

**WRITING 2DAY
THE LONDON SYMPOSIUM
ON WRITING SYSTEMS**

**Institute of Education, University of London
28 November 2009**

TIMETABLE

- 9.00-9.20 **Registration**
- 9.20-9.30 **Opening**
- 9.30-11.00 **Writing Systems Research**
Chair: Benedetta Bassetti
- 9.30 Vivian Cook
The importance of writing systems research
- 10.30 Julia Sallabank and Jan Marquis
Issues in orthography development: examples from Dgernesiais / Guernésiais / Giernesiei / Djernezié ...
- 11.00 **Tea break**
- 11.30-13.00 **Word recognition across writing systems**
Chair: Jackie Masterson
- 11.30 Walter Van Heuven
Processing of interlingual homographs and homophones in Chinese-English bilinguals
- 12.00 Brendan Weekes
Chinese character recognition: Evidence from brain imaging
- 12.30 Miho Sasaki
Effects of writing systems on word recognition by L2 users: a cross-linguistic study
- 13.00-14.00 **Lunch and poster session**
- 14.00-15.30 **Technology and Writing Systems**
Chair: Vivian Cook
- 14.00 Baron, Naomi
Talk about texting: Attitudes towards mobile phones
- 15.00 Roger Mitton
The three ages of spellchecking
- 15.30-16.00 **Tea break**
- 16.00-17.00 **Literacy across Writing Systems**
Chair: Miho Sasaki
- 15.30 Cristina Burani
Morpheme-based reading in young skilled and dyslexic Italian readers
- 16.00 Sonali Nag and Maggie Snowling
The visuo-spatially complex Kannada alpha-syllabary
- 17.00-18.00 **Launch of the journal *Writing Systems Research*, hosted by the Oxford University Press**
Reception and poster session

PRESENTATIONS

The importance of writing systems research

Vivian COOK, University of Newcastle

This talk discusses reasons why writing system research is important to the study of language and affects our everyday lives. In second language teaching there has been uninformed reliance on speech as primary and no systematic teaching of the writing system. In linguistics there has been a failure to distinguish the peculiarities of spoken and written language with queries over the concepts 'word' and 'phoneme'; in particular psycholinguistics has often failed to deal with spoken language in its own right. European and UK government syllabuses for L1 and L2 pay scant attention to writing. Public discussion of language shows a failure of education on the rudiments of what spelling etc consists of, seeing all change in language as deterioration. A greater knowledge of writing system research will hopefully affect all these constituencies for the better.

Issues in orthography development: examples from Dgernesiais / Guernésiais / Giernesiei / Djernezié ...

Julia SALLABANK, Endangered Languages Academic Programme, SOAS
Jan MARQUIS, States of Guernsey Culture & Leisure Department

This paper considers issues and challenges faced in developing an orthography for a language variety which has no accepted standard, using the example of the indigenous language of Guernsey, Channel Islands.

The first issue to be faced is, why? As noted by Lüpke (forthcoming), not all languages need to be written, especially if all the functions of literacy are covered by a language of wider communication, as is the case in Guernsey. A major reason for writing an endangered language is for purposes of revitalisation, which may involve identity construction, domain expansion and *Ausbau*. In Guernsey there is more and more demand for written Dgernesiais in the 'linguistic landscape' from individuals and groups in both the public and private sectors.

Choice of writing system is not problematic in Guernsey, but spelling is. This is partly due to the shift in 'High' diglossic partner from French to English during the early 20th century. Although many speakers claim that Dgernesiais is an unwritten vernacular which 'can't be written', others, claiming to be 'traditionalists', perceive French-style spelling to be the most appropriate for Dgernesiais, and claim as authority the most recent dictionary (De Garis 1982). However, an examination of actual writing (including the dictionary itself) reveals widespread inconsistencies in norms and practices.

While three-quarters of fluent speakers of Dgernesiais are over the age of 70, an increasing number of younger people want to learn. They are usually monolingual and literate in English, and have little knowledge of French and its spelling conventions. Given that the future of the language rests with such learners, it is important to

develop an orthography which is accessible to learners yet acceptable to native speakers and to those who teach Dgernesiais.

Other issues to be tackled include: notions of ‘correctness’ versus asserted valuation of regional variation; whether to align Dgernesiais with other varieties related to French, other romance languages, or to seek *Ausbau* through distanciation (Grenoble and Whaley 2006); what can be learned from the experiences of other endangered languages, both related and unrelated; the lack of a complete description of Dgernesiais, including a phonemic inventory; how to treat ‘iconic’ sounds and spellings (Sebba 2007), and last but not least, the development of a practical spelling system (including the lack of accents on English-style keyboards).

The notion of ‘spelling as process’ seems attractive: an ‘interim’ orthography aimed initially at learners, not necessarily definitive, consistent but open to adaptation. But as with attempts to promote Marcellesi’s concept of *polynomic* languages in Corsica (Jaffe 2008), it might not be a practicable solution.

Processing of interlingual homographs and homophones in Chinese-English bilinguals

Walter VAN HEUVEN, University of Nottingham

Hanyu Pinyin is an official romanisation system for Chinese that represents the sounds in Standard Mandarin. Since 1958 it has been taught at Chinese primary schools to help children learn the pronunciation of Chinese characters. Interestingly, some Hanyu Pinyin words are also correctly spelled English words, for example the Hanyu Pinyin word "gun" written without tone diacritics. In this talk I will present a series of experiments that investigated the processing of these Pinyin-English homographs and Chinese-English homophones (e.g., "shoe"). The results of these experiments indicate that visual word processing in Chinese-English bilinguals is affected by orthographic similarity between Pinyin words and English words and by phonological similarity between English words and Chinese characters. I will discuss the implications of these findings for models of Chinese-English word processing.

Chinese character recognition: Evidence from brain imaging

Brendan WEEKES, University of Sussex

Studies of acquired dyslexia have contributed to the development of models of oral reading in languages that use an alphabetic script. However, differences across scripts mean that these models may be limited in their explanatory power. Unlike alphabetic scripts, the Chinese script has relatively arbitrary mappings between orthography and phonology and encodes the meaning of a character in a relatively transparent manner using a system of radicals that give the reader clues about how to interpret text. In this presentation I will describe recent work of Chinese character recognition including a study of semantic radical effects on character recognition using data from patients with acquired dyslexia, EEG and fMRI. The conclusion will be that semantic radicals have an effect on performance and must be incorporated into models of oral reading in Chinese.

Effects of writing systems on word recognition by L2 users: A cross-linguistic study

Miho SASAKI, Keio University, Japan

Recent research has shown that reading processes can be affected by the properties of the writing system such as scripts (alphabetic or non-alphabetic) and transparency (spelling-sound correspondences). The present research investigates how L2 readers vary in word recognition according to their L1 writing systems and the distance between the L1 and L2 writing systems. Chinese, French, Italian, and Japanese readers of English were examined to see influence of the properties of their L1 writing systems on English visual word recognition.

Results reveal that 1) the similarity between L1 and L2 writing systems is advantageous; 2) regularity of the L1 writing system affects grain size of reading units; 3) sensitivity to letter-sound correspondences relies on the L1 sound system. Combining these factors, the current L2 users of English show various word recognition performances which are different from L1 English users. The paper discusses further possible properties of writing systems that affect word recognition by L2 users and bilinguals.

Talk about texting: Attitudes towards mobile phones

Naomi S. BARON, American University, Washington, DC, USA

More than half the world's population now has access to mobile phones. While these devices enable spoken communication, many users (especially teenagers and young adults) heavily employ them for sending and receiving written text messages. There is a growing literature on the linguistic features of text messages, but much less is objectively known about user attitudes towards texting (or towards mobile phones in general). Drawing upon data from a cross-cultural mobile phone project involving university students in Sweden, the US, Italy, Japan, and Korea, this study examines user perspectives on mobile communication, with special emphasis on texting functions.

The three ages of spellchecking

Roger MITTON, Birkbeck, University of London

In the first age, detection of errors relied on dictionary look up; if a word was not in the dictionary, it was assumed to be an error. The failings of this approach were, on the one hand, querying names, technical terms and newly coined words, and, on the other, failing to spot real-word errors, where the error consisted of writing the wrong word rather than a non-word. Correction (i.e. offering a list of possible corrections) was based on finding words in the dictionary that somewhat resembled the error.

In the second age, attempts were made to use context to detect real-word errors and to use pronunciation, part of speech, word frequency and other clues to present an ordered list of candidate corrections to the user. The use of spellcheckers became commonplace, resulting paradoxically in a new form of spelling error, the “Cupertino”.

The third age sees search-engine companies (such as Google) mining their enormous log files of user queries, correct and incorrect, to offer corrections for misspelt queries. It becomes possible to correct, say, “aolbert instine” to “Albert Einstein” because the log contains either instances of exactly “aolbert instine” for “Albert Einstein” or examples of strings resembling “aolbert instine” that were themselves misspellings of “Albert Einstein”.

Morpheme-based reading in young skilled and dyslexic Italian readers

*Cristina BURANI, Institute of Cognitive Sciences and Technologies,
National Research Council (ISTC-CNR), Rome, Italy*

It has been suggested that readers of transparent orthographies rely on small-size reading units, such as graphemes and phonemes, in learning to read. The present paper shows that morpho-lexical reading is used by developing readers of Italian since the first elementary grades. Several studies that report the presence of morpho-lexical effects in Italian developmental dyslexics are also presented. Overall, the data show that, in a transparent orthography, readers of different skills may take advantage of lexical reading units (morphemes) of larger than the single grapheme grain-size. It is argued that large-size reading units such as morphemes and whole-words are necessary, even in a transparent orthography, in order to attain reading fluency. It is suggested that morpheme-based reading is specifically useful to increase fluency in children with limited reading ability who did not fully develop mastering of whole-word processing.

The visuo-spatially complex Kannada alpha-syllabary

Sonali NAG^{1,2} and Maggie SNOWLING

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The alphasyllabary, as the name suggests, is a writing system with features of both the alphabet and the syllabary. The footprint of the alpha-syllabary writing systems spreads across South and South East Asia and some of the largest numbers of the world’s children arguably gain literacy in this writing system. The basic orthographic unit in the Indian alphasyllabaries is called akshara, which represents phonology at the level of the syllable but can be pulled apart to reveal phoneme markers. In this presentation, Kannada, a South Indian alpha-syllabary will be described and findings from a study of individual differences in learning to read in this writing system will be presented. Orthography-specific patterns in literacy development will be discussed.

POSTERS

When diglossia meets digraphia: Reading Egyptian Arabic in Arabic script and Latin script

Mariam ABOELEZZ, Lancaster University

Latinised Arabic (LA) is spreading from online to offline mediums in Egypt where it is used to represent Egyptian Arabic within a diglossic setting. LA, which is a digraphic variant of Arabic in Arabic script, can now be found in regulated spaces such as printed, edited magazines. The growing popularity of LA in such contexts can no longer be accounted for by lack of technological support for non-Latin scripts nor can it be attributed to the frequently mentioned explanation that Latin script is easier to type than Arabic script. In fact, it has recently been claimed that LA is easier to read than Arabic script. To investigate the validity of this claim, two reading experiments were conducted with 19 bilingual Egyptian subjects to compare the reading of Egyptian Arabic – an uncodified variety – in Latin script (EAL) and Arabic script (EAA). The texts were taken from printed magazines and the design of the experiments was informed by insights from reading, readability and fluency research. In the first experiment, the reading speed and accuracy rate of EAA and EAL were gauged against these measures in texts of Modern Standard Arabic and English from the same magazines. In the second experiment, disfluency features such as pauses, false starts, repair, etc, were used to work out a disfluency index for EAA and EAL, while errors were represented in an error index. The results were then used to verify the findings from the first experiment. The experiments revealed that while EAA was read more fluently, EAL was read more accurately. A direct relationship between reading speed and fluency was found, but the relationship between fluency and accuracy was ambiguous. A supplementary qualitative analysis of error types also indicated that reading accuracy does not necessarily reflect reading comprehension.

English Spelling mistakes amongst Omani students at university level

Nasra AL RAHBI, University of Newcastle

This paper examines the English spelling mistakes of Omani learners of English language at university level, the reasons behind these errors and provides suggested solutions and recommendations for dealing with spelling problems. The present study is a case study which investigates English spelling errors in Ibra College of Technology. The study was made in two Advanced level classes in the foundation year. The study uses three tools for gathering data: analyzing writing exam scripts, a spelling test, and interviews. The results indicate that substitution is the most common type of spelling mistakes made by Omani students at university level (both good and bad spellers) and transposition is the least common. In addition, Omani students tend to make English spelling errors with regard to vowels rather than consonants. In the

Sultanate of Oman, there are two main reasons behind spelling errors. Firstly, the spelling system in their native language (Arabic) is totally different from that of the English language, with only a few small points of similarity. Secondly, Omani students are poor in phonological knowledge. Thirdly, the traditional approach to teaching spelling followed in Oman is not adequate to improve spelling ability. Finally, the researcher provides some recommendation and suggestion for teachers and students to improve spelling errors. This study suggests that the teachers need to follow a phonics and morphemic approach in addition to a traditional approach to teach spelling. In addition, teacher should focus on the points of difference between English and Arabic spelling system. Furthermore, the main suggestion for students is they have to make more practice in reading and listening skills because these two skills undoubtedly improve spelling skills.

Effects of removing morphemic information and adding interword spacing on reading in Chinese primary school students

*Benedetta BASSETTI and Jackie MASTERSON
Institute of Education, University of London*

Different writing systems represent language differently, and as a consequence reading processes vary across writing systems. In particular, assumptions about universals of reading based on research on English readers need to be corroborated by cross-orthographic research.

Chinese graphemes (hanzi) represent morphemes, as well as conveying some phonological and sub-morphemic semantic information. Furthermore, unlike English, Chinese does not mark word boundaries, and spacing marks morpheme boundaries. Previous research (Bassetti, 2009) has shown that Chinese adult readers are very slow at reading romanised Chinese, which provides a transparent phonological representation of Chinese spoken syllables but does not represent morphemic information. The same study also found that adding interword spacing to Chinese sentences does not facilitate Chinese adult readers.

This study investigated the role of morphemic information and interword spacing in reading in Chinese primary school students. Since primary school children are proficient readers of romanised Chinese but have not mastered hanzi yet, they should be less disrupted than adults when morphemic information is removed. Furthermore, since they are inexperienced readers, Chinese children might be facilitated by interword spacing (as English-speaking learners of Chinese as a Second Language are). Participants read sentences written with morphemic information (in hanzi) or with phonemic information (in romanised Chinese), and with or without interword spacing. Children were negatively affected when morphemic information was not present, and when interword spacing was added. These results highlight the important role of morphemic information in Chinese reading, and confirm that the facilitative effects of interword spacing on reading is not universal. This study therefore supports the view that reading processes vary across writing systems.

Anthropological Universals – Cultural Differences.
Comparative research on differences in cognitive processing of the
German alphabetic orthography and the Japanese writing system.
An interdisciplinary project between philosophy, psychology,
and neurolinguistics.

*Elisabeth BIRK¹, Sonja HÄFFNER¹, Kathrin HIPPMANN², Walter HUBER³,
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³Neurolinguistics Section, University Hospital RWTH Aachen, Germany*

Our poster presents the layout of an interdisciplinary research project currently underway at Aachen University (Germany). The aim of the project is to gain insight into the cognitive processing of different writing systems and thereby, ultimately, into the respective influence of universal cognitive mechanisms and culture specific factors on our symbolic practices.

Our approach is a comparative analysis of an alphabetic writing system (the German orthography) and the Japanese writing system (a complex "mixed" writing system associating characters of Chinese origin, the Kanji, and two syllabaries). We focus on monomorphemic alphabetic nouns and Japanese Kanji. The project combines linguistic theory, an experimental-behavioural approach and connectionist modelling of cognitive processes.

The theoretical description is based on Nelson Goodman's theory of symbols. It provides a language of description that is not biased towards either writing system and permits a comparison of these systems. Furthermore, elements for a typological description of writing systems are proposed. More specifically, the description establishes which units should be considered as equivalent in both writing systems and can be used to create comparable stimulus material for testing.

The experimental approach uses two different methods to determine whether different processes are involved in word recognition in different scripts: 1.) A visual word/character recognition task using the lexical decision paradigm allows inferences about cognitive processes via the analysis of reaction times and error rates. 2.) The same task is used in fMRI scans in order to shed light on the neurological basis of visual word recognition.

The third part of the project combines theoretical findings and the results of lexical decision experiments within the framework of a connectionist model. This cognitive model of word recognition in different scripts is then implemented in a computer simulation of the neural network of word recognition.

Language standards, writing systems and Unicode

Debbie GARSIDE

CAIR - Glyndwr University and the University of Wales Global Academy

In today's digital society the documentation of orthographies is imperative to the everyday use and future preservation of the world's languages and their writing systems. This poster explores how the latest International Standard for Language Encoding, ISO 639-6, coupled with Unicode can facilitate the development of standard practice for the documentation of writing systems and their orthographies and how the linguistic community can help with its development.

Early English language immersion in French-speaking children: Evaluation of the acquisition of English literacy

*Anne-Catherine NICOLAY**, *Brendan WEEKES²* and *Martine PONCELET¹*
¹Language and Learning Neuropsychology Unit, University of Liège, Belgium
²Department of Psychology, University of Sussex, UK

An important question in L2 language acquisition is the role of orthography on new learning. No study has examined the cognitive mechanisms that are involved in the acquisition of literacy in the immersion context. In Belgium, native French speaking children are encouraged to learn English as a second language (in addition to Dutch) in an immersion context. However our understanding of the development of literacy in English as a second language within this environment is under developed. For example, there are no normative studies of English reading and writing in Belgium. We have data on the development of literacy in French (L1) among children in the immersion context showing normal advances in reading and writing skill over the primary school years such that by the age of 11 years these children are no different to children learning French in a monolingual learning environment. The main aim of this study is to examine the development of literacy in English in children aged 5 - 12 years from immersion schools in Liege. We asked three questions. First, is there evidence of known effects of word type on reading and writing ability e.g. effects of lexicality, regularity, feedforward and feedback consistency of the orthographic rime. Second, what is the normal developmental trajectory of literacy acquisition for these children in this age range. Third, what are the cognitive predictors of literacy in L2 e.g. phonological awareness, executive skills and memory using a longitudinal design in the immersion context. Preliminary results suggest that learning English in an immersion context requires cognitive mechanisms that may not be ordinarily recognised as necessary components of literacy instruction in monolingual environments. In sum, this project allows us to gather normative data for educators, teachers and speech and language therapists.

Transfer effects from a transparent L2 (Greek) to an opaque L1 (English) in eight-year-old children

*Georgia Z. NIOLAKI and Jackie MASTERSON
Institute of Education, University of London*

This study examined spelling production in 32 Greek-English bilingual children (mean age 8;1 years) who differed in level of literacy skills in L2 Greek. We investigated the effect of child-related and stimulus-related variables in a spelling-to-dictation task in L1 English. Specifically, we tested whether markers of sublexical processing (phonological awareness for child-related variables, word length effects for stimulus-related variables) would be apparent in students with strong Greek literacy skill. Conversely, it was expected that markers of lexical processing (visual memory for child-related variables and word frequency for stimulus-related variables) would be apparent in students with weak Greek literacy skill. The results were in accord with these predictions, and in addition, pupils with strong L2 Greek literacy skills made more phonologically appropriate errors in L1 spelling than pupils with weaker skills. The results suggest that the orthographic depth of the second language (in this case the mainly transparent Greek orthography) affects spelling in the first language (the opaque English orthography), depending on level of L2 literacy skills, as metalinguistic skills are transferred from the one language to the other.

Age of acquisition and word frequency effects on printed word naming in English

Silvia RONCOLI¹ and Jackie MASTERSON²

¹La Sapienza University, Rome, Italy, ²Institute of Education, University of London

Recent research addressed the question of whether age of acquisition (AoA) and word frequency effects reflect the same learning mechanism. If so, when AoA effects are found, frequency effects should also be present, and vice versa. Burani et al. (2007) demonstrated word frequency effects in the absence of AoA effects on the reading aloud of Italian, a regular and transparent orthography. The researchers explained the result by arguing that Italian words can be read aloud via the direct orthography-phonology lexical route without involving semantic information (absence of AoA effect).

The present study evaluated AoA and frequency effects in a word naming task in English, which has irregular letter-sound mappings. We replicated the procedure described in Burani et al. to investigate the relationship between word naming latencies and six variables: AoA, imageability, adult written frequency, child written frequency, word length and number of orthographic neighbours. Our results, analysed using correlation and factor analysis, revealed that AoA and child written frequency predicted word latencies, and that AoA loaded more heavily on a semantic factor than on an orthographic factor.

Surface and phonological developmental dyslexia in the Greek language

Andreas SOTIROPOULOS, University of Essex

This poster will provide data from 3 single case studies of developmental dyslexia in Greek children. The key measures that are investigated include reading speed for words and nonwords and spelling of irregular words. Differences in reading and spelling performance between children learning to read English are often explained in terms of a dissociation between developmental phonological and surface dyslexia. This poster will discuss whether or not this dissociation can also be applied fruitfully to individual differences between Greek dyslexic children.

Sound segmentation is orthography-specific: Evidence from Hindi-, Kannada-, and Malayalam-English bilinguals

*Jyotsna VAID, Chaitra RAO, Catherine KOOLA and Sumeyra TOSUN
Texas A&M University*

This study examined the influence of writing system properties on the segmentation of spoken words. Cross-language homophones were presented to bilingual adult users of an alphasyllabic writing system (Hindi, Kannada, or Malayalam) and an alphabetic writing system (English). Adapting a task used by Ben-Dror, Frost, & Bentin (1995), participants were asked to take away the first sound of each word presented in separate language blocks and say what remained. It was hypothesized that “the first sound” would be construed as a phoneme for English words but as a syllable for words written in the three Indic scripts, given that the akshara (a consonant-vowel unit) is the basic structural unit in these scripts. This expectation was confirmed. Moreover, in a subgroup that was literate only in English but bilingual in English and Malayalam, the pattern in both languages was phoneme-based, confirming that the source of the effect is knowledge of the structure of the written, rather than the spoken, language.

Cameroon Pidgin English orthographies between colonial history and a novel identification

Brigitte WEBER, Alpen Adria Universität Klagenfurt, Germany

Varieties of West African Pidgin English have probably been spoken on the West African coast for about 400 years. The original rudimentary pidgin or simple ‘medium for inter-ethnic communication’ (MIC) developed as a result of trade. Today it is an elaborated Pidgin which serves an invaluable role as a lingua franca in multilingual areas such as Nigeria and Cameroon. Between the fifteenth and the nineteenth centuries Portuguese, Spanish, Dutch, French and English traders visited Cameroon. In 1884 Cameroon became part of the German Empire, called Kamerun. After World War I Kamerun was divided between England and France and thus English and French have become the two official languages.

A comparison of the different orthographies of CPE might reflect the history of the country. One can ask if the European / colonial languages left a mark on CPE orthography and to what extent the substrate plays a part. The language was first written down by the Germans and it is obvious that German characteristics can be found in pronunciation, reflected in orthography. There is a spelling system used by francophone pidgin speakers, and there are several English spelling conventions as well as phonemic and phonetically - based versions. The question is: What sorts of texts are written and which spelling is used?

CPE has no official or accepted orthography. The different orthographic techniques will be discussed with this poster and may result in new reflections. Any kind of contribution resulting from this presentation will be a step forward towards an official recognition of the language.

Written age-of-acquisition effects reflect family resemblance in the lexical network

Brendan WEEKES, University of Sussex

The arbitrary mapping hypothesis assumes that age-of-acquisition (AoA) effects on oral reading depend on whether phonology can be predicted from orthography. One prediction that follows is that AoA effects will be larger for written words with inconsistent rime spellings than for written words with consistent rime spellings. An alternative hypothesis is that AoA effects on oral reading depend on the family resemblance between lexical items that share orthography-to-phonology mappings. The results from a multiple regression study show that the effects of written AoA on oral reading interact with the number of words containing the rime. Specifically, written AoA has a larger effect on the oral reading of consistent words with few family members than on that of inconsistent words with many family members. The conclusion from these results is that a binary distinction between predictable and unpredictable mappings is not sufficient to explain effects of written AoA on oral reading.