



What makes a word a word?

Workshop on the concept of word in different
writing systems.

22th and 23th July 2010

SuperC, Room 5.31
Templergraben 57
52064 Aachen

RWTH Aachen University, Germany

On the workshop

In linguistics and psychology the concept of word is one of the most widely used linguistic concepts. It is also notoriously difficult to define. Even in alphabetic writing systems such as German or English, where words are routinely separated by spacing, decisions about word boundaries can be difficult: compounds, for example, can be “difficult to spell” – orthographic difficulties of that kind indicate that graphematic criteria for word boundaries are affected by other factors (morphological, syntactic, semantic, phonological) that play a part in our decision what counts as one word. Matters are further complicated by the fact that many writing systems do not use spacing to mark word boundaries. This poses a problem for all areas of research where a general concept of word is an essential requirement. The comparative study of writing systems is a case in point: The interdisciplinary research project “Anthropological universals - cultural differences” compares the German alphabetic script and the Japanese Kanji script combining approaches from linguistics, connectionist modeling and psychology. The question which entities are comparable arises in all three areas of research. The search for stimuli for lexical decision tasks, for example, leads to a reflection on the comparability of word recognition and kanji character recognition. And the linguistic description of both writing systems leads to the notoriously difficult question of word boundaries in the Japanese Kanji-Kana-system (cf. Sainio, Hyönä, Bingushi & Bertram, 2007).

The conference addresses the question “What makes a word a word?” from a comparative perspective: Is a general definition of words in alphabetic writing systems possible? What are the graphematic, morphological, syntactic, semantic, or phonological criteria for determining word boundaries in writing systems without spacing? The three panels of the conference will address these questions and their methodological and conceptual implications for linguistics, connectionist modeling and psychology.

Panel 1: Linguistics

From a linguistic perspective, we concentrate on the general question of the relation between linguistic categories and writing systems on the one hand and the question of criteria for word boundaries in the different subdisciplines of linguistics on the other:

- What would be the methodological consequences of an “*orthographic relativity* whereby users analyse language differently according to which units are represented in their writing system” (Bassetti 2005, S.336sq.) or a “linguistic relativity” (Stetter 1999, S.131) (where “linguistic” refers to the discipline of linguistics, not to language in general)?
- Should we assume that every linguistic subdiscipline defines the concept of word in a different way (cf. Fuhrhop 2008), or do phonological, graphematic, morphological, semantic, and syntactic criteria add up to a general definition of *the* linguistic word?

Panel 2: Psychology

The psychological approach in our research project uses experimental (lexical decision) and imaging (fMRI) methods to determine the cognitive processes underlying visual word recognition. The question is whether these processes differ depending on the specific script and what kinds of script-specific criteria have to be met to come to a reliable word or non-word decision. There are several open questions concerning the factors influencing word recognition in the German alphabetic script and even more in the Kanji script.

What influence do the sublexical units (letter clusters, bigrams, syllables) in the alphabetic script have in contrast to strokes, stroke patterns and recurring elements (potential basic orthotactic units) in the Kanji script? The specific impact of orthotactic regularities and constraints and of phonological, morphological and semantic information on word recognition in both scripts is still open to debate.

Does the reading of an alphabetic compared to a non-alphabetic script involves radically different cognitive processes or are we able to determine cross-script universal processes in word recognition? And what kind of assumptions about the concept of word do we have to make to answer the question?

Panel 3: Connectionist Modeling

For the connectionist modeling of visual word and kanji recognition respectively, the question arises how a word/character is represented in different models. In the bilingual *BIA+ model* by Dijkstra & van Heuven (2002), the word is represented in a localist fashion. The *lexical constituency model* by Perfetti et al. (2005) – that is implemented for the simulation of Chinese character processing – provides neither an explicit orthographic nor an explicit phonological representation of the word/character. The *PDP model*, too, (cf. Seidenberg & McClelland 1989) has no explicit word representation, but hidden layers between orthography, phonology and semantics where modality specific word/character representations might be found. Could those three connectionist models be seen as expressing three different word/character concepts: a unit existing independent of its forms and meanings; an activity pattern consisting of its orthographic and phonological forms and meaning; a modality specific activity pattern integrating meaning and orthographic word form on the one hand and meaning and phonological word form on the other hand?

References

- Bassetti, B., 2005. Effects of writing systems on second language awareness. Word awareness in English learners of Chinese as a foreign language. In V. J. Cook & B. Bassetti, hrsg. Second language writing systems. Clevedon, UK: Multilingual matters.
- Dijkstra, A. & W.J.B. Van Heuven. 2002. The architecture of the bilingual word recognition system: From identification to decision. *Bilingualism: Language and Cognition* 5.175-97.
- Fuhrhop, N., 2008. Das graphematische Wort (im Deutschen). Eine erste Annäherung. *Zeitschrift für Sprachwissenschaft*, 27/2, 189-228.
- Hippmann, K., Ziefle, M. & Huber, W. (submitted). About the influence of writing systems on cognitive processes in visual word recognition. An example of German and Japanese. Paper submitted to *Reading and Writing. An interdisciplinary Journal*.
- Perfetti, C. A., Y. Liu & L. H. Tan. 2005. The lexical constituency model: Some implications of research on Chinese for general theories of reading. *Psychological Review* 112.43-59.
- Sainio, M., Hyöna, J., Bingushi, K. & Betram, R. (2007): The role of interword spacing in reading Japanese: An eye movement study. *Vision Research*, 47. 2575 - 2584.
- Seidenberg, Mark S. & James L. McClelland. 1989. A distributed, developmental model of word recognition and naming. *Psychological Review* 96.523-68.
- Stetter, C., 1999. *Schrift und Sprache* 1. Aufl., Frankfurt am Main: Suhrkamp.

Schedule

Workshop takes place in SuperC, Templergraben 57, Floor 5, Room 5.31 (see map).

Thursday, 22th July

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|-------|----------------------|---|
| 09:30 | Welcome | Christian Stetter
Institute of linguistics and
communication studies,
RWTH Aachen University |
| 10:00 | Introduction Panel 1 | Elisabeth Birk
Institute of linguistics and
communication studies,
RWTH Aachen University |

Tea/Coffee Break

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| 11:00 | The word in the German writing system:
Towards a graphematic definition | Martin Neef
Department of German Studies
Braunschweig University |
| 11:30 | The concept of word in a morphemic writing
system with no interword spacing:
Word awareness in native and non-native
speaker-readers of Chinese | Benedetta Bassetti
Institute of Education,
University of London |
| 12:00 | Japanese words and Japanese writing | Charles De Wolf
Keio University, Tokyo |

Lunch Break (Anvers, Kockerellstr. 20)

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| 14:00 | Introduction Panel 2 | Kathrin Hippmann
Human Technology Centre
RWTH Aachen University |
| 14:30 | Delineating word boundaries while reading
in spaced and unspaced writing systems:
Evidence from English, Thai and Chinese | Ralph Radach
Department of Psychology/FCRR
Florida State University |

Tea/Coffee Break

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| 15:30 | Japanese words:
Some observations from constructing the
Japanese Word Association Database | Terry Joyce
School of Global Studies
Tama University |
| 16:00 | The Effects of properties of the radicals
in radical migration phenomena | Saito Hirofumi
Department of Cognitive Informatics
Nagoya University |

18:30 Dinner & Get-together (Human Technology Centre, Theaterplatz 14, Floor 3, Room 303)

Friday, 23th July

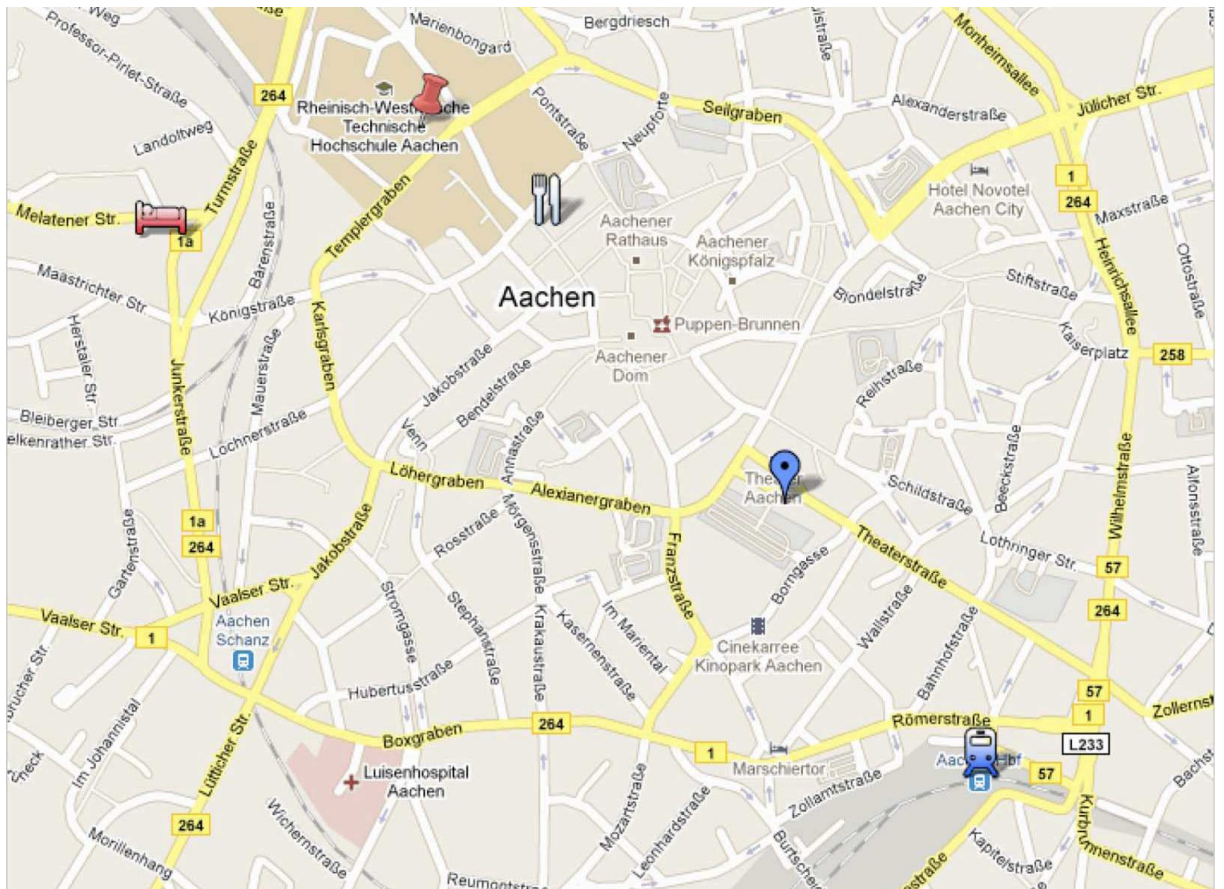
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| 09:30 | Introduction Panel 3 | Sonja Häffner
Institute of linguistics and
communication studies,
RWTH Aachen University |
| 10:00 | Visual word recognition in native and non-
native speakers | Kristin Lemhöfer
Donders Institute for Brain, Cognition
and Behaviour
Radboud University Nijmegen |

Tea/Coffee Break

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|-------|--|--|
| 11:00 | Extending localist-connectionist word
production models by writing | Ulrich Schade
Information Technology for Command
and Control
Fraunhofer Institute for
Communication, Information Processing
and Ergonomics FKIE |
| 11:30 | Words, слова, 単語 :
Extending localist-connectionist word
recognition models to different scripts | Ton Dykstra
Donders Institute for Brain, Cognition
and Behaviour - Centre for Cognition /
Centre for Language Studies,
Radboud University Nijmegen |

12:00 Final discussion

Map



Hotel Baccara
Turmstraße 174



SuperC, Room 5.31
Templergraben 57



Restaurant Anvers
Kokerellstraße 20



Human Technology Centre (HumTec)
RWTH Aachen University
Theaterplatz 14
52056 Aachen



Aachen Main Station