework of Reference for Languages: Learning, teaching, assessment. Cambridge: Cambridge University Press. (Free electronic version available to download from the Council of Europe website).
- Shohamy, E. 2001. The Power of Tests. A Critical Perspective on the Use of Language Tests. Harlow: Pearson Education.
- Alderson, J. C., C. Clapham, and D. Wall. 1995. Language Test Construction and Evaluation. Cambridge: Cambridge University Press.
- Bachman, L. F. 1990. Fundamental Considerations in Language Testing. Oxford: Oxford University Press.
- Bachman, L. F. and A. S. Palmer. 1996. *Language Testing in Practice*. Oxford: Oxford University Press.

# LI 7860 Technology, Language, and Communication (Breffni O'Rourke)

Michaelmas term

#### Aims:

Participants in this module will explore how language and communication are mediated by various technologies, including that of writing. Students will be encouraged to reflect on the relationship between language, communication and technologies on one hand and individual language processing, interactional processes, and the nature of discourse on the other. Lectures, readings and discussions will range over historical, socio-cultural and individual-cognitive levels of analysis as appropriate.

#### Working methods:

The module will be taught through a combination of lectures and workshop activities.

#### Syllabus:

Specific themes addressed in the module include:

- The historical development of writing; the properties of writing systems
- The effects of literacy on our perception of language
- The historical and cultural significance of the printing press
- Audio and video technologies
- Computer-mediated communication
- Mobile-phone text messaging
- Digital literacies

## Learning outcomes:

On successful completion of the module, a student should be able to

- Explain the key steps in the historical emergence of writing
- Explain, with examples, how each of the major writing systems represents language structure
- Discuss the social, cognitive and linguistic significance of writing itself and of the printing press
- Explain the linguistic differences between spoken and written language
- Discuss the nature of written language as used in several communication technologies
- Analyse the linguistic and discourse structure of linguistic interaction in a number of different communication technologies

Students write an assignment of 3-4,000 words exploring one or more aspects of language and communication as mediated by technologies.

## Suggested Readings:

- Sproat, R., 2010. Language, Technology, and Society. Oxford: Oxford University Press.
- Tagg, C., 2015. Exploring Digital Communication: Language in Action, 1. Abindgon: Routledge.
- Baron, D. E. 2009. A better pencil: readers, writers, and the digital revolution. Oxford: Oxford University Press.
- Seargeant, P., & Tagg, C. 2014. The language of social media: identity and community on the Internet. Basingstoke: Palgrave Macmillan.
- Hutchby, I. 2001. *Conversation and Technology: From the Telephone to the Internet*. Cambridge: Polity.
- Crystal, D. 2001. *Language and the Internet*. Cambridge: Cambridge University Press.
- Olson, D. R. 1994. The World on Paper: The Conceptual and Cognitive Implications of Reading and Writing. Cambridge: Cambridge University Press.
- Rogers, H. (2005). Writing systems: A linguistic approach. London: Blackwell.

# LI 7861 Language Variation and Change (Jeffrey Kallen) Michaelmas term

#### Aims:

This module has three main aims: (i) to examine the principles of language change, including both internally- and externally-motivated change, (ii) to understand language change in relation to linguistic variation, and (iii) to explore the insights arising from different methods in studying language variation. Assignments encourage students to gain first-hand experience in the observation of language variation.

#### **Syllabus:**

Specific themes addressed in the module include:

- Linguistic structure and language change
- Dialectology: models of linguistic history
- Real- and apparent-time indications of change
- Speaker variables: age, gender, social class, ethnicity
- Social networks and communities of practice
- Standardization as a social process
- Dialect convergence and divergence
- Language contact and language change
- Data sources in the study of language variation and change

# Learning outcomes:

On successful completion of the module, students should be able to:

- Understand the relationships between linguistic theory and language variation
- Identify socially-significant variables within languages and to examine these in the light of hypotheses on historical change
- Critically discuss language standardization as a social process
- Critically discuss processes of language contact, creolisation, diffusion, and death

#### Assessment:

Students write an assignment of 3,000 to 4,000 words that uses empirical data to present and analyse a problem in language variation and change. Data may come from any language, and direct observation (whether of spoken, written, or recorded material) is encouraged.

## Suggested readings:

Chambers, J. K. and Peter Trudgill. 1998. *Dialectology*. 2nd ed. Cambridge: Cambridge University Press.

- Chambers, J. K. et al. (eds.). 2002. The Handbook of Language Variation and Change. Oxford: Blackwell.
- Labov, William. 1972. Sociolinguistic Patterns. Philadelphia: University of Pennsylvania Press.
- Mallinson, Christine et al. (eds). 2013. Data Collection in Sociolinguistics: Methods and Applications. London: Routledge Schilling, Natalie. 2013. Sociolinguistic Fieldwork. Cambridge.

## LI 7862 Linguistic Pragmatics (John Saeed)

Hilary term

#### Aims:

The module's main aims are (i) to introduce students to inferential theories of pragmatics; (ii) to familiarize students with Relevance Theory in particular; and (iii) to give students experience of the practical description of conversational data.

### Working methods:

The topics of the module are introduced in lectures and explored and developed in workshops and seminars. Practical description will focus on English but student speakers of other languages will be encouraged to apply their analyses to their first languages.

#### Syllabus:

Specific topics included in this module include:

- Grice and conversational maxims
- the principle of Relevance
- conceptual and procedural meaning
- the under-specification of meaning and processes of contextual enrichment
- lexical pragmatics
- coherence relations in discourse
- metaphor, irony and humour
- the functions of discourse connectives

# Learning outcomes:

On successful completion of the module, students will be able to:

- demonstrate a theoretically informed awareness of the importance of inference and context to linguistic communication
- demonstrate an understanding of attempts to classify communication types
- explain Relevance Theory
- apply Relevance Theoretical analyses to conversational data

#### Assessment:

Students write an assignment of 3,000 to 4,000 words.

## Suggested readings:

Huang, Yan. 2007. *Pragmatics*. Oxford: Oxford University Press. (Important text)

Clark, Billy. 2013. *Relevance Theory*. Cambridge: Cambridge University Press. *(Important text)* 

- Birner, Betty. 2012. *Introduction to Pragmatics*. Chichester: Wiley-Blackwell.
- Blakemore, Diane. 1992. *Understanding Utterances: An Introduction to Pragmatics*. Oxford: Blackwell.
- Carston, Robyn. 2002. Thoughts and Utterances: The Pragmatics of Explicit Communication. Oxford: Blackwell.
- Grice, H. P. 1989. *Studies in the Way of Words*. Cambridge, MA: Harvard University Press.
- Levinson, Stephen C. 2000. Presumptive Meanings: The Theory of Generalized Conversational Implicature. Cambridge, MA: MIT Press.
- Levinson, Stephen C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
- Wilson, Deirdre, and Dan Sperber, 2012. *Meaning and Relevance*. Cambridge: Cambridge University Press.

## LI 7864 Corpus Linguistics (Elaine Uí Dhonnchadha) Hilary term

#### Aims:

A corpus consists of a large body of language samples (written/spoken/signed/gestural) which are held electronically in text, audio and/or video form. Corpora can be used to provide evidence for linguistic research (in syntax, morphology, stylistics, pragmatics etc.), they can be used in historical and sociolinguistic studies, they can be used to generate authentic language teaching materials and language testing materials, and they are used in the generation and testing of speech and language processing tools.

This module will introduce students to the principles of corpus creation (i.e. design, collection, and annotation), and students will gain experience of using various types of corpora, corpus query tools, and corpus annotation tools.

#### Syllabus:

The module will cover:

- Corpus design, and collection and preparation of corpus materials
- Various levels of linguistic annotation, e.g. part-of-speech, phrase structure, phonetic, prosodic, gesture etc.
- Manual and automatic annotation, and evaluation/verification methods
- Use of corpora in Theoretical and Applied Linguistic Research, and in Language Teaching/Learning
- In the Lab, various types of corpora and corpus query tools

## **Learning Outcomes:**

On successful completion of the module, students will be able to:

- Identify the benefits and limitations of using corpora in various linguistic domains.
- Analyse the requirements and formulate a corpus creation plan
- Examine the current annotation standards and tools and select/develop appropriate standards and annotation tools for the particular research task
- Use of various types of corpora and corpus query tools.

Assessment for this module, amounting to approximately 3-4,000 words, will consist of a written assignment on an aspect of corpus development and/or use.

## Suggested Readings:

Relevant papers are handed out each week.

- Developing Linguistic Corpora: a Guide to Good Practice. <a href="http://www.ahds.ac.uk/creating/guides/linguistic-corpora/index.htm">http://www.ahds.ac.uk/creating/guides/linguistic-corpora/index.htm</a>
- Adolphs, A. 2006. Introducing electronic text analysis: a practical guide for language and literary studies. London: Routledge.
- Hoffmann, Sebastian et al. 2008. *Corpus linguistics with BNCweb a practical guide*. Oxford: Peter Lang.
- O'Keeffe, Anne and McCarthy, Michael (eds.) 2010. The Routledge Handbook of Corpus Linguistics. London: Routledge.
- Pustejovsky, J. & Stubbs, A. 2012. Natural Language Annotation for Machine Learning: A Guide to Corpus-Building for Applications. O'Reilly Media
- McEnery, T., R. Xiao and Y. Tono 2006. *Corpus-based Language Studies*. London: Routledge.
- Hunston, Susan 2002. *Corpora in Applied Linguistics*. Cambridge University Press
- Abeillé, A. 2003. *Treebanks: Building and Using Parsed Corpora*. London: Kluwer.
- Sinclair, John M. 2004. *Trust the Text: Language, Corpus and Discourse*. London: Routledge.
- Meyer, Charles F. 2002. *English Corpus Linguistics*. Cambridge: Cambridge University Press.

# LI7866 Bilingualism and the maintenance of Irish (Sarah O'Brien) Hilary term

#### Aims:

On successful completion of this module students should be able to:

- Analyse general issues and concepts in research on individual and societal bilingualism
- Assess research on early bilingual acquisition of language and on bilingualism and thought
- Critically analyse the factors affecting minority and endangered languages, and the circumstances in which language loss and language attrition are likely to occur
- Describe and assess the nature and extent of Irish/English bilingualism
- Examine the history of the Irish language and assess efforts to revitalise it
- Appraise the current position of Irish in comparative minoritylanguage context and evaluate the potential of language planning and maintenance initiatives
- Assess the role of the education system in ensuring intergenerational transmission of the Irish language
- Evaluate theory and research in psycholinguistics, sociolinguistics and education that are relevant to bilingualism and the promotion of Irish.

Note: Students do not need to be able to speak Irish to take this module. The module uses the Irish language in Ireland as a case study through which to explore bilingualism and the maintenance of minority languages.

This module has four aims: (i) to introduce key concepts and theories in bilingualism (2) to examine bilingualism and language maintenance in Ireland in a historical and a comparative context, making reference to other minority language situations; (3) to critically evaluate successes and failures in national efforts to revitalise Irish; and (4) to assess the contribution of the education system to the intergenerational transmission of the language.

The course is intended as an introduction to sociolinguistic research for students who are considering research either on bilingualism or on the Irish language.

The topics are presented in lectures and explored in class discussions. Each student also presents a mid term paper to the class on either a) an aspect of bilingualism; b) on a particular bilingual or minority language situation with which the student is familiar; c) on a language planning/maintenance issue with which the student is familiar. Specific themes addressed in the module include:

- General issues and concepts in individual and societal bilingualism
- Bilingual first language acquisition and bilingual processing
- Code-switching, code-mixing and borrowing
- Minority and endangered languages, language loss and language attrition
- The nature and extent of Irish/English bilingualism today
- National efforts to revitalise Irish since the foundation of the state; levels of support for various measures
- Successes and failures in learning Irish at primary level; Long-term trends in attainment
- Classroom learning of Irish; attitudes of teachers, children and parents
- Bilingual education and immersion; Educational models that promote additive bilingualism
- Bilingualism and Identity; the role of minority language proficiency in identity development

## Suggested Readings:

- Baker, C., (2006) Foundations of bilingual education and bilingualism (Third Edition). Clevedon: Multilingual Matters.
- Bhatia, T. and W. C. Ritchie, (eds.), (2004) The Handbook of Bilingualism. Oxford: Blackwell.
- Dornyei, Z. (2005) The Psychology of the language learner.NJ: Lawrence Erlbaum Associates.
- Fishman, J. A., (ed.), (2001) Can Threatened Languages be Saved? Clevedon: Multilingual Matters.
- Harris, J. (Ed) (2007) Special Issue: Bilingual education and bilingualism in Ireland North and South. International Journal of Bilingual Education and Bilingualism, 10(4).
- Harris, J., Forde, P., Archer, P., Nic Fhearaile, S. and O Gorman, M. (2006) Irish in primary school: Long term national trends in achievement in Irish. Dublin: Department of Education and Science.
- McCardle, P. and Hoff, E. (Eds) (2006) Childhood bilingualism: Research on infancy through school age. Clevedon: Multilingual Matters.

O' Riagain, P., (1997) Language Policy and Social Reproduction: Ireland 1893-1993. Oxford: Oxford University Press.

# Assessment:

Final term 3-4,000 word assignment (70%) Mid term Paper presentation (30%)

## LI 7867 Laboratory Phonetics and Phonology (Ailbhe Ní Chasaide) Hilary term

#### Aims:

This course introduces students to the laboratory investigation of the segmental and prosodic systems of languages. It provides a practical training in specific analytic techniques: although the primary focus is on acoustic analysis methods, students are also introduced to other analysis techniques, which involve articulatory and (time permitting) aerodynamic data.

The course focusses on a series of experimental tasks associated with key aspects of linguistic structure, in order to provide an understanding of (i) the primary phonetic dimensions of speech generation, (ii) how these phonetic dimensions are exploited in the sound systems of different languages, and (iii) the interactions of phonetic and phonological factors in determining the sound systems of languages.

#### Syllabus:

The course is delivered in terms of a number of topics, each of which explores some aspect of the human speech production capacity. With each topic the student is required to carry out and write up a practical analytic task, which serves to focus on how different languages exploit this dimension in their sound systems. Analysis techniques can include spectrography, pitch extraction, electropalatography and airflow transduction (oral and nasal). The topics which are the basis for analysis are a selection from the following:

- Voice production, including: how voice is generated; how voice is used in spoken communication; a cross-language perspective on phonological voicing contrasts
- Source Filter in speech production
- Vowel systems
- Lingual articulation of consonants: secondary articulation and gestural overlap
- Coarticulation, including cross-language differences in lingual coarticulation and phonological constraints on coarticulation.
- Prosody: phonetic dimensions and their use in linguistic systems

## Learning outcomes:

On successful completion of the module students will be able to:

- explain the interplay between the production of speech and the structural characteristics of sound systems
- analyse the cross language diversity in phonetic/phonological systems
- demonstrate basic skills in empirical analysis of speech data, including the selection of techniques appropriate to analyse particular issues; how the data are recorded; and knowledge of how the data are represented, segmented, and interpreted for linguistic analysis.
- present and write up experimental data

Assessment is based on a written assignment of 3-4,000 words which expands on one of the experimental tasks undertaken during the course.

## Suggested Readings:

- Ladefoged, P. 2005. *Elements of Acoustic Phonetics*. 3rd ed. Chicago: University of Chicago Press.
- Hayward, K. 2000. Experimental Phonetics. Harlow: Longman.
- Gobl, C and Ní Chasaide, A. 2010. *Voice Source Variation and its Communicative Functions*. In Hardcastle, W., J. Laver & F. Gibbon, *The Handbook of Phonetic Sciences*. 2<sup>nd</sup> ed. Oxford: Wiley-Blackwell.
- Ladefoged, P. and K. Johnson. 2011. *A Course in Phonetics*. New York: Harcourt Brace Jovanovich.
- Johnson, K. 2002. *Acoustic & Auditory Phonetics*. 2nd ed. Oxford: Blackwell.
- Ladd, D.R. 2006. *Intonational Phonology*. Cambridge: Cambridge University Press.
- Cruttenden, A. 1986. *Intonation*. Cambridge: Cambridge University Press
- Fry, D. 1979. Acoustic features of English Consonants. In *The physics of speech*. Cambridge: Cambridge University Press.
- Catford, J. 1977. Fundamental Problems in Phonetics. Bloomington: University of Indiana Press

# LI 7868 Describing the Sounds of Languages (Irena Yanushevskaya, Ailbhe Ní Chasaide)

Michaelmas term

#### Aims:

This module aims to provide students with an understanding of (i) how speech sounds are produced, (ii) the traditional articulatory phonetic systems used to describe, classify and transcribe them, and (iii) acoustic measures that extend such articulatory descriptions. This module also aims to provide (iv) an understanding of the principles of phonemic analysis, and (v) a basic training in simple phonemic analysis and in broad and narrow transcription. Illustrative and exercise materials are drawn from a wide variety of languages. In addition to formal lectures there are scheduled practical ear training and transcription tutorials.

#### **Syllabus:**

The course covers the following topics:

- Initiation and respiratory aspects of speech production
- Phonation
- The speech organs
- Coarticulation
- Phonetic (narrow) and phonemic (broad) transcription
- Phonemic analysis: basic concepts and practice

## Learning outcomes:

On successful completion of the module, students should be able to:

- outline the principles of phonetic description of speech sounds;
- appropriately use standard descriptive terminology in phonetic and phonological description;
- identify basic concepts and methods of phonemic analysis;
- analyse and describe the articulation of speech sounds, consonants and vowels, within the framework of the International Phonetic Association;
- identify and discriminate between a wide range of speech sounds occurring in languages of the world;

- transcribe individual sounds and longer speech samples using the International Phonetic Alphabet using both broad and narrow phonetic transcription;
- select and use appropriate type of transcription (systematic, impressionistic) based on the nature of the analysis;
- apply the analytical and transcription skills to the description of sounds from unfamiliar languages;
- analyse phonetically transcribed data sets to perform basic phonological analyses

Assessment will be based on exercises carried out during the term (50%) and a short practical task (50%) which is submitted by week 11.

## Suggested Readings:

- Ladefoged, P. and K. Johnson. 2011. *A Course in Phonetics*. New York: Harcourt Brace Jovanovich.
- Clark, J., Yallop, C., and Fletcher, J. 2007. *An Introduction to Phonetics and Phonology*. 3rd ed. Oxford: Blackwell.
- International Phonetic Association. 1999. The Handbook of the International Phonetic Association. Cambridge: Cambridge University Press.
- Ladefoged, P. and I. Maddieson. 1999. The Sounds of the World's Languages. Oxford: Blackwell.
- Laver, J. 1994. *Principles of Phonetics*. Cambridge University Press.

## LI 7869 Describing Meaning (John Saeed)

Hilary term

#### Aims:

The course's main aims are (i) to introduce students to the basic challenges facing the linguist seeking to analyse meaning communicated through language; (ii) to familiarize students with some leading representational and denotational approaches to semantics; and (iii) to give students experience of the practical description of the semantic structures of languages.

### Working methods:

The topics of the course are introduced in lectures and explored and developed in workshops and seminars. Exercises and discussion will focus on a range of languages in addition to English.

#### Syllabus:

Specific topics addressed in this module include:

- theories of reference
- lexical relations and the dictionary
- the logical structure of language
- verbal argument structure
- event structure
- information structure
- metaphor and metonymy

## Learning outcomes:

On successful completion of this module students should be able to:

- Apply the arguments for distinguishing the fields of semantics and pragmatics
- Describe the basic aspects of lexical semantics, including the status of lexemes and major lexical relations in English and one or more other languages
- Describe, analyse and apply formal approaches to semantics
- Assess the relationship between context and meaning
- Describe some cognitive accounts of figurative uses of language

Students write an assignment of 3-4,000 words developing themes introduced in the course and applying them to the semantic description of one or more languages.

## Suggested readings:

- Saeed, John I. 2016. Semantics. Fourth edition. Chichester: Wiley-Blackwell. (textbook)
- Allen, K. 1996. *Linguistic Meaning*. 2 volumes. London: Routledge Kegan Paul.
- Cruse, D. A. 1986. *Lexical Semantics*. Cambridge: Cambridge University Press.
- Ungerer, F. and H.-J. Schmid. 2006. *An Introduction to Cognitive Linguistics*. Second edition. Harlow, England: Pearson Education.
- Lakoff, George. 1987. Women, Fire and Dangerous Things: What Categories Reveal about the Mind. Chicago: University of Chicago Press.
- Lyons, John. 1977. *Semantics*. 2 volumes. Cambridge: Cambridge University Press.

## LI 7871 Speech Processing 1: Spectral Analysis (Christer Gobl)

Michaelmas term

#### Aims:

The aim of this module is to provide students with an in-depth knowledge of the basic properties of continuous and discrete signals, and of linear time-invariant (LTI) systems, as the basis for spectral analysis of speech signals. Through the theoretical framework of LTI systems, the source-filter model of speech production is explored as well as different types of speech analysis techniques, including the speech spectrograph. A further aim is to introduce students to key digital signal processing techniques for spectral analysis of speech signals, including the Discrete Fourier Transform, Cepstral analysis and Linear Predictive Coding.

#### **Syllabus:**

Specific themes addressed within the module include:

- Continuous and discrete signals
- LTI systems
- The Source-filter model of speech production
- The Fourier Transform
- Digital Signal Processing: A/D, D/A, DFT, the Cepstrum, LPC
- Spectral analysis of speech signals

## Learning outcomes:

On successful completion of this module the student will be able to:

- Describe the properties of continuous and discrete signals.
- Classify different types of speech signals and describe their general properties in the time and frequency domains.
- Outline the sampling theorem and explain the digitisation process of continuous-time signals and its implications for discrete-time speech processing.
- Describe the properties of linear time-invariant (LTI) systems.
- Define and explain different spectral analysis techniques based on the discrete Fourier transform (DFT) and on linear predictive coding (LPC).
- Apply spectral analysis techniques to the measurement of acoustic speech parameters.

A series of practical exercises, which students carry out during the course, equivalent to 3-4,000 words. Alternatively, an assignment involving a single, larger task is carried out on a key aspect of the course: in this case, assessment is based on the written report (3-4,000 words) of the assignment.

## Suggested readings:

- Rosen, S. & P. Howell. 1999. Signals and Systems for Speech and Hearing. New York: Academic Press.
- Balmer, L. 1997. Signals and Systems: An Introduction. New York: Prentice Hall.
- Johnson, K. 2003. *Acoustic and Auditory Phonetics*. Oxford: Blackwell. Ladefoged, P. 2005. *Elements of Acoustic Phonetics*. 3rd ed. Chicago: University of Chicago Press.

# LI 7872 Formal Foundations of Linguistic Theories (Carl Vogel) Michaelmas term

#### Aims:

The course is designed to establish competence in foundational mathematical concepts used in contemporary cognitive science and computationally-oriented approaches to linguistic theory. Basic concepts of discrete mathematics are reviewed with attention to their relevance in linguistics: sets, operators, relations, trees, logic, formal language theory. Emphasis is placed on finite recursive specification of infinite formal languages as an idealization of grammar specification for natural languages (each of which is thought to be infinite but managed by finite brains). Natural languages are modelled as uninterpreted sets of grammatical sentences whose internal structural complexity has implications related to constraints on human syntactic processing. Human languages are also modelled via their translation into logical languages supplied with deductive mechanisms supplying representational and denotational semantic analysis. Logical languages within a range of expressivity classes are considered in terms of their syntax, semantics, and inference mechanisms as simulations of human recognition, interpretation, and reasoning with natural language expressions. Thus, the aims of the course are to (i) establish competence with the core concepts and analytical tools, (ii) develop awareness of the range of applicability of the tools and concepts within linguistic theory and cognitive science, (iii) foster confident and fluent use of formal methods in analysing human language and reasoning.

## Working methods:

The course relies on lectures and hands-on practice with the formal tools. Self-access practice with the tools is essential. An automated theorem prover is introduced to facilitate specification of formal theories of natural language syntax and semantics within one of the logical languages addressed in the lectures in order to use the theorem prover to test the consequences of theories of language on natural language inputs. Thought-problems designed to test understanding of key concepts will be offered at the end of each session.

## Syllabus:

Topics addressed in the module include:

- Sets, characteristic functions, operators, relations
- Languages as sets of sentences
- Propositional logic: syntax, semantics & valid inference
- Deductive inference and human reasoning
- Predicate logic: syntax, semantics & valid inference
- First order logic (FOL): syntax & semantics & valid inference
- Translating natural language utterances into FOL
- Axiomatizing theories in Prolog (Horn Logic).

## Learning outcomes:

On successful completion of the module students will be able to:

- Define the basic constructs in discrete mathematics: sets (finite, infinite and impossible), algebraic operations on sets (intersection, union, complement, difference), characteristic functions, relations (e.g. reflexivity, transitivity, symmetry), partial orders, total orders, equivalence classes; properties of trees; propositional logic, predicate logic, first order logic, Horn logic (syntax, semantics, limits and valid inference in each case).
- Demonstrate the relevance to syntax of human languages in idealizing natural languages as infinite sets of grammatical sentences;
- Demonstrate the relevance to syntax of human languages in providing finite recursive definitions for infinite logical languages;
- Demonstrate the relevance to semantics of human languages in providing a compositional denotational semantics (with a syntax-semantics interface) to infinite logical languages;
- Explain how natural language semantics may be represented indirectly using formal logical languages and their model-theoretic semantics;
- Specify clear theories of grammar as axioms in a deductive framework capable of testing theoretical predictions;
- Transfer abstract competence to practical

#### Assessment:

Students complete a take-home assignment with a mixture of problems intended to elicit demonstration of mastery of core concepts and ability to reason with those concepts in representing relevant phenomena.

## Recommended Readings:

Course handouts and sources in their bibliographies.

Partee, B. A. ter Meulen and R. Wall. 1993. *Mathematical Methods in Linguistics*. Dordrecht: Kluwer Academic Press.

# LI 7874 Speech Production, Hearing and Perception (Christer Gobl, Ailbhe Ní Chasaide)

Michaelmas term

#### Aims:

This course aims to provide (i) an understanding of the whole process of speech communication, encompassing the speaker and the listener and (ii) an understanding of some of the major models of production, perception and hearing, and (iii) practical, hands-on, experience in conducting production and perception experiments. Central to the course is an understanding of the acoustic theory of speech production, and of the acoustic characteristics of speech sounds. Speech materials are analysed to illustrate the acoustic properties of speech, provide insight into to the underlying mechanisms of speech production, while also providing a basis for speech perception experimentation. The processes of hearing are dealt with along with the auditory transforms of the acoustic signal. Students are introduced to speech synthesis, and through synthesis based experimentation to the methods that may be used to explore the perceptual correlates of speech sounds.

## Syllabus:

Specific themes addressed within the module include:

- Acoustic theory of speech production
- Source filter theory
- Characteristics of the voice source
- Characteristics of the filter: resonance
- Hearing and the auditory system
- Synthesis and its applications in speech perception
- Perception of stops: locus theory
- Categorical perception
- Analysis, synthesis and perception of voice quality

# Learning outcomes:

On successful completion of this module, students should be able to:

- explain the process of speech communication
- describe the acoustic theory of speech production and have knowledge of the acoustic properties of speech sounds
- assess some of the competing theories concerning the perception of speech

- conduct speech production or perception experiments
- interpret, present and write up experimental data

The assessment is based on the conducting and writing up of experimental work on a key topic of the course, equivalent to 3-4,000 words.

### Suggested readings:

Borden, G. J., K. S. Harris & L. J. Raphael. 2003. Speech Science Primer: Physiology, Acoustics, and Perception of Speech. 4th ed. Philadelphia: Lippincott Williams & Wilkins.

Hayward, K. 2000. Experimental Phonetics. London: Longman.

Johnson, K. 2003. Acoustic and Auditory Phonetics. Oxford: Blackwell.

Kent, R. & C. Read. 2002. *The Acoustic Analysis of Speech*. 2nd ed. Baltimore: Singular Publishing Group.

Moore, B. C. J. 2005. *An Introduction to the Psychology of Hearing*. 5th ed. New York: Academic Press.

# LI 7875 Speech Processing 2: Acoustic Modelling (Christer Gobl) Hilary term

#### Aims:

The aim of this module is to provide students with an understanding of the acoustics of speech production and with knowledge about the signal analysis and processing techniques required to model the speech production process for the purpose of generating synthetic speech.

## Syllabus:

A theoretical framework is developed whereby students are introduced to the Laplace transform and the s-plane, the z transform and the z-plane, as well as techniques for the design of digital filters. A further aim is to introduce students to different speech synthesis methodologies which may be used in text-to-speech systems, including parametric, concatenative, and articulatory approaches.

Specific themes addressed within the module include:

- Speech acoustics
- The Source-Filter model of speech production
- The Laplace transform / The z-transform / Impulse invariant transformation
- First and second order filters
- Parametric, concatenative and articulatory methods for speech synthesis and methods for text-to-speech conversion
- Cascade and parallel formant synthesis

# Learning outcomes:

On successful completion of this module, students will be able to:

- Explain the fundamentals of speech acoustics.
- Demonstrate how the speech signal can be modelled in terms of source and filter.
- Design and use discrete-time filters for modelling the acoustics of the vocal tract, by applying techniques involving the Laplace, z- and filter transforms.
- Perform time and frequency domain analysis of cascade and parallel vocal tract models.
- Develop a basic formant synthesiser

#### Assessment:

Students carry out an assignment involving the design and implementation of acoustic models of speech production. Students are

assessed on their implementations and written report of the assignment.

## Suggested readings:

- Johnson, K. 2003. Acoustic and Auditory Phonetics. Oxford: Blackwell.
- Rosen, S., & P. Howell. 1999. Signals and Systems for Speech and Hearing. New York: Academic Press.
- Quatieri, T. F. 2002. Discrete-Time Speech Signal Processing: Principles and Practise. Englewood Cliffs, NJ: Prentice Hall.
- Holmes, J. & W. Holmes. 2001. Speech Synthesis and Recognition. London and New York: Taylor and Francis.
- Dutoit, T. 1997. An Introduction to Text-to-Speech Synthesis. Dordrecht: Kluwer.

# LI 7877 The Pedagogical Grammar of English (Breffni O'Rourke) Michaelmas term

#### Aims:

This module is concerned with the nature and development of L2 grammar, and with grammar as pedagogical content, with specific reference to English. The principal aims are to foster in students a critical awareness of a range of factors affecting the acquisition of L2 grammar, and to provide them with a basis for critically assessing a range of approaches to the teaching of grammar.

### Working methods:

The module will be taught through a combination of lecture, workshop activities based on English grammar points and ELT materials, and student-led discussion.

### Syllabus:

Specific themes addressed in the module include:

- the nature of grammatical rules
- declarative and procedural knowledge
- the roles of conscious and unconscious grammatical knowledge in learning a second or foreign language
- the relationship between grammar and lexis
- the role of output and practice in grammar acquisition
- the role of feedback in grammar acquisition

## Learning outcomes:

On successful completion of the module, students will be able to

- critically discuss a range of conceptions of "grammar" in relation to the enterprise of language learning and teaching
- critically discuss a range of factors affecting the acquisition of L2 grammar
- compare and evaluate a range of approaches to the teaching of grammar
- summarise and critically engage with the current research literature on the acquisition and pedagogy of L2 grammar
- evaluate the challenges posed by specific features of English grammar for the learner of English
- apply the theoretical insights gained to the teaching of English grammar
- evaluate pedagogical tasks and materials for English teaching

#### Assessment:

Students write an assignment of 3-4,000 words exploring one aspect of the theory of grammar pedagogy, underpinned by an understanding of language acquisition. The essay should draw on one or more topics in English grammar by way of illustration and propose a systematic approach to its teaching in a stated context.

## Suggested readings:

- Fotos, S. and H. Nassaji (eds.). 2007. Form-focused Instruction and Teacher Education. Oxford: Oxford University Press.
- Hinkel, E. (Ed.) 2016. Teaching English grammar to speakers of other languages. London: Routledge.
- Hinkel, E. and S. Fotos (eds.). 2002. New Perspectives on Grammar Teaching in Second Language Classrooms.
- Larsen-Freeman, D. 2003. Teaching Language: From Grammar to Grammaring. Boston: Thomson Heinle. (Textbook)
- Thornbury, S. 1999. How to Teach Grammar. London: Longman

## LI 7878 Describing English Grammar (Jeffrey Kallen)

Michaelmas term

#### Aims:

This module has four principal aims: (i) to examine the major syntactic and morphological features of English, using insights from more general linguistic theory and from corpus-based approaches to language, (ii) to understand the principles that account for grammatical variation across the different national varieties, styles, and registers that characterize English, (iii) to develop a critical perspective on the question of what constitutes English grammar, and (iv) to understand the basis of comparing English grammar with the grammars of other languages.

#### Syllabus:

Students are encouraged to make use of data from their own experience as teachers or learners of English. Specific themes addressed in the module include:

- Grammar: description and prescription
- Words: characteristics and classification
- Clauses: simple, embedded, finite and non-finite
- Tense, voice, and aspect
- Adjectives, adverbs, adverbials: pre- and post-modification
- Contrasting English syntax with other languages
- Text type and register: corpus versus competence
- Discourse markers in speech and writing
- Variation and standardization in world and national Englishes
- English contrastive linguistics

## Learning outcomes:

On successful completion of this module, a student should be able to:

- Analyse the syntax of English sentences using insights from linguistic theory
- Compare and contrast major grammatical variations in English as a world language
- Assess the role of register and text type in conditioning grammatical choices
- Evaluate critically the position of grammatical standardization in English

- Be familiar with the use of electronic corpora in studying English grammar
- View the grammar of English in a comparative perspective Assessment:

Students will be required to do one syntax exercised (marked on a Pass/Fail basis) and one 3,000 word essay (which accounts for the final mark).

### Suggested readings:

Thomas, Linda. 1993. Beginning Syntax. Oxford: Blackwell.

Biber, Douglas et al. 1999. Longman Grammar of Spoken and Written English. London: Longman.

Kortmann, Bernd et al. (eds.). 2004. A Handbook of Varieties of English. Vol. 2: Morphology and Syntax. Berlin: Mouton de Gruyter.

Carter, Ronald and Michael McCarthy. 2006. *Cambridge Grammar of English*. Cambridge: Cambridge University Press.

Comrie, Bernard. 1989. Language Universals and Linguistic Typology. 2nd edn. Oxford: Basil Blackwell.

# LI 7879 Research methodology (Gessica De Angelis, Sarah O'Brien) Michaelmas Term

#### Aims:

This tutorial series is an obligatory part of the preparation for the dissertation and has three principal aims: (i) to equip students with the knowledge and skills necessary to critically evaluate published research and to explore different ways of translating research questions in quantitative or qualitative studies; (ii) to introduce the basic concepts, experimental designs and statistical procedures needed to execute research; and (iii) to provide hands-on experience in using the statistical package SPSS to carry out data analysis in linguistics, ELT, applied linguistics and speech and language processing. Training in SPSS will include data entry, presentation of results and the use of the package to conduct statistical tests to check for relationships among groups. Among the statistical tests introduced are Chi-square, Pearson correlation and t-tests (paired and independent).

#### Working methods:

The topics in the part of the series on research methods and experimental design (Sarah O'Brien) are presented in lectures and explored and discussed in class. The statistics sessions (Gessica De Angelis) are composed of a lecture followed by a lab session in which there will be an opportunity for students to implement what they have learned about statistics and SPSS.

## Syllabus:

Specific themes addressed in the tutorials include:

- Qualitative versus quantitative approaches to research
- Descriptive and exploratory research
- Design and analysis of surveys
- Research ethics
- Questionnaire design
- Advantages of a mixed-method approach to data collection interviews and focus groups
- Observation and field research
- Talk-aloud, retrospective and stimulated recall tasks
- Sampling issues in qualitative research/case studies
- Qualitative data analysis (coding and data reduction)
- Descriptive and inferential statistics

- Levels of measurement
- Measures of central tendency and dispersion
- Frequency distributions, the null hypothesis and error types
- Confidence intervals/statistical significance
- Parametric and non-parametric tests to check for a) relationships and b) differences between groups/variables

When students have completed this tutorial series, it is expected that they will:

- Have a thorough understanding of the different qualitative and quantitative approaches to research and to the design of experiments in linguistics and applied linguistics
- Be familiar with topics such as quasi-experimental research, the structure and content of a typical research article and programme evaluation
- Be familiar with the basis concepts of sampling and statistics and understand how to interpret the more common parametric and non-parametric tests
- Be able to enter, modify, analyse, present and interpret data output and results from SPSS
- Be able to use SPSS to present data summaries in visual form.
- Be able to communicate findings and present results from experimental studies
- Be able to interpret and critically evaluate published research findings.

## Suggested Readings:

- Cohen, L, Manion, L & Morrison, K. (2011) Research methods in education. Oxon, UK: Routledge.
- Coolican, H. (2004) Research methods and statistics in psychology. London: Hodder and Stoughton.
- Field, A. (2009). *Discovering Statistics using SPSS*. (3<sup>rd</sup> Ed.) London: Sage Publications.
- Gass, S. & A. Mackey (eds.) (2012) Research Methods in Second Language Acquisition. Oxford: Wiley-Blackwell.

## LI 7883 Multilingualism (Gessica De Angelis and Chiara Viseri) Michaelmas term

#### Aims:

The goal of this module is to introduce students to ideas and concepts of multilingualism, and to examine situations where three or more languages are present in an individual's language repertoire or speech community. This module takes as its point of departure multilingual individuals (children and adults) and their social context. It has three key themes: (1) to explore concepts and theories in multilingual individuals, communities and societies, (2) to introduce cognitive and acquisitional aspects of multilingualism; and (3) to assess critically successes and failures in policies to encourage multilingual language learning and use, particularly in education. The module is intended as an introduction to research for students who are considering research on multilingualism in individuals and societies. Whilst drawing on examples from across the world, the module nevertheless has a strong European flavour, with references to the work of the European Union and Council of Europe in language education policy, and case studies drawn from multilingualism in Europe.

## Syllabus:

Specific aspects addressed in the module include:

- General issues and concepts in individual and societal multilingualism
- Multilingual language acquisition, the role of prior native and non-native language knowledge in the language acquisition process, multilingualism and cognitive development, crosslinguistic influence
- Multilingual education programmes, tools to encourage multilingual language use and learning, and evaluation/assessment
- Language policy and language education policy in multilingual contexts

#### Learning outcomes:

On successful completion of this module, students should be able to:

 Analyse general issues and concepts in research on individual and societal multilingualism

- Critically evaluate theory and research relevant to multilingual practices and policies.
- Assess research on acquisitional and cognitive aspects of multilingual language acquisition
- Examine the impact of official language policies on multilingualism
- Critically assess the role of different types of educational systems and policies in affording opportunities for multilingual language learning and use
- Conduct research on multilingualism in the individual and society Assessment:

The module will involve a site visit to a local example of multilingualism in practice. After this visit, students will write and submit a reaction paper (1000-1500 words) which is weighted at 40% towards the mark for the module. At the end of the module each student will submit a research paper (2000-2500 words) weighted at 60% of the final mark.

## Suggested readings:

- Aronin, L., & Singleton, D. 2012. *Multilingualism*. Amsterdam: John Benjamins.
- De Angelis, G. 2007. *Third or Additional Language Acquisition*. Clevedon: Multilingual Matters.
- Weber, J.-J., & Horner, K. 2012. *Introducing Multilingualism: A Social Approach*. New York: Routledge.

# LI 7884 English Language Teaching Practice 1 (Sarah O'Brien) Michaelmas term

#### Aims:

This module has four aims: (i) to explore the practical implications of language learning theory in classroom practices today; (ii) to deepen students' understanding of the pedagogical implementation of second language curricula in existing classrooms; (iii) to provide students with opportunity to observe and reflect on real teaching practices, lesson plans, teaching materials, and assessment methods; and (iv) to provide students with a supported opportunity to teach in a real language classroom. The module is designed to have students both observe real teaching practices, and reflect critically on these observations. The module aims to provide a solid foundation of knowledge and skills necessary to engage in future language teaching.

### Working methods:

The topics of the module are presented using a range of teaching methods. Theory will be usually be delivered through lectures, and then explored in greater depth through small-group, and whole-class discussion. Students may also be engaged in some practical microteaching (small-scale teaching) demonstrations and evaluation.

### Syllabus:

Specific themes addressed in the module include: teaching methods; curriculum implementation; using pre-existing teaching and learning materials in the classroom; creating lessons plans from syllabi; evaluation of TESOL materials, and student-centred teaching.

## Learning outcomes:

On successful completion of this module students should be able to:

- Evaluate observed teaching practices for their strengths and weaknesses, based on teaching and learning theory
- Evaluate teaching and learning materials in order to select optimal materials to match student needs
- Evaluate the effectiveness of observed classroom-based tasks for student-centredness
- Create a lesson plan from an existing language syllabus
- Reflect on their own teaching practices

#### Assessment:

Students will submit a portfolio (2000 words, 50%) of reflections on classroom observations, which critically evaluates multiple facets of their classroom experience. They will also be evaluated on a practical assignment (50%) where they will demonstrate the teaching of a small classroom task, accompanied by a self-evaluation and reflection paper (1500 words), which draws on teaching and learning theory in relation to their own teaching experience.

#### Suggested readings:

- Cook, V. 2001. Second Language Learning and Language Teaching. 3rd edition London: Arnold.
- Harmer, J. 2001. The Practice of English Language Teaching. 3rd edition. Harlow: Longman.
- Hedge, T. 2000. *Teaching and Learning in the Language Classroom*. Oxford: Oxford University Press.
- Senior, R.M. 2006. *The Experience of Language Teaching*. Cambridge: Cambridge University Press.

# LI 7885 English Language Teaching Practice 2 (Sarah O'Brien) Hilary term

#### Aims:

This module builds on the knowledge gained from the prerequisite module, English Language Teaching Practice 1. It has four aims: (i) to further explore the practical implications of language learning theory in classroom practices today; (ii) to provide students with increased autonomy in the pedagogical implementation of second language curricula into language classrooms; (iii) to further provide students with opportunity to observe and reflect on real teaching practices, lesson plans, teaching materials, and assessment methods; and (iv) to provide students with extensive opportunity to teach in a real language classroom. The module is designed to move students from observing real teaching practices to engaging in actual language teaching, and to reflect critically on these experiences. The module aims to develop the knowledge and skills necessary to engage in future language teaching, based on the foundation provided in English Language Teaching Practice 1.

### Working methods:

The topics of the module are presented using a range of teacher-led and student-centred teaching methods. Theory will be delivered through short lectures and structured classroom discussions every second week. In alternating weeks, students will engage in real-world classroom practices, which will involve both observation and teaching. Scheduled class time in these alternating weeks will be used for group discussion and individual reflection of teaching experiences. Students will also be engaged in teaching demonstrations.

## Syllabus:

Specific themes addressed in the module include: teaching methods; curriculum implementation; selecting and adapting teaching and learning materials in the classroom; creating lessons plans from learner outcomes; classroom management; and classroom-based assessment.

## Learning outcomes:

On successful completion of this module students should be able to:

 Evaluate their own teaching experiences for their strengths and weaknesses, based on teaching and learning theory

- Evaluate teaching and learning materials in order to adapt materials to match student needs
- Evaluate the effectiveness of classroom-based assessment
- Create a lesson plan from learner outcomes
- Reflect on their own teaching practices

#### Assessment:

Students will submit a portfolio (2000 words, 50%) of reflections on their own teaching, which critically evaluates multiple facets of their classroom experience. They will also be evaluated on a practical assignment (50%) where they will demonstrate the teaching of a class, accompanied by a self-evaluation and reflection paper (1,500 words), which draws on teaching and learning theory in relation to their own teaching experience.

#### Suggested readings:

- Baker, J. and Westrup, H. 2000. The English Language Teachers

  Handbook: How to Teach Large Classes with Few Resources.

  London: Continuum.
- Cook, V. 2001. Second Language Learning and Language Teaching. 3rd edition London: Arnold.
- Dudeney, G. and Hockly, N. 2007 How to Teach English with Technology. Harlow: Pearson Education Ltd.
- Harmer, J. 2007. *How to Teach English*. Harlow: Pearson Education Ltd.
- Nuttall, C. 1996. *Teaching Reading Skills in a Foreign Language*. 2nd edition Oxford: Macmillan Heinemann.
- Scrivener, J. 2005 Learning Teaching. Oxford: Macmillan Education.

# LI 7894 An Ghaeilge mar Mheán Teagaisc (Neasa Ní Chiaráin - module coordinator) (not available in 2018/19)

Michaelmas term

#### Aims:

This module, which is delivered through the medium of Irish, has three key aims: (i) to enable students to communicate in their subject area through the medium of Irish in a classroom or other context. This will be achieved through autonomous language learning where students reflect upon their own language use; through their planning for situations in which Irish will be used; through monitoring and assessing their own Irish-language proficiency and being pro-active in their language learning; (ii) to familiarise students with resources and technology that can be used for the implementation of subject specific Irish-medium instruction and (iii) to explore in theory and practice the key pedagogical concepts related to target language use, language immersion, and Content and Language Integrated Learning (CLIL).

The module runs over two semesters to facilitate language learning aims. All lectures take place in the first semester. Content for the second semester is available online via Blackboard.

Students taking this module will be required to take an Irish language test (spoken and written) in the week prior to the start of term, to establish their baseline proficiency in order to facilitate the setting of personal language goals. Students will be tested again at the end of the second semester. Please note that assessment of this module focusses on the achievement of personal learning goals rather than on the level of proficiency achieved, i.e. the aim is to instill the need for personal responsibility in language learning and to encourage autonomous and continuous language learning.

## Syllabus:

The module An Ghaeilge mar Mheán Teagaisc (Irish as a Medium of Instruction), will facilitate students in refining and adapting their language competence to communicate effectively through Irish in a classroom context. It will enable them to acquire and master the relevant and appropriate classroom discourse in Irish, and to become familiar with the theory and practice of pedagogical concepts and educational instruments related to target language use, language immersion, and CLIL.

Specific themes addressed in the module include: 'CLIL' content and language integrated learning (and relating the theory with practice); the theory of teaching through a second language - the Irish context; theories of second language acquisition - how people learn languages & practical implications for a classroom; the concept of language scaffolding, i.e. building on target language competence by focusing on relevant vocabulary; the use of technology in language acquisition; the concept of autonomous language learning; the concept of reflective practice; the use of self, peer and instructor feedback in setting goals, designing curricular components for targeted subjects through Irish, implementing and delivering same; the theory and practice of needs analysis in language learning and curricular design and implementation.

#### Learning outcomes:

On successful completion of this module students will be able to:

- Apply techniques and theories learned in class in order to design, develop and deliver subject specific content through the medium of Irish
- Develop and apply practical techniques for developing language learner autonomy
- Engage in language needs analysis for specific cohorts and targeted learning goals
- Draw from and synthesise theories of second language acquisition during lesson preparation and delivery
- Exploit available Irish language resources and technology for both content and language learning
- Show increased proficiency and confidence in using Irish as a medium of instruction

#### Assessment:

Class presentation (30%)

Mid-term written reflective assignment (1000 words) (20%)

End-of-term written assignment (1500-2000 words) (50%)

## Suggested readings

Ellis, R. & Shintani, N. 2014. Exploring Language Pedagogy through Second Language Acquisition Research. Routledge (Textbook)

- Little, D. 2006. The Common European Framework of Reference for Languages: contents, purpose, origin, reception and impact. Language Teaching 39.3, pp. 167-90.
- Long, M. H. (ed.) 2005. Second Language Needs Analysis. Cambridge: Cambridge University Press
- Harris, J. & Ó Duibhir (2011) Múineadh éifeachtach teangacha: Sintéis ar thaighde, BÁC: NCCA.
- Ruiz de Zarobe, Y., & Jiménez Catalán, R.M. (2009) Content and Language Integrated Learning: Evidence from Research in Europe. Clevedon: Multilingual Matters.
- Ó Laoire, M. & Ní Chlochasaigh, K. (2010) Dea-fhoghlaimeoirí teanga i mbun foghlama. Cad iad na bealaí éifeachtacha foghlama a bhíonn acu? Teagasc na Gaeilge 9, 47-57.

LI 7895 Computer-Assisted Language Learning: Design, Implementation and Evaluation (Neasa Ní Chiaráin) (not available in 2018/19)

Hilary term

#### Aims:

This module combines both theory and practice and sets out to equip students with practical experience and skills as well as a theoretical understanding of how to design, implement and evaluate Computer-Assisted Language Learning applications. The emphasis throughout is on encouraging interdisciplinary collaboration among the students and on project-based group learning. The principal focus is on CALL development for Irish language instruction but content development for other languages is also possible. Specific aims are to: (i) enable students from different (technical, pedagogical and linguistic) backgrounds to develop their skills as well as a broad understanding of CALL as an interdisciplinary field, (ii) to familiarise students with some pedagogical considerations and second language acquisition theory that should ideally guide the development of CALL, (iii) familiarise students with a range of speech and language technologies that can be deployed in CALL (iv) provide students with practical skills in the design/development of CALL content, (v) provide students with practical skills in the implementation of CALL content, (vi) provide students with practical skills in the evaluation of CALL content and (vii) give students, where possible, hands on experience of working as part of a multidisciplinary team in order to create their own prototype digital materials

## Syllabus:

This module introduces students to current Computer-Assisted Language Learning (CALL) resources and presents an overview of current major trends in CALL research. In this context, ongoing CALL research on Irish in the School is presented. A brief overview of essential theoretical considerations is presented and discussion includes the fundamental place of second language acquisition and pedagogical theory in the design of CALL content. The specific language context and the sociocultural context of the language learner

is another fundamental consideration that is here briefly reviewed along with the need to identify clear linguistic goals in CALL design.

The implementation of CALL design in terms of specific linguistic content or of a platform design, etc. is undertaken as group work and the emphasis throughout is on maximising the interdisciplinary collaboration of students with different backgrounds and skills. Attention is also directed at how CALL materials can be evaluated. The module will encourage students to develop interactive and innovative CALL platforms which may make a significant contribution to the use of new language teaching methodologies in which technology can play a very significant role. The impact of the module may be significant in disseminating interactive CALL materials into schools.

#### Learning outcomes:

On successful completion of this module students will be able to:

- (1) explore how language structure as well as language acquisition and pedagogical theory should ideally be used as a foundation for CALL design;
- 2) describe how concepts, models and resources from speech and language sciences can be exploited to design powerful learning environments for CALL:
- 3) engage in implementation of CALL resources/materials that exploit speech and language models and technologies;
- 4) discuss suitable evaluation frameworks for speech and languagebased CALL applications;
- 5) undertake research in either design or implementation of digital materials for CALL;
- 6) communicate the results of this research through presentation and through a written account. This should, where appropriate, include supplementary materials/content developed

#### Assessment:

Module assessment will take the form either of (1) a prototype technical development, (2) the design of a technical development, (3) content development or (4) a review of theoretical issues surrounding CALL development. This will be examined through an oral presentation (25%) and through a written account, which includes, where

appropriate, any supplementary materials/content developed, such as a web-based tool/educational program/language learning materials or platform (75%).

#### Suggested readings

Materials are developed and tailored specifically for the course. Relevant material will be provided in and through Blackboard: e-books, e-journal articles and online materials are typically used in combination with lectures.

The indicative reading list for this module includes:

- Beatty, K. (2003). Teaching and researching computer-assisted language learning. New York: Longman.
- Chapelle, C. (2001). Computer applications in second language acquisition: Foundations for teaching, testing, and research. Cambridge: Cambridge University Press.
- Handley, Z. (2009). Is text-to-speech synthesis ready for use in computer- assisted language learning? Speech Communication, 51, 906-919. doi:10.1016/j.specom.2008.12.004
- Little, D. (2007). Language learner autonomy: Some fundamental considerations revisited. Innovation in Language Learning and Teaching, 1, 14-29. doi:10.2167/illt040.0
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), Handbook of research on language acquisition: Second language acquisition. (Volume 2., pp. 413- 468). San Diego, CA: Academic Press.
- Ní Chiaráin, N. (2014). Text-to-Speech Synthesis in Computer-Assisted Language Learning for Irish: Development and Evaluation. (Doctoral thesis, CLCS, Trinity College, Dublin).
- Ní Chiaráin, N., & Ní Chasaide, A. (2015). Evaluating Synthetic Speech in an Irish CALL Application: Influences of predisposition and of the holistic environment. In S. Steidl, A. Batliner, & O. Jokisch (Eds.), SLaTE 2015: 6th Workshop on Speech and Language Technologies in Education (pp. 149-154). Leipzig, Germany

### LI7896 Linguistic Landscapes (Jeffrey Kallen)

Michaelmas term

#### Aims:

This module has three principal aims:

- (i) to give an overview of the emergent field of 'linguistic landscapes', described succinctly as 'text presented and displayed in the public space' (Shohamy and Waksman 2009: 314)
- (ii) to facilitate students in practical aspects of first-hand linguistic landscape research; and
- (iii) to provide an opportunity for critical reflection on linguistic landscapes in the light of language policy, multilingualism, globalisation, tourism, and practices of literacy in old and new media.

### Syllabus:

Specific themes addressed in the module include:

- The semiotic background: how does meaning work?
- Codes: languages, dialects, typography, and writing systems
- Language in place: social definitions of place and non-place; public display of language and the material world; what is public display in the digital world?
- *People*: cultural identity, territory, power, contestation, mobility, and social planning in the linguistic landscape
- Discourse: discourse in and discourse about linguistic landscapes
- *History*: change and historical layering in the linguistic landscape
- Researching linguistic landscapes: photography, photographs as data, qualitative and quantitative approaches, using nonphotographic resources
- Conclusion: sociolinguistic approaches to linguistic landscape study.

## Learning outcomes:

On successful completion of the module, students should be able to:

- Develop a semiotic analysis of texts displayed in public spaces
- Analyse linguistic landscapes in their social, geographical, and historical contexts
- Present systematic photographic studies of linguistic landscapes
- Relate the analysis of linguistic landscapes to broader questions in linguistics, such as language policy and planning, language learning, discourse analysis, code-switching, and language contact.

#### Assessment:

Each student will start the term by doing a short diary-type exercise based on their own observations of the linguistic landscape in Dublin. Guidance for this exercise will be provided before the term starts, and the exercise is not marked. Later in the term, students will give small-group presentations of original linguistic landscape material. The group presentation is marked on a pass/fail basis. A final term essay of between 3,000 and 4,000 words is also submitted by each student. The essay presents an analysis of linguistic landscape data in relation to a broader linguistic question and provides the final mark for the module.

## Suggested readings:

Blackwood, Robert J. and Stefania Tufi. 2015. *The Linguistic Landscape of the Mediterranean: French and Italian Coastal Cities*. Houndmills: Palgrave Macmillan.

Bull, Stephen. 2010. Photography. London: Routledge

Coupland, Nikolas. 2012. Bilingualism on display: the framing of Welsh and English in Welsh public spaces. *Language in Society* 41: 1-27.

Eastman, Carol M. and Roberta F. Stein. 1993. Language display: authenticating claims to social identity. *Journal of Multilingual and Multicultural Development* 14 (3): 187-202.

Gorter, Durk, ed. 2006. Linguistic Landscape: A New Approach to Multilingualism. Clevedon: Multilingual Matters.

Gorter, Durk, Heiko F. Marten, and Luk Van Mensel, eds. 2012. Minority Languages in the Linguistic Landscape. Houndmills: Palgrave Macmillan.

Hélot, Christine, Monica Barni, Rudi Janssens, and Carla Bagna, eds. 2012. *Linguistic Landscapes, Multilingualism and Social Change*. Bern: Peter Lang.

- Jaworski, Adam and Crispin Thurlow, eds. 2010. Semiotic Landscapes: Language, Image, Space. London: Continuum.
- Kallen, Jeffrey L. 2010. Changing landscapes: language, space and policy in the Dublin linguistic landscape. In Jaworski and Thurlow (eds.), pp. 41-58. London: Continuum.
- Landry, Rodrigue and Richard Y. Bourhis. 1997. Linguistic landscape and ethnolinguistic vitality: an empirical study. *Journal of Language and Social Psychology* 16 (1): 23-49.
- Lou, Jackie Jia. 1016. The Linguistic Landscape of Chinatown: A Sociolinguistic Ethnography. Bristol: Multilingual Matters.
- Rudby, Rani and Selim Ben Said. 2015. *Conflict, Exclusion and Dissent in the Linguistic Landscape*. Houndmills: Palgrave Macmillan.
- Scollon, Ron and Suzie Wong Scollon. 2003. *Discourses in Place:* Language in the Material World. London: Routledge.
- Shohamy, Elana and Durk Gorter, eds. 2009. *Linguistic Landscape: Expanding the Scenery*. London: Routledge.
- Shohamy, Elana, Eliezer Ban-Rafael, and Monica Barni, eds. 2010. Linguistic Landscape in the City. Bristol: Multilingual Matters.
- Shohamy, E. and Waksman, S. (2009) Linguistic landscape as an ecological arena: modalities, meanings, negotiation, education. In Shohamy and Gorter (eds.), 313-331.
- Spolsky, Bernard. 2009. *Language Management*. Cambridge: Cambridge University Press.
- Wells, Liz. 2015 [1996]. *Photography: A Critical Introduction*. 5th edn. London: Routledge.

# LI7897 Speech and Language Technology in Education (Neasa Ní Chiaráin) (not available in the 2018/19)

#### Michaelmas Term

#### Aims:

The aim of this module is to introduce students to how speech and language technology, as well as computational models of speech and language can be used in the teaching/learning of language. There will be a specific focus throughout on the Irish language and its particular context, but an in depth knowledge of the Irish language is unnecessary for participation. The focus is both theoretical and practical and the course emphasizes the multidisciplinary perspectives that are required for effective deployment of technology in education. Students are introduced to a range of speech and language technologies, some of which are currently in use for language instruction, and some of which, though ripe for educational deployment, are not yet in use. Learning theories and pedagogical methods are explored in terms of their implications for the development of technological applications in language teaching. The sociolinguistic context is a further major factor which is considered. The broader question of differences in the deployment of the technology in minority and major world languages are discussed.

The module will be innovative in encouraging students from technical, pedagogic and linguistic backgrounds to explore the interdependence of these areas for the production of materials which are interdisciplinary by nature. Upon completion of the module, it is expected that students will have acquired specialised knowledge, skills and a theoretical framework for developing educational technology for language instruction.

## Syllabus

The module will equip students with a multidisciplinary theoretical framework as a background for the research and development of educational applications of technology. Speech and language technology is explored in detail and its potential for transforming the educational process is discussed. The need for a firm theoretical foundation in language acquisition and pedagogical theory as a precursor to educational content development is a major theme. Furthermore, attention is given the linguistic structure of the target language, the specific linguistic goals for particular learner cohorts are

central considerations. Students also consider the sociocultural context in which the educational technology is being deployed. In this module there is ongoing reference to Irish speech and language technology and the implications of technology for minority and endangered languages in comparison to major world languages are considered. While the module does not require students to have knowledge of the Irish language, illustrations with a specific reference to Irish will be used throughout.

### Learning outcomes

- 1: Articulate why linguistic analysis / theories of language acquisition are fundamental to the development of content in educational technology
- 2: Debate how speech analysis, speech models and speech technologies are currently used for language instruction. Articulate how the current state-of-the-art in these areas offers potential new avenues for future development
- 3: Debate how computational analysis and models of language, and language technologies are currently used for language instruction and the directions in which future developments are envisaged
- 4: Discuss how the specific language context and the socio-cultural setting (e.g., lesser-spoken vs. major world languages) impacts on the provision and use of speech and language technologies
- 5: Undertake research in one specific aspect of technology-based language instruction
- 6: Communicate the results of this research through written papers and/or presentations

  Assessment

Assessment will be in the form of a written assignment.

Suggested readings

Beatty, K. (2003). *Teaching and researching computer-assisted language learning*. New York: Longman.

- Chapelle, C. (2001). Computer applications in second language acquisition: Foundations for teaching, testing, and research. Cambridge: Cambridge University Press.
- Handley, Z. (2009). Is text-to-speech synthesis ready for use in computer- assisted language learning? *Speech Communication*, 51, 906-919. doi:10.1016/j.specom.2008.12.004
- Lightbown, P. & Spada, N. (2013) How Languages are Learned. Oxford University Press. Contemporary Computer-Assisted Language Learning
- Little, D. (2007). Language learner autonomy: Some fundamental considerations revisited. *Innovation in Language Learning and Teaching*, 1, 14-29. doi:10.2167/illt040.0
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), Handbook of research on language acquisition: Second language acquisition. (Volume 2., pp. 413- 468). San Diego, CA: Academic Press.
- Ní Chasaide, A., Ní Chiaráin, N., Berthelsen, H., Wendler, C., & Murphy, A. (2015). Speech Technology as Documentation for Endangered Language Preservation: The Case of Irish. In *ICPhS* 2015: 18th International Congress of Phonetic Sciences (Forthcoming). Glasgow, Scotland.
- Ní Chiaráin, N. (2014). Text-to-Speech Synthesis in Computer-Assisted Language Learning for Irish: Development and Evaluation. (Doctoral thesis, CLCS, Trinity College, Dublin).
- Uí Dhonnchadha, E., Nic Pháidín, C., & Van Genabith, J. (2003). Design, implementation and evaluation of an inflectional morphology finite state transducer for Irish. *Machine Translation*, 18, 173-193. doi:10.1007/s10590-004-2480-9