THE MULTILINGUAL LEXICON

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Multilingualism both as an individual and social phenomenon is very common in the world considering that there are approximately 5,000 languages and speakers of different languages which have contact with each other in everyday life. Some specific historical, social, economic and political factors have contributed to the development of multilingualism in recent years. Among these factors we can consider the economic difficulties of some countries that result in immigration or the economic and political power of some English speaking countries that have had important implications for the spread of English. Nowadays, it is extremely common to find individuals who can speak more than two languages.

In spite of its importance as a global phenomenon, multilingualism has not received much attention on part of researchers in linguistics, psycholinguistics and applied linguistics. For many years linguists have tried to describe and explain the way human languages work by focusing on monolingual speakers and have ignored bilingual and multilingual speakers. Bilingualism has received a lot of attention in psycholinguistics and applied linguistics in the last few decades but most researchers have not gone beyond bilingualism and have limited their theoretical proposals and empirical work to two languages. For example, most research on language acquisition focuses on first and second language acquisition. Even in cases in which the term ‘second language acquisition’ is said to be used for the acquisition of languages other than the first language, no distinction is made between the acquisition of a second language and additional languages (see for example Sharwood-Smith, 1994). Similarly, the extensive research on the effects of bilingualism on cognitive development devotes very little attention to the effects of bilingualism on the acquisition of additional languages.

So apart from its limited tradition of research, the study of multilingualism has not benefited from the statements made by some researchers about including situations involving the use of more than two languages as part of bilingualism (see for example Schreuder & Weltens, 1993, 3).

Furthermore, the word ‘bilingualism’ which includes the Latin prefix ‘bi’ (two), is not appropriate to refer to more than two languages. In contrast, the term ‘multilingualism’ encompasses not only ‘bilingualism’ but also additional...
languages, three, four or more, and is the most appropriate term to be the cover term for phenomena involving more than one language.

The need to use the term 'multilingualism' and to conduct specific research that goes beyond bilingualism has a theoretical and empirical basis. Bilingualism is a phenomenon that may have a lot in common with multilingualism, but research on the acquisition and processing of two languages cannot explain the specific processes resulting from the interaction between the languages that may result from the simultaneous presence of more than two languages in the multilingual person's mind. Research on multilingualism is more complex than research on bilingualism. Apart from all the factors and processes involved in bilingualism, it has to take into account the implications that the knowledge of more than one language has on the acquisition of an additional language or the multiple relationships between the different linguistic systems in language comprehension and production. Theoretical models of multilingualism (see for example Herdina & Jessner, 2002) emphasize these differences, and recent research on different aspects of multilingualism provides additional evidence of the differences between second and third language acquisition (Cenoz & Genesee, 1998b, Jessner, 1999; Cenoz, Hufeisen & Jessner, 2001a). Furthermore, specific research on the cross-linguistic influence of previously acquired languages on third language acquisition has reported interesting patterns that indicate that third language production has specific characteristics that distinguish it from second language production (see Cenoz, Hufeisen & Jessner, 2001b).

This volume focuses on a specific aspect of multilingualism, the multilingual lexicon, and aims at contributing to develop our knowledge of how multilingual individuals acquire and process language. To date, books on the mental lexicon have mainly been concerned with the processing of one or two languages. The present volume goes beyond this and provides an additional theoretical and empirical basis to justify the development of multilingualism as a specific area of research.

A multilingual individual can be defined as a person who is able to communicate in two or more languages. As is the case with definitions of bilingualism, the ability to communicate covers a broad spectrum of proficiencies from having a native-like command of more than one language to the general ability to function and communicate in more than one language at almost any proficiency level. Balanced bilingualism is highly infrequent and a balanced level of proficiency in several languages is not to be expected if we take into account the different dimensions of communicative competence including linguistic, pragmatic, sociolinguistic, discourse and strategic competence (Celsa-Murcia, Dörnyei & Thurrell, 1995). As has been proposed by Grosjean (1985) and Cook (1992), a multilingual speaker has a specific type of competence which is different from monolingual competence in each of the languages s/he speaks. This volume provides interesting insights into the analysis of one of the areas of multicompétence, the multilingual lexicon.

The lexicon has been considered a hub, or a storehouse, for knowledge, and the acquisition of the lexicon is an essential part of the development of language. Questions in relation to the relationship between L1/L2 interdependence and L1/L2 independence have been a subject of debate. But it is now shifted to the role of the lexicon. The relationship between bilingual and monolingual production models i.e., semantic-prototypical or declarative knowledge.

Other studies have been more concerned with the connections between language and the environment in which language is used. Some scholars have found that the role of bilingualism in language education is reassigned (Cook, 1992; Thurrell, 1995).

Furthermore, the opportunity to speak more than one language in the majority of language learning contexts in the past showed that the multilingual lexicon is crucial for language acquisition.
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1. THE MULTILINGUAL LEXICON

The lexicon has always been at the centre of interest in studies on bilingual individuals and/or second language learners. Discussions on the nature of the acquisition of the lexicon have concentrated on questions concerning similarities and differences between lexical operations in L1 and L2 learning and the relationship between form and meaning in processing one or two languages. One of the main questions in research on the mental lexicon is still formed by the discussion on the L1/L2 interdependence/dependence – linked to the classic compound/coordinate dichotomy. But researchers dealing with the question of separation/integration have now shifted their attention to the degree of interconnectivity. Many of the studies on bilingual representation and processing focus on the conceptual and lexical or associative links in the bilingual mental lexicon (several studies in Harris 1992 and Schreuder & Weltens 1993; Singleton 1999, 167ff.).

Processing models which have been developed so far are models adapted from monolingual processing models such as de Bot’s (1992), which is based on Levelt’s production model (e.g. 1989) where lexical knowledge including lemmas and forms, i.e. sematico-grammatical and morphophonological knowledge, is a part of declarative knowledge.

Other studies on the nature of the lexicon often stem from acquisition studies which were originally motivated by classroom research and concentrate on the connections between the languages which are in contact in a language learning situation. In these studies of cross-linguistic influence the prominent role of the lexicon in language acquisition becomes very obvious. Investigations of codeswitching and -borrowing have formed another research area where the bilingual lexicon has always been a crucial part of the discussion.

To find out whether there are interconnections between the various lexicons in the multilingual’s mind is certainly a burning question for research on multilingualism. Other related issues deal with the way the various lexicons are organized and can be accessed and under which conditions they appear. Whereas many scholars, depending on their theoretical approach and scientific background, tend to subsume multilingualism under bilingualism and/or second language acquisition (e.g. Singleton, 1999: 130), others have started to concentrate on specific aspects of third language acquisition in order to pinpoint the differences between the processes involved in the acquisition and processing of two or more languages. Some important indicators for the activation of languages in a multilingual individual include recency of activation and use of different languages together with the role assignment of specific languages in an individual (Williams & Hammarberg, 1998). The role of typological factors in a more complex language contact situation where more than two languages are involved has also to be reassigned (Cenoz, 2001).

Furthermore, studies employing trilingual or multilingual subjects not only offer the opportunity to investigate the acquisition and processing by testees representing the majority of the world’s population but also offer new perspectives on the study of language acquisition in general. For instance, a study by Abunawara (1992) showed that the number of connections between the lexicons is higher at lower
levels of proficiency. The employment of trilingual versus bilingual participants made very clear that the focus on more than two languages offers invaluable insights not only into multilingual processing but also into psycholinguistic aspects of language learning in general (see also Herdina and Jessner, 2002).

2. OVERVIEW OF CHAPTERS

This volume brings together contributions from international scholars who in their research have focused on various aspects of the multilingual lexicon. The various chapters deal with multilingual processing (Dijkstra, Schönpfugg, transfer in multilinguals (Jessner, Wei, Hall & Ecke, Gibson & Hufeisen, Cenoz), specific aspects of multilingual learning (Müller-Lancé and Spött & McCarthy) and the neurolinguistics of multilingualism (Franceschini, Zappatore & Nitsch). At the end of the volume David Singleton offers a critical overview and synthesis of the enormous number of perspectives represented.

The first two chapters focus on the question of how multilinguals process their different languages during perception, production and related tasks.

* Ton Dijkstra's contribution “Lexical processing in bilinguals and multilinguals: The word selection problem” deals with word selection during visual word recognition in multilinguals and compares it with that of bilinguals (and monolinguals). For Dijkstra the consequences of an increased lexicon are at issue: Does the increased word density of words mean stronger competition between words? What happens to the neighbourhood effect when foreign words are added to the lexicon?

He employs the Interactive Activation Model (by McClelland & Rumelhart, 1981) as a starting point for a multilingual model of visual word recognition, which has three hierarchical, yet interconnected, levels of linguistic representation: features, letters, and words. Dijkstra shows how the model can be used to explain phenomena such as the neighbour effect or the recency effect. When extended to the bilingual domain, it looks as if the Bilingual Interactive Activation Model must be related to a language nonselective access hypothesis with an integrated lexicon consisting of a mix of words from two languages. When extended to three (or more) languages, the more general multilingual variant of the BIA model includes the greater number of words in the lexicon as new lexicons (languages) are added. He concludes that there is no need for a specific multilingual model as multilinguals do not require any special processing mechanisms during word selection and therefore suggests simply extending an existing monolingual or bilingual model.

The second chapter “The transfer-approprate-processing approach and the trilingual’s organisation of the lexicon” deals with the effects of active and passive competence in a second or third language on word fragment completions in either language. Ute Schönpfugg argues that the more languages a speaker knows, the more alternatives there are and the longer the decision process will take; the higher the competence level in one of the languages, the more conceptually driven the word
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Fragment completions will be (and conversely the lower the competence in one of the languages, the more perceptually driven).

Schönplég discusses language processing as it takes place at different levels: a prelinguistic (language independent) conceptual level and a functionally different semantic-conceptual-lexical level. Schönplég tests the uniqueness point of word completions in trilingual Polish speakers of German (L2) and English (L3) and correlates it with their (self-rated) active and passive knowledge in the two languages. Results indicate that the higher the active and passive competence in their L3 English is, the later the uniqueness points for English and German words occur.

The next set of chapters deals with various issues of transfer by exploring different mechanisms and directions on the interaction between the languages of a multilingual.

In her chapter “The nature of cross-linguistic interaction in the multilingual system” Ulrike Jessner concentrates on transfer phenomena which are characteristic for a multilingual setting and which do not occur in bilinguals as such. She emphasizes that these characteristics must be linked to individual variability in multilingual proficiency due to changes in language use.

Basing her findings on the Dynamic Model of Multilingualism (Herdina & Jessner, 2002), which takes a holistic approach to multilingualism as a non-linear, reversible and complex process, Jessner argues that multilingualism cannot be explained using extended monolingual acquisition models because the complexity of a system with parameters unique to the multilingual speaker cannot be found in monolingual or bilingual speakers. Jessner pleads the case for joint investigations of transfer and interference, borrowing and code-switching, thus bringing together typical areas of investigation in second language acquisition research and bilingualism research. She suggests using the umbrella term cross-linguistic interaction to account for various phenomena in multilingual research.

In this chapter she shows that the concept of transfer is more diverse than originally thought and that it includes much more than simple cases of interference. As an example for metalinguistic thinking involving all three languages she reports on several think-aloud-protocols by German-Italian bilinguals learning English as their L3 while writing texts in an academic setting. She describes how subjects use their different languages as supplier sources for their target items, how they employ avoidance and simplification strategies, and how they might over-monitor, especially when cognate words are involved.

After discussing interlanguage transfer effects in general terms in multiple language acquisition, Longxing Wei deals specifically with the L2-L3 transfer phenomenon in the activation of lemmas in his chapter “Activation of lemmas in the multilingual lexicon and transfer in third language learning.” To some extent he employs Levelt’s model of speech production process (1989), as in his view, a monolingual model cannot account for bilingual or even multilingual settings, acknowledging that there is a single mental lexicon for multilinguals with lemmas assigned to each language.

He reports on a study of two L3 speakers, which investigated interlanguage transfer in lexical-conceptual structure, predicate-argument structure, and
morphological realization patterns. He assumes that if the L3-specific entries in the lexicon are not sufficient to express the speaker’s intentions, s/he might turn to other interlanguage items which serve the same communicative purpose. The result is inappropriate lexical choices. Wei shows that a participant with Chinese L1, Japanese L2 and English L3 resorts to the Japanese lemma in order to produce an English lexical item.

Christopher Hall and Peter Ecke introduce a thought-provoking explanation for the default mechanism in L3 vocabulary acquisition in their chapter "Parasitism as a default mechanism in L3 vocabulary acquisition". They hypothesise that the parasitic learning strategy constitutes a default cognitive procedure in which the similarity between novel lexical input and prior lexical knowledge is recognized and used in vocabulary acquisition. In the case of similarity or overlap, new lexical representations will be integrated into the rest of the network with the help of connections to pre-existing representations. If these connections occur between different languages, the result is lexical transfer or cross-linguistic/lexical influence. Hall and Ecke emphasize that this mechanism is not by any means the sole source of erroneous production but that it is a very useful language acquisition procedure.

Hall and Ecke test their hypothesis with students whose native language is Spanish, with English as their L2 and German as their L3. They find that the interconnections of the multilingual lexical network allow cross-linguistic influence at all levels from all possible source languages in any possible target language, yet at various levels of intensity. With regard to L3 acquisition they find that cross-linguistic influence at the form level comes mainly from within the L3, at the conceptual level mostly from the L2, whereas the L1 functions as the source at the frame level, with the L2 exerting the heaviest influence.

The next chapter "Investigating the role of prior foreign language knowledge: translating from an unknown into a known foreign language" by Martha Gibson and Britta Hufeisen investigates the role of prior second language knowledge in a translation study with multilingual learners of English and German. As part of a larger long-term project, this study triangulates results from a questionnaire on language background and metalinguistic awareness with production results from a translation task from an unknown foreign language (Swedish) into a known second language (German or English as L3, L4 or L5). They discuss the instances of transfer and cross-linguistic interaction with respect to the roles the previous languages play in the production process, be they facilitating or hindering.

Gibson and Hufeisen base their experiments on the hypothesis that it is a learner’s L2 which exerts a particularly strong influence on following foreign languages in the framework of a dynamic language acquisition model. This model accounts not only for variables in language systems and learner-inherent factors but also extra-linguistic factors. Gibson and Hufeisen find that good results in the translation task correlate with a high degree of metalinguistic awareness but also with a distinct ability and interest in deriving, deducing, and (successful) guessing and top-down processing techniques.

In "The role of typology in the organization of the multilingual lexicon" Jasone Cenoz touches upon a topic that has not yet received a great deal of attention in the discussion on cross-linguistic influence and transfer. Cenoz discusses the potential
of existing models to account for different language systems with respect to language selection in multilingual processing, e.g. the language node(s). She argues that it is the similarity or distance between languages that is responsible for the usage of procedural and lexical knowledge on the one hand, and the joint or separate storage on the other, in a kind of continuum. It is not the absolute distance of languages but the relative distance (this also includes the subjective impression of closeness or distance) in comparison to the respective L1 that seems to be one of the major predictors of cross-linguistic influence together with the factors recency, proficiency, and L2 status. To explain the concept of cross-linguistic influence, Cenoz proposes a continuum ranging from interactional strategies, where intentional switches into languages other than the target language are employed, to transfer lapses which are non-intentional switches and thus automatic.

In her study with children who are native speakers of Spanish living in the Basque country and were exposed to Basque as an early immersion language (L2), and are learning English as their L3, she found that while speaking English the subjects mainly used Basque when employing interactional strategies.

The third set of contributions in the volume highlights various learning issues, including strategies and vocabulary acquisition:

Johannes Müller-Lancel in “A strategy model of multilingual learning” derives a model of multilingual learning after an extensive discussion of the applicability of existing models to the factors. He identifies factors such as inferencing strategies, various levels of proficiency, and learning conditions as crucial for multilingual language processing and concludes that existing monolingual models or their derivations which have been extended to bilingual or multilingual acquisition do not adequately account for the particularities of multilingual processing. He especially emphasizes factors such as inferencing strategies, individual variation, and cognitive control. He develops a sophisticated (synchronic) connective model incorporating the mental lexicon, language comprehension, and language production.

For the two versions - production and comprehension - of his strategy model, Müller-Lancel follows Levelt’s monolingual speaking model (1989), integrating the problem of identifying second language items, the use of inferencing strategies, and the distinction between graphic and phonetic input and output. He identifies three types of multilinguals, the monolinguid, the bilingual, and the multilingual, the latter having strong cross-linguistic connections between the mental representations of all her or his languages and who at the same time seems to be the most vivacious and daring language learner of the three types.

The chapter by Carol Spött and Michael McCarthy “Formulaic utterances in the multilingual context” deals with lexical units consisting of more than one word, known as formulaic utterances. These utterances can be idiomatic combinations, metaphors, or collocations based on syntagmatic patterns which are neither irregular nor frequent. Spött and McCarthy report on their ongoing research into the questions of whether the processing of formulaic utterances differs from that of single-word vocabulary items, whether such processing is more problematic for the multilingual learner, how these items are linked in the various lexicons the multilingual learner can access, and which role formulaic utterances play in a multilingual context. They argue that formulaic utterances are worthy of intensive
research given the assumption that they are stored, accessed and retrieved not as single lexical items that must be constructed and re-constructed syntactically, but as chunks.

For the empirical part of their chapter formulaic utterances from the five-million word CANCODE spoken corpus of British English were taught to various groups of learners in order find evidence for the claim that formulaic utterances are a difficult feature of language acquisition, whether they are processed phonologically, and whether and how cross-linguistic influence can be detected. The focus was on semantically opaque chunks. Students were to find L3 or L4 (Spanish, Italian, or French) equivalents of the given English L2 chunks, and despite frequent reports by the students that they understood the L2 utterance, they nevertheless found it difficult to produce L3 or L4 equivalents. This task became more and more difficult the more idiomatic the L2 string.

The next chapter in this volume concentrates on neurolinguistic issues of multilingualism. In “Lexicon in the brain: what neurobiology has to say about languages” Rita Franceschini, Daniela Zappatori and Cordula Nitsch set out to explain what neurobiological experiments can tell us about the acquisition of languages in relation to the multilingual lexicon. Although the authors caution that new neuroimaging techniques to make brain activity visible are not yet very precise concerning localization and the dimension of time and development, linguistic research can still benefit from interesting insights into what happens when we speak, hear, or think about language. The question of whether parts of different languages are "stored" together or separately is an especially crucial one which might be solved via brain imaging studies. From earlier studies we know which brain areas are active, for instance, in language production and comprehension, when lexical or semantic decisions are being made, and syntax structures are being processed but the exact correlation between linguistic components and brain structures continues to be debated.

As almost all imaging studies deal with bilinguals, the authors report on these and try to link the results to questions concerning multilingualism. It seems that language activities such as word generation basically call for the same type of brain activation, even if the languages under investigation are as far apart typologically as Chinese and English. For some linguistic tasks, the age factor seemed to play a decisive role such that it usually resulted in increased activity, and with certain tasks, in differing areas than for younger participants and the speakers who had acquired their language(s) early in life.

Franceschini et al. also report that early multilinguals tended to integrate other languages learned later in life into their existing networks, whereas late multilinguals displayed higher variability for early and late languages, and new neural substrate had to be recruited. Together with the main functional principle of automatization - not a language-specific mechanism - language proficiency was identified as another critical determinant of the representation of a second language in the brain. Linguistically relevant entities such as language typology were found to play no decisive or even minor role in any of the studies. These results, however, must be considered against the backdrop of variables such as experimental task and the individual language biography of the subjects. The authors caution that many
other influencing factors have not yet been tested in isolation and/or in experimental situations.

The volume concludes with a recapitulation by David Singleton "Perspectives on the multilingual lexicon: a critical synthesis" of the main ideas presented in the other chapters. He discusses questions of lexical storage, how they are being dealt with in the various contributions and in which direction current research seems to be going. Singleton then concentrates on the important question of interdependence and independence.

All in all we hope that this book will stimulate further interest in the worldwide phenomenon of multilingualism, which we feel should be treated as the norm in linguistics and not as the exception.

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