22 mm   FC

Istvan Kecskes,
Liliana Albertazzi
Editors
Cognitive Aspects of Bilingualism

Kecskes · Albertazzi *Eds.*

Cognitive Aspects of Bilingualism

A unique feature of this book is that chapters favor that line of cognitive linguistics which makes a clear distinction between real world and projected world. Information conveyed by language must be about the projected world. Both the experimental results and the systematic claims in this volume call for a weak form of whorfianism. Also, chapters add some relatively unexplored issues of bilingualism to the well-known ones, such as gender systems in the bilingual mind, context and task, synergic concepts, blending, the relationship between lexical categorization and ontological categorization among others.

Istvan Kecskes
Liliana Albertazzi
Editors

Cognitive Aspects of Bilingualism

❯ springer.com

Springer

COGNITIVE ASPECTS OF BILINGUALISM

COGNITIVE ASPECTS OF BILINGUALISM

Edited by

ISTVAN KECSKES
State University of New York,
Albany, NY, USA

and

LILIANA ALBERTAZZI
Trento University,
Rovereto, Italy

Springer

CONTENTS

Part 2 Bilingual Language Processing

Our everyday life is characterized by conscious purposiveness. Our actions, from preparing lunch to designing an experiment, are directed at goals. Anderson (1996) argued that this purposiveness reveals itself partly in our conscious awareness, partly in the organization of our thoughts and actions. Purposiveness involves a cognitive-functional perspective, in which thought and action are considered in relation to their functions in humans' goal-oriented behavior. Language use is goal-oriented: we intend to communicate something to someone else. Research has demonstrated that a significant amount of cognitive development results from the internalization of interpersonal communicative processes. Consequently, language research should be cognitive research, and a cognitive theory of language appears to be the most suitable theoretical framework for bringing together psychology, linguistics, and bi- and multilingualism. This volume presents the latest research on cognitive aspects of bilingualism. Cognitive approaches to bilingualism attempt to find out what happens if the interpersonal communicative processes involve the use of two or more languages.

The basic assumptions of cognitive theories of language are related to the ontology and the epistemology of human language. In cognitive linguistic theories researchers take different approaches to the "outside world-→ perception-→ inside world" relationships. The two main approaches are represented in the works of Langacker (1991, 1999) and Jackendoff (1983, 2002). Langacker's cognitive theory of language analyzes meaning only on the conceptual level. His claim that "meaning reduces to conceptualization (mental experiences)" refers to the fact that perception is part of the process of conceptualization, and if so, then there are no clear boundaries between perception and interpretation.

Langacker focuses on epistemology rather than ontology because for him perception is incorporated in the conceptualization process. In his theory there is little said about the outside world because he is mainly interested in the process of conceptualization. Jackendoff makes a clear distinction between real world and projected world, although he emphasizes that we have conscious access only to the projected world, which is "the world as unconsciously organized by the mind." Information conveyed by language must be about the projected world. Most of the chapters in this volume follow Jackendoff's line, which is a good fit to bi- and multilingual research because people with two or more languages may see the world from two perspectives, or from a synergic perspective. Differences in the outside world usually result in different projected worlds. Both the experimental results and the systematic claims in this volume call for a weak form of Whorfianism.

In earlier research studies in bilingualism, the bilingual person and the product of thinking were at the center of attention, while recent trends have seemed to favor the process of thinking, focusing on language recall, reaction time, information processing, and memorization on the one hand, and social and conceptual development on the other. In this volume some relatively new or less-researched issues will be added to the well-known ones, such as gender systems in the bilingual mind, context and task, synergic concepts, conceptual blending, the relationship between lexical categorization and ontological categorization, and others. Discussions on these issues are unified by a common endeavor of the authors: to add something to the everlasting debate about the differences and similarities between monolingual and bilingual language development and use.

Although current research tends to conclude that there are no major differences between monolinguals and bi- and multilinguals because their language systems develop and are used in a similar way (e.g., Gumperz & Cook-Gumperz 2005; Paradis in this volume) researchers do not stop looking for differences. Several chapters (Paradis, Kecskes, Albertazzi, Kharkhurin, Kovacs) address this intriguing issue directly. Recent findings that the efficiency of bilingual language acquisition is fundamentally similar to monolingual language acquisition make one think that, at least in the language domain, bilingualism does not seem

to alter the flow of normal language development. However, as Kovacs says in this volume, even if the outcome seems to be similar, this does not necessarily mean that the bilingual brain recruits the same mechanisms in the same manner when processing two languages as the monolingual brain operating one language. Mechanisms such as attention, inhibition, and selection might be used to a greater extent when dealing with complex input from which bilinguals have to construct two different systems.

Three chapters (Kecskes, Kharkhurin, Kovacs) provide evidence of the capacity of bilinguals to perform blending operations among concepts in L1 and L2, but it is questionable if there is a real process of fusion. Some evidence refers to the fact that the concepts in L1 maintain their identity notwithstanding their being more easily translated, associated, and synthesized in L2. A bilingual is easily able to build up hierarchies of conceptualization, but the relative spaces do not fuse together. Kecskes' findings show that there is some kind of synergism between existing L1-based knowledge and knowledge gained through the L2. Receiving new information through L2, bilinguals may change the conceptual domain attached to particular labels (words) and develop what is called "synergic concepts." However, further research is needed to determine how exactly this process occurs, and what the outcomes of this conceptual change are in the bilingual mind.

The chapters present both experimental data and systematic inquiries. The book consists of two parts. In the first part, the chapters focus on the structure and components of the bilingual cognitive system, while chapters in the second part discuss issues concerning bilingual language processing.

In the first part of the volume there are six chapters. *Paradis* argues for a modular system of the bilingual mind. The neurofunctional system underlying implicit linguistic competence contains one subsystem for each language acquired by the speaker. Each subsystem contains its own phonology, morphosyntax, semantics and lexicon. The language subsystems, including their lexicons, are neurofunctionally distinct, but not stored in separate cerebral areas. Rather, the neural circuits that subserve them, while distinct, are intertwined within the same gross anatomical area. *Kecskes* presents his hypothesis of synergic concepts

that are the results of conceptual blending. According to his approach, bilinguals get information about the same or similar concepts through two language channels. Because they have a common underlying conceptual base (CUCB) the blended information results in concepts that are neither exactly equal to the corresponding L1 concept nor to the corresponding L2 concept. Synergic concepts are a group of concepts that are lexicalized in both languages, but have a different socio-cultural load in each language. *Albertazzi*'s chapter underlines the importance of the ontological level of reality for linguistic research, which, in her opinion, has been ignored to a particular extent in cognitive linguistics in recent years. She emphasizes the structural differences among different kinds of categories, distinguishing between general ontological categories and regional ontological ones. The chapter shows that "recognizing" an item does not mean, by default, applying a taxonomic category or a base category. On that basis, a proposal is made for experiments to verify the existence of *presentative* pathologies, that is, pathologies occurring at the very basic format of representations. *Salamoura*'s study investigates the nature of gender representations in the bilingual lexicon, and claims that research on the organization of the bilingual lexicon points to an L1–L2 integrated gender system in which cognates rely more on the L1 gender value than noncognates. The chapter also suggests that this integrated gender system is not restricted to translation-equivalent nouns only, but that any L1 and L2 nouns with the same gender value share a gender representation in the bilingual lexicon. *Rusconi, Galfano and Job* intended to frame the relationship between bilingualism and number processing into a novel perspective by reporting some of the most recent empirical findings. They argue that a great deal of our knowledge of numbers is traded, thought, and manipulated by means of language, and seek an answer to the question of how essential verbal language is to numerical knowledge itself. *Kharkhurin*'s study investigates a possible effect that bilingualism might have on creative abilities. Three factors in cross-linguistic and cross-cultural experiences of bilingual individuals are examined: language proficiency, age of second language acquisition, and experience and participation in two cultures. The empirical study with Russian-English bilingual immigrants living in the United States and English monolingual native speakers revealed

that cross-linguistic factors in bilinguals' development had an influence on their divergent thinking abilities, which is a necessary component of creative thought. These findings suggest that although bilingualism may lay the foundation of creative thinking it does not necessarily imply being creative. To account for these findings, a cross-language transfer is proposed as a cognitive mechanism facilitating divergent thinking in bilinguals.

The second part contains five chapters. In the first chapter, *Dijkstra* argues that it is quite common in psycholinguistics to ignore the effects of task and context and talk about general models for particular domains of language processing. Researchers have a tendency to speak about, for instance, models of word recognition and parsing, as if performance would not depend on the actual circumstance in which it occurs. His chapter moves away from this tradition and examines the effects of task and context on language processing. He proposes a bilingual word recognition model that includes a system that explicitly takes into account task and context aspects. He demonstrates that the extended model is compatible not only with reaction time data, but also with data from electrophysiological and neuro-imaging techniques. In their chapter, *Kroll and Linck* examine the interplay of representation and skill in both second language learners and proficient bilinguals. A particular focus in their discussion concerns the implications of the finding that the activity of the unintended language is not eliminated once individuals achieve proficiency in the L2. A large body of recent research has demonstrated that even highly proficient bilinguals cannot effectively switch off the unintended language. There is evidence that aspects of both languages are active and potentially compete for selection. Although it might be expected that the weaker L2 would be affected by the more dominant L1 when learners are in early stages of L2 acquisition, the observation of parallel language activity among the most proficient bilinguals suggests that L2 skill is not a simple matter of overcoming the influence of L1.

In an empirical study, *Andonova, Gosheva, Schaffai* and *Janyan* investigate the effect of the L2 gender system on L1 gender classification. They seek answers to the following questions: Does the acquisition of a second language in which grammatical gender demarcations do not

repeat those in a bilingual's first language lead to a contradictory set of expectations, hence less overall reliance on gender as a cue in linguistic and non-linguistic processing, or does it modify their representations of the grammatical items in their first language in line with the gender system of the second language? More specifically, can the grammatical system of L2 affect classification choices in L1 directly; that is, can the availability of a gender-marking system on nouns in L2 bias bilinguals' preference for masculine vs. feminine gender classifications in their L1 in a way that would show alignment with the grammar of their second language?

Kovacs makes an attempt to shed light on the ways in which the experience of being exposed to more than one language very early in childhood could influence the development of different cognitive abilities (with special emphasis on executive control and theory of mind). She discusses questions analogous to the ones that were asked when addressing the so-called paradox of bilingual language acquisition (Petitto et al. 2001), but she mainly focuses on socio-cognitive domains somewhat different from language development. *Soriente* examines language development in a bilingual child growing up with two typologically distinct languages – Italian and Jakarta Indonesian. She presents a case study of unbalanced bilingualism focusing on the development of WH-forms and concludes that the dominance of the loose Indonesian syntactic pattern results in a non-target word order in the construction of early WH-questions in Italian. The study discusses how children recognize languages as separate systems and how they gradually develop the cognitive patterns required for competence in separate though practically co-extensive linguistic domains.

Istvan Kecskes and Liliana Albertazzi

REFERENCES

Anderson, N. H. 1996. *A functional theory of cognition.* Mahwah: Erlbaum.
Gumperz, J., and Jenny Cook-Gumperz. 2005. Making space for bilingual communicative practice. *Intercultural Pragmatics*, 2(1): 1–25.
Jackendoff, R. 1983. *Semantics and Cognition*. Cambridge: MIT.

Jackendoff, R. 2002. *Foundation of Language.* Oxford: Oxford University Press.

Langacker, R. W. 1991. *Concept, Image and Symbol*, Berlin/New York: Mouton de Gruyter.

Langacker, R. W. 1999. *Grammar and Conceptualization.* Berlin/New York: Mouton de Gruyter.

Petitto, L. A., Katerelos, M., Levy, B. G., Gauna, K., Tetreault, K., and Ferraro, V. 2001. Bilingual signed and spoken language acquisition from birth: implications for the mechanisms underlying early bilingual language acquisition. *Journal of Child Language*, 28: 453–496.

PART 1

STRUCTURE AND COMPONENTS OF THE BILINGUAL COGNITIVE SYSTEM

THE NEUROFUNCTIONAL COMPONENTS
OF THE BILINGUAL COGNITIVE SYSTEM

Michel Paradis

McGill University, Montreal

Abstract

The cognitive architecture of bilingual speakers contains at least four systems involved in verbal communication (i.e., implicit linguistic competence, explicit metalinguistic knowledge, pragmatic abilities and affect/motivation). The neurofunctional system that subserves implicit linguistic competence contains as many subsystems as the speaker has acquired languages. Each subsystem contains its phonology, morphology, syntax, semantics and lexicon. These language subsystems are differentially connected to a single conceptual system that groups conceptual features together in accordance with the specific lexical semantic constraints of words in each language and the relevant pragmatic circumstances at the time of their use (Paradis 2004).

Three main points will be discussed: (1) the distinction between the cerebral representation of concepts on the one hand and of lexical semantics on the other; (2) the representation of languages (including lexical semantics) as dissociable subsystems of the neurofunctional language system, connected to a single common conceptual system; and (3) the lack of qualitative difference between unilingual and bilingual brains in terms of conceptual organization and processing (though the contents of the representations may, and often do, differ). To paraphrase Kecskes and Papp (2000: 37), the main question will be: To what extent are the two languages [*neuro*] functionally independent, and to what extent do they constitute a single [*neuro*]functional system? Special emphasis will be placed on the relationship between the linguistic and conceptual levels.

1. BACKGROUND

1.1. Neurofunctional Components of the Verbal Communication System

As described in greater detail in a neurolinguistic theory of bilingualism (Paradis 2004), the native language (i.e., the grammar, what can be described by linguists in terms of rules: phonology, morphology, syntax and the lexicon) is acquired incidentally (i.e., by paying