THE BILINGUAL LEXICON

Edited by
Robert Schreuder
Bert Weltens

STUDIES IN BILINGUALISM 6

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ROBERT SCHREUDER
BERT WELTENS
University of Nijmegen

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THE BILINGUAL LEXICON

STUDIES IN BILINGUALISM (SiBil)

Volume 6

Robert Schreuder and Bert Weltens

The Bilingual Lexicon

Preface

The present volume consists of papers that were invited in the Spring of 1992. Most of the papers contain a state-of-the-art review of a line of research related to the bilingual lexicon. The chapters that were written in response to this invitation were then distributed among the authors of the other papers. Subsequently, all authors gathered for three days and discussed each other's contributions. The papers were revised substantially on the basis of these discussions, mainly in order to increase the coherence of the volume. Moreover, it was not until after the gathering that the introductory and the concluding chapters were written.

The editors are particularly grateful to Abder El Aissati, Eva Kehayia, Wido La Heij, Gerard Nas, and Anneli Schaufeli. Although their names do not appear in the volume as authors or co-authors of one of the chapters, they were so kind as to comment upon the original papers during our meetings; in this way, they contributed substantially to the quality of the papers as they appear here.

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Nijmegen, the Netherlands,
March, 1993,
Robert Schreuder and Bert Weltens.

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An Overview

Robert Schreuder & Bert Weltens

In the preface to his classic 1939 study of bilingual development, Werner F. Leopold complains about the scantiness of scientific publications on bilingualism up until that time:

> As far as bilingualism is concerned, surprisingly little, in view of the obvious theoretical and practical importance of it, has been written about it. (Leopold 1939: ix)

Half a century later, the literature on bilingualism could easily fill an entire library.[1] Despite the fact that Leopold considered bilingualism of "obvious theoretical and practical importance", his observation that the study of bilingualism tends to attract more attention from "educators" than from "linguistic scholars" is still valid today. This suggests that the practical importance of research on bilingualism is recognised much more clearly than the theoretical importance of such research.

Romaine (1989: 3) has pointed out that the theoretical aspects of bilingualism are closely related to its practical (*i.e.*, educational and societal) aspects. She has stressed that certain theoretical misconceptions about the nature of the bilingual brain have led to dangerous misconceptions about language behaviour, which can have far-reaching consequences, for instance in the areas of language planning and bilingual education. Code switching, for instance, should be regarded as "a part of the normal process of growing up bilingually and acquiring competence in more than one language", but mixed utterances "have been re-

garded by linguists and laymen as somehow deviant and not ideal" (Romaine 1989: 2). Hakuta (1986: 30-33 and 59-95) traces back many of these misconceptions about bilingualism to the ideas that Madorah Smith launched about bilingualism and intelligence in the 1930s. Her view on code switching, for example, was that it was a manifestation of bilinguals not being able to distinguish the different languages. As a consequence, in the analysis of spontaneous speech produced by bilingual children, utterances containing elements from two languages were simply scored as errors.

Many authors have pointed out that bilingualism is a phenomenon affecting almost every nation in the world. In the introduction to his *Life with Two Languages*, for example, François Grosjean writes:

> Bilingualism is present in practically every country of the world, in all classes of society, in all age groups; in fact, it has been estimated that about half the world's population is bilingual. (Grosjean 1982: vii)

The degree to which the world is bilingual is still often underestimated today and the above estimate may even seem conservative to some. In their book on dialect and education in Europe, for instance, Cheshire, Edwards, Münstermann and Weltens (1989: 2) note:

> Although Europe is recognised as a linguistically diverse area, the extent of that diversity tends to be underestimated. Countries such as Belgium and Switzerland, which officially recognise more than one language within their frontiers, are the exception rather than the rule, and the picture which emerges from a rapid survey of the national languages of Europe is, at the very least, misleading.

The extent to which the world is considered bilingual depends, of course, on the definition of bilingualism. In the preface to his 1939 study, Leopold defines 'bilingual' as "speaking two languages interchangeably", although he hastens to add:

> The ideal form of bilingualism (bilinguism) is when both languages are spoken equally well for all purposes of life. In practice only approximations to this ideal can be expected. (Leopold 1939: 5-6)

He therefore proposes speaking of bilingualism "as long as both [languages] are regularly employed as media of intercourse" (p. 6) – a proposal echoed in Weinreich (1953: 1), when he defines it as "the practice of alternatively using

two languages". Similarly, Grosjean (1982: viii) defines bilingualism as "the regular use of two languages".

Among other authors, Hornby (1977: 3), has pointed out that there is in fact a continuum along which bilingualism has been defined. The possibilities range between restricting the term to "nativelike" ability in both languages, as Bloomfield did, and characterizing it with "minimal rather than maximal qualifications", as Haugen did when he characterised any form of functional foreign language use as bilingualism (*cf.* Hoffmann 1991: 14-32, for an elaborate discussion).

If we accept a less restricted definition, bilingualism is an enormously widespread phenomenon indeed. Moreover, in line with common practice, we will be using the term 'bilingualism' to include bidialectism and multilingualism – that is, any situation where more than one language (or language variety) is used regularly.

There is yet another way in which bilingualism is sometimes defined. In some parts of the world, only natural acquisition of two languages is considered to constitute bilingualism, while others also regard formal language learning as a possible basis for bilingualism. As an example of the former, Grosjean (1982) explicitly limits his book to "the natural acquisition and use of two or more languages". This seeming dichotomy of 'natural' *vs.* 'formal', however, is quite problematic. To start with, it is really a continuum. In many cases the acquisition of so-called 'foreign' languages involves a combination of formal instruction and natural acquisition. The average Dutch child, for instance, will pick up at least some English and German *naturally* from the media; at school, he will *formally* learn these languages; later in life he may use these skills *naturally* in his study or job; and he may also choose to attend a *formal* language course again at some point.

Recently, Dick Allwright devoted a paper to the problem of defining teaching and learning environments. He dismisses the distinctions between 'informal' and 'formal', between 'second' and 'foreign' language learning contexts, and concludes:

> the characterization of teaching and learning environments is something that must *emerge from* research, rather than something that can be *imposed upon* research as a framework of independent value. (Allwright 1991: 166-167)

Instead, Allwright (1991: 167-168) proposes to look at learning opportunities in terms of "encounter opportunities" and "practicing opportunities", that is, "opportunities to *meet* whatever is to be learned" and "opportunities to *do something* with target material". It should be added, though, that this is not in-

tended as an alternative dichotomy, but as a couple of dimensions which may be present to a larger or lesser degree in any learning situation, which the learner essentially creates himself.

In the present volume, bilingualism includes but is not limited to skills resulting from formal language learning. Some of the authors actually concentrate on formal language learning (see Nation; Poulisse; Weltens and Grendel), while others discuss the *differences* between the formal and the natural acquisition of a second or foreign language as a potential explanation for variation in the organisation of the mental lexicon (see De Groot; Kroll). Still other authors explore the potential effects of the *degree* of bilingualism on the functioning of the bilingual lexical system (see Kroll; Snodgrass; Weltens and Grendel).

Given the extensiveness of the phenomenon of bilingualism, it is clear that questions related to bilingualism deserve serious attention, whether they are theoretical or practical in nature. How do multilingual people understand and produce language? Are there fundamental differences with monolingual speakers? How do people learn a second language? Is language subject to forgetting, and if so, which aspects of it? These are just a few of the many questions that one can raise about bilingualism. In this volume we will concentrate on the lexical level of language. We will do so because of the importance the lexicon, both in theoretical and in more practical terms. The theoretical importance is discussed below; the practical importance of the lexicon is stressed by Vermeer (1992: 147):

> Knowing words is the key to understanding and being understood. Children acquire words first, and next the grammar of a language. The bulk of learning a new language consists of learning new words: grammatical knowledge does not make for great proficiency in a language.

The practical aspects are discussed in greater detail in the chapters by Nation and Meara, which focus upon vocabulary acquisition. Nation stresses the importance of vocabulary size as an essential prerequisite for the development of skill in language use. Meara considers the role cognates might play in vocabulary acquisition in a second language, individual differences and the assessment of vocabulary skills, a point to which we will return.

The mental lexicon is a very important part of any model of language processing. It plays a central role because it provides a bridge between form and meaning. In the mental lexicon information from all different linguistic levels is combined. Phonology, orthography, syntax, argument structure, morphology, and lexical semantics all appear in the entries of the mental lexicon (see, *e.g.*,

Aitchison 1987). Understanding just how this information is represented and used is crucial to any model of language perception and production.

In the case of bilingualism, a specific set of additional theoretical issues becomes important, one of which is usually formulated as 'are words stored together in one lexicon, or two?' In what follows we will briefly discuss why this question is formulated much too simplistically.

Without going into the (notoriously difficult) question of defining the notion 'word' here, it is clear that we need to distinguish between many levels of

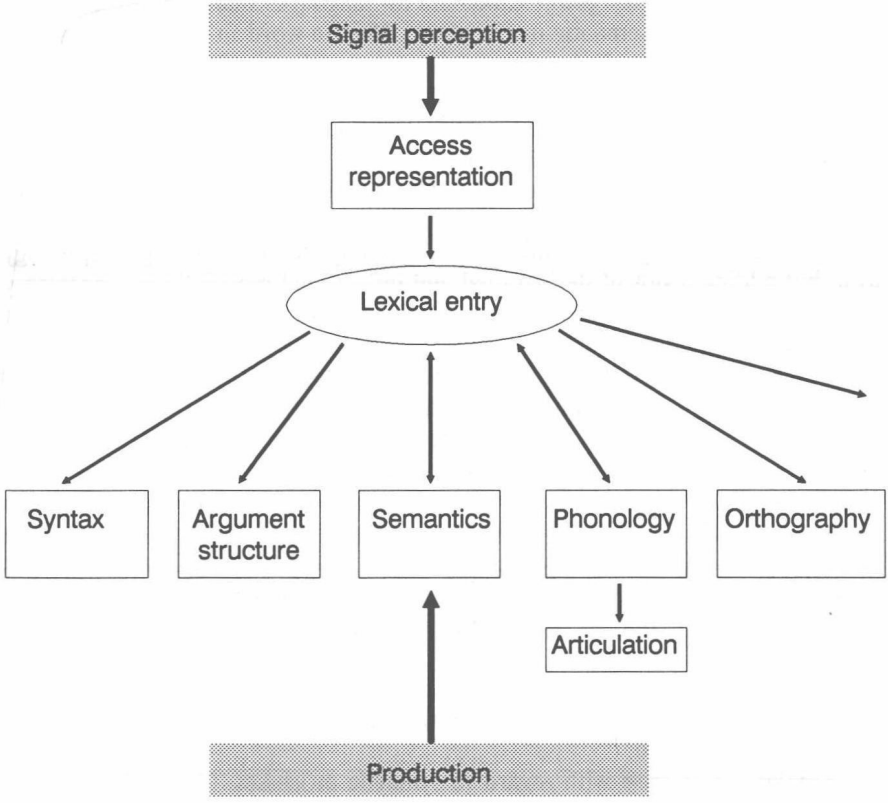

Figure 1. Representations in the mental lexicon

representation that characterize words. In Figure 1 some of the complexities can be seen: it shows representations and links between several linguistic levels.

In order not to complicate matters further, we will only consider the auditory perception of a monomorphematic word here. The acoustic signal will undergo processing leading to a modality-specific representation, which then has to be mapped onto an access representation in the mental lexicon. When such a match is found, the numerous other representations become available (or activated, as it is usually called). At all these different levels, information could be shared or stored separately. Although typological differences between languages play a crucial role here, a prime candidate for languages sharing representations is, of course, lexical semantic information. When a word in language A means the same as in language B, it saves storage space to have only one common representation. Similar patterns may or may not exist at other levels, and there may be links between language-specific representations. These are the issues really raised by the question mentioned above: at which levels do languages share representations, and at which levels are representations linked to each. In the chapter by Kirsner, Lalor, and Hird, this question is explicitly dealt with.

It is clear that Figure 1 would be greatly complicated by adding morphology to it, but adding levels of derivational and inflectional morphology is necessary for a complete picture of lexical complexity. As it now stands, Figure 1 does not reflect the distinction between the basic lexical entry (lemma) and its inflectional forms (lexemes). It should be noted, moreover, that morphology is a good example of a linguistic level where it is important to ask similar questions about processing. That is, how many processing algorithms can be shared? Will someone who speaks Finnish (with its very rich morphology) as a first language, employ the same morphological processes when speaking a morphologically much simpler language like English? Recently, Frauenfelder and Schreuder (1992) have listed several reasons why the monolingual speakers of different languages probably employ rather different morphological processes in their recognition of morphologically complex words. How multilingual speakers of languages that are not closely related acquire new morphological processing mechanisms is an interesting question that has not been answered so far. It is unclear at present how much of these processing mechanisms can be shared, even for languages that are closely related.

Similar issues arise with regard to syntactic processes. Given the range of syntactic differences between languages, one can ask whether languages that are syntactically quite distinct would lead to different processes in bilingual speakers, while languages that are closely related may allow for shared processing mechanisms or strategies.

It is clear from the foregoing that in the present volume not all of these questions can be dealt with. However, a common theoretical thread will be just which information is shared in the bilingual speaker's lexicon and which is not. We prefer the above formulation over 'stored together', because the latter implies a spatial storage metaphor that may very well be much too simplified, as we hope to have shown above. Furthermore, recent models of the lexicon that employ the notion of distributed representations (*e.g.*, Seidenberg and McClelland 1989) show that the spatial metaphor is not by definition necessary: such models are perfectly able to handle the notion of sharing storage. The notion of sharing storage goes back, of course, to Weinreich's classic tripartite model and Osgood and Ervin's bipartite adaptation (see the chapter by De Groot).

It has also become increasingly clear that a dynamic, developmental perspective on bilingualism should be preferred over static perspective. The lexicon of a bilingual may change over time, as information is added, reorganised, or even lost. Interestingly enough, Leopold (1939) already recognised the coordinate/compound/subordinative distinction before it was labelled as such by Weinreich. Moreover, he conceived of the bilingual lexicon as a system that could change over time. In the analysis of his daughter's vocabulary, Leopold discussed the phenomenon of "competing bilingual synonyms", which he regarded as the result of "the never-ceasing influence of two linguistic standards" (p. 179). He concluded:

> It resulted eventually in the adoption of two separate systems of speech, which is bilingualism. While she was a small child, Hildegard's speech was not yet aiming at this ideal. Bilingual conditions were not yet permanent; her speech was still striving to make one unit out of the split presentation. (Leopold 1939: 179)

In other words, well before Weinreich's classic study, Leopold drew the distinction between different types of organisation of the bilingual lexicon and, what is more, he related it explicitly to language development: early bilingualism is compound ("striving to make one unit out of the split presentation"), but the child gradually moves towards "two separate systems of speech", which, it should be noted, is presented as being equal to bilingualism, as an "ideal" and "permanent". This developmental perspective, the change of the mental lexicon over time, is another aspect that is underrepresented in many of the psycholinguistic accounts of bilingualism. Not so in the present volume, where the acquisition phase is in fact the focus of the attention. In many chapters in the present volume (De Bot and Schreuder, De Groot, Kirsner *et al.*, Kroll, Nation,

Meara, Snodgrass, and Weltens and Grendel) level of proficiency and its consequences for bilingual lexical processing and organisation play an important role.

The notion of proficiency is, of course, strongly related to practice. The more practice one has in a second language, the higher one's level of proficiency will be. This point is discussed by Kirsner *et al.*, Meara, and Nation. In the chapter by Kirsner *et al.*, practice effects are found to play a central role in bilingual speech processing. The authors argue that the behaviour of bilinguals in experimental studies can be explained by general cognitive mechanisms that are not specific to language only (see also Snodgrass). Kirsner *et al.* consider the combined effects of languages sharing information (especially within the morphological level) with the general effects of practice. However, within a given level of proficiency and given some ideas about lexical organisation, numerous other questions remain.

Some of these questions are also raised in the present volume. How is the language user able to find the right representations? How can a speaker keep languages separated if they share representations? If words of different languages share semantic representations, how are speakers able to find the words of the intended language (De Bot and Schreuder, this volume)? Or, if the languages share information at the form level, how can speakers arrive at the right lexical representations (Grainger, this volume)?

From a theoretical point of view, the study of the bilingual lexicon still has a number of important questions to confront. The same applies to the practical issues raised by Meara and by Nation, and a rather large gap still exists between the theoretical and practical problems raised by bilingualism in general. In retrospect, however, the need for a better definition of proficiency and (standardized) objective measures of proficiency represent an area in which the two types of researchers may want to cooperate. The notion of proficiency is relevant to all of the different levels of linguistic knowledge, but a good starting point for study may be the lexical level. Just as the construct of language proficiency is by no means clear yet (see, for instance, Verhoeven and De Jong 1992, a volume largely devoted to this issue), it is equally uncertain how exactly lexical proficiency should be operationalised. Vermeer (1992), for instance, argues for a vocabulary test consisting of items representing different frequency bands in the target language; Meara (this volume) expresses hopes of finding (part of) the solution in a measure of lexical access.

An objective measure of proficiency – of whatever nature it would turn out to be – would be extremely useful from a practical point of view. But also from a theoretical point of view further study should be welcomed. Teaching methods, teaching intensity, and practice methods may vary greatly across the existing studies even though the number of years of education in a particular language