

REVIEWS

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Eva M. Fernández & Helen Smith Cairns (eds.), *The handbook of psycholinguistics*. Hoboken, NJ: John Wiley & Sons, 2018. Pp. xxv + 750.

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Since the last century, psycholinguistics has undergone a significant development marked especially by attempts to explore the tight coupling between language comprehension and production.¹ *The Handbook of Psycholinguistics* presents a comprehensive survey of psycholinguistic theory, research and methodology early in the 21st century, with special emphasis on the relation and interaction between comprehension and production.

As a handbook reflecting the latest trends and advances, the volume not only provides a rigorous and technical treatment of a wide range of topics in psycholinguistics, but also has its own way of organizing the main components. The *Handbook* approaches the subfields of psycholinguistics beginning with production, followed by comprehension and acquisition, in contrast to previous handbooks of psycholinguistics such as M. Gareth Gaskell & Gerry Altmann's *The Oxford Handbook of Psycholinguistics* (Gaskell & Altmann 2007) and Alan Garnham's *Psycholinguistics (PLE: Psycholinguistics): Central Topics* (Garnham 2013), which generally give priority to the independent development of each subfield and structure the contents in order of comprehension, production and acquisition.

This substantial volume consists of thirty chapters, organized into three parts. In the Prologue, Eva M. Fernández & Helen Smith Cairns first review recent progress in psycholinguistic research, then demonstrate the importance of assembling contemporary research in the field of psycholinguistics, and, finally, briefly describe the main contents of each part. Part I, 'Production', mainly deals with the development and organization of the entire plan for the utterance, covering how syntactic structures are generated, how redundancy and givenness are conveyed, how multiple language systems are coordinated, and how conversations are managed (3). Part II, 'Comprehension', is organized in a roughly bottom-up way, starting with the lower-level word processing, continuing through the

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comprehension of sentence and discourse, and moving upward to higher-level semantic and pragmatic processing required for language comprehension. Part III, 'Acquisition', attempts to explore whether acquisition differs, depending on whether it is of a first or a second language, or on whether it is one of two languages being simultaneously acquired, or whether the language is acquired late.

Part I begins with Chapter 2, 'Syntactic encoding: Novel insights into the relationship between grammar and processing', by Julie Franck, which deals with how syntactic representations are generated. In this chapter, the author describes several psycholinguistic approaches to syntactic encoding and proposes a functional model of agreement that involves two components, feature selection and controller selection. This model establishes a new pathway to the analysis of syntactic representations and processes involved in agreement production by arguing that semantic factors and morphological factors influence both the marking and the morphing processes, a two-level functional architecture proposed by Garrett (1975) in the standard model of syntactic encoding. This differs from the marking and morphing model of agreement attraction, developed by Bock and her colleagues (Bock et al. 2001), which posits that semantic factors affect the first stage of marking and syntactic and morphological factors affect the second stage of morphing.

Chapter 3, 'Signal reduction and linguistic encoding', explores how the redundancy and givenness are conveyed. By taking 'probabilistic reduction' as the focus, the authors, T. Florian Jaeger & Esteban Buz, fully demonstrate that speakers have a remarkable degree of flexibility in the amount or quality of the signal that encodes the speaker's message. Compared with Matthew J. Traxler & Morton A. Gernsbacher's *Handbook of Psycholinguistics* (Traxler & Gernsbacher 2006; henceforth T&G), which only lists the preferences of speakers of different languages for certain syntactic forms, the examination of how the redundancy and givenness are conveyed provides a window into the architecture underlying the language production system, thus making this volume more informative and meaningful.

Part I turns next to the understanding of syntax in different populations, beginning with Chapter 4, 'Production in bilingual and multilingual speakers', by Daniela Paolieri, Luis Morales & Teresa Bajo, followed by Ronnie B. Wilbur's review of production of signed utterances in Chapter 5, 'Production of signed utterances'. These studies, taken together, set up a unified framework in which to place empirical findings and theories concerning specific aspects of language production in bilinguals, multilinguals and sign language users.

In Chapter 6, 'Parity and disparity in conversational interaction', Jennifer S. Pardo examines theories emphasizing language use as a coordinated activity and those underlining social constraints on language variation. The greatest contribution of this chapter is the proposal of a new framework integrating approaches to language use under a general entrainment perspective on coordinated behavior.

More importantly, the concern with this topic demonstrates that modern psycholinguistics emphasizes the appreciation for language use in natural settings rather than traditional psycholinguistic conceptualizations of communication.

In Chapter 7, 'Models linking production and comprehension', the final chapter in Part I, Chiara Gambi & Martin J. Pickering review the models that make explicit explanations of the interaction between production and comprehension. Evidence from these models shows that the sharing of processes between production and comprehension triggers a body of research in the 21st century, in stark contrast to previous studies that focus more on the disassociation and asymmetries between production and comprehension.

Apart from the issues discussed in Part I, psycholinguistics also involves speech perception, lexical access, morphological and sentence processing. Part II, 'Comprehension', mainly addresses these core issues. Chapter 9, 'Speech perception: Research, theory and clinical application', by David B. Pisoni, and Chapter 10, 'Cross-language and second language speech perception', by Ocke-Schwen Bohn, discuss how individuals perceive units of speech. Drawing on the review of the development of speech perception, the clinical findings for deaf children with cochlear implants as well as cross language and second language speech perception, the authors point out that the traditional symbol-processing view of speech perception seems to be incomplete due to ignoring the robust adaptation and accommodation of the auditory system and the brain.

Chapter 11, 'Models of lexical access and morphological processing', by Petar Milin, Eva Smolka & Laurie Beth Feldman, investigates the lexical access and morphological processing, a theme that recurs throughout psycholinguistics. By contrasting lexically-based approaches and learning-based approaches to the processing of morphologically complex words, the authors give a systematic explanation of how humans make and understand morphologically complex words.

Chapter 12, 'Orthography, word recognition and reading', by David Braze & Tao Gong, explores written word recognition by taking writing systems of different languages as examples. The findings indicate that the mapping between symbols and linguistic units is highly complex. Chapter 13, 'The bilingual lexicon', by Judith F. Kroll & Fengyang Ma, contributes profound insights into the nature of bilingualism itself and the dynamic interactions across the bilingual's two languages. This represents a significant advantage over *The Cambridge Handbook of Psycholinguistics* (henceforth *CHP*), edited by Michael J. Spivey, Ken Mcrae & Marc F. Joanisse (Spivey, Mcrae & Joanisse 2012), which pays little attention to this issue.

Since a comprehensive account of language processing requires understanding more than words alone, a review of sentence processing and interpretation is then presented in Chapter 14, 'Sentence processing and interpretation in monolinguals and bilinguals: Classical and contemporary approaches', by Matthew J. Traxler, Liv J. Hoversten & Trevor A. Brothers. Although this issue is also examined by other handbooks of psycholinguistics, the current review is more up to date

due to abundant evidence from the field of cognitive neuroscience, indicating that research on language comprehension benefits from the processing techniques and cutting-edge research methods.

Chapter 15, 'The comprehension of anaphora and verb agreement', by Janet L. Nicol & Andrew Barss, focuses on the comprehension of agreeing phrases. By reviewing empirical research on anaphors and verb agreement, the authors point out that the comprehension of the two processes appears to be similar. More importantly, this study provides a new perspective for future research on language comprehension.

Chapter 16, 'Prosody in sentence processing', by Elizabeth Pratt, deals with prosodic features and structures in sentence processing and how these factors interact with processing during comprehension and production. The importance of prosodic representations in both language comprehension and language production is fully demonstrated. This is also emphasized in T&G and both handbooks point out that there is a long way to go before we can fully understand how multiple prosodic factors work together to influence sentence comprehension.

Chapter 17, 'Semantic-pragmatic processing', by Petra B. Schumacher, and Chapter 18, 'Comprehension in older adult populations: Healthy aging, aphasia, and dementia', by Jet M. J. Vonk, Eve Higby & Loraine K. Obler, concentrate on the higher-level semantic and pragmatic processing and the differences among healthy elderly people, elderly people with aphasia and those with dementia in language comprehension. Chapter 19, 'Neurolinguistic studies of sentence processing', by Michael A. Skeide & Angela D. Friederici, completes Part II with a review of neurolinguistic studies on sentence comprehension, taking particular interest in the comprehension of syntax and semantics.

Part III, 'Acquisition', centers on bilingual, second, and late language acquisition. The first three chapters in Part III enumerate examples of language learning, paving the way for further discussion and proposals. Chapter 21, 'Speech perception in infants: Propagating the effects of language experience', by Catherine T. Best, focuses on the developmental changes in infants' speech perception that result from language experience. Chapter 22, 'Children's performance abilities: Language production', by Cecile Mckee, Dana McDaniel & Merrill F. Garrett, reviews children's developing capacity for phonological, lexical and syntactic knowledge. Chapter 23, 'Language comprehension in monolingual and bilingual children', by Krista Byers-Heinlein & Casey Lew-Williams, deals with children's development of looking, listening and language ability, and offers a thorough investigation into the question of how children navigate the path from hearing to understanding.

On these grounds, the volume turns to the most impressive and intriguing accomplishments involved in language acquisition, namely, lexical, morphological and syntactic acquisition, and the relation between social interaction and language acquisition. How children ultimately converge on lexical acquisition, a topic that receives little attention in T&G and *CHP*, is reviewed in Chapter 24, 'Names for things . . . and actions and events: Following in the footsteps of

Roger Brown', by Dani Levine, Kristina Strother-Garcia, Kathy Hirsh-Pasek & Roberta Michnick Golinkoff. Rather than providing a general theoretical and methodological review of the work, which would prove difficult without access to the word itself, this review provides a detailed account of what counts as a word, the process children use to learn words, the required input for learning, the near-universal patterns observed in word learning as well as the contemporary models of word learning to reveal how far we have come in understanding how children learn words. Chapter 25, 'The acquisition of morphology', by Kamil Ud Deen, and Chapter 26, 'The acquisition of syntax', by Nina Hyams & Robyn Orfitelli, move away from the basic lexical acquisition to relatively complex morphological and syntactic acquisition. In terms of the acquisition of morphology, Kamil Ud Deen discusses the generalizations about the acquisition of inflectional morphology, with special emphasis on the role input plays in the arena of overregularization. As for children's syntactic development, the volume gives priority to the facets of grammar acquisition and areas that inform theories of children's grammar. Although this issue is also examined in T&G, the present volume differs in that it focuses more on the competence-based or performance-based account of particular developmental phenomena, while T&G takes as its research focus how the nativist approach and the constructivist approach deal with language's dependence on structure.

In Chapter 27, 'Social interaction and language acquisition: Toward a neurobiological view', Sarah Roseberry Lytle & Patricia K. Kuhl explore the relation between social interaction and language acquisition. By presenting neurobiological and behavioral data on the effects of social interaction on language acquisition, coupled with evidence from the work on autistic children and on non-human animals, the authors argue that social interaction 'gates' language learning (621). The abundant empirical evidence makes the present volume more informative and convincing when compared with *CHP*, which largely limits itself to discussion of what children need to know in order to engage in conversation.

After analyzing what is universal in language acquisition, the authors turn to how language differs among different speech communities: bilingual acquisition, second language acquisition and sign language acquisition.

Chapter 28, 'Bilingual acquisition: A morphosyntactic perspective on simultaneous and early successive language development', by Jürgen M. Meisel, deals with bilingual acquisition from a morphosyntactic perspective, testing the particularities of first language acquisition and second language acquisition, and gaining insights into the nature of the 'Language Making Capability' (635). Chapter 29, 'The development of morphosyntax in child and adult second language acquisition', by Gita Martohardjono & Elaine C. Klein, reviews the development of morphosyntax in child and adult second language acquisition, focusing primarily on how the related theories and methodologies contribute to the knowledge of the second language development process. The last chapter in Part III, Chapter 30, 'Signed language acquisition: Input', by Judy Kegl, investigates the research into sign language acquisition and the challenges that

deaf language learners face in gleaning information from input. This effort is of great significance to the complete understanding of morphosyntax in acquisition.

In their entirety, the thirty chapters demonstrate how psycholinguistics, as an interdisciplinary field, approaches language production, language comprehension and language acquisition. This handbook is a well-written synthesis of representative studies in psycholinguistics. First, it is highly informative in that it contains a wealth of theoretical studies and empirical research, consequently making it a particularly useful resource and reference. Second, the handbook creates a rich picture of how language works in the human mind and how it is acquired, enabling researchers to quickly understand the state of psycholinguistics in the 21st century. The volume thus proves itself to be a worthwhile read for anyone interested in this area.

REFERENCES

- Bock, K., K. M. Eberhard, J. C. Cutting, A. S. Meyer & H. Schriefers. 2001. Some attractions of verb agreement. *Cognitive Psychology* 43, 83–128.
- Garnham, Alan. 2013. *Psycholinguistics: Central Topics* (Psychology Library Editions: Psycholinguistics). London: Psychology Press.
- Garrett, M. F. 1975. The analysis of sentence production. In Gordon H. Bower (ed.), *The psychology of learning and motivation*, vol. 9, 133–177. New York: Academic Press.
- Gaskell, M. Gareth & Gerry Altmann. 2007. *Oxford handbook of psycholinguistics*. Oxford: Oxford University Press.
- Spivey, Michael J., Ken Mcrae & Marc F. Joanisse. 2012. *The Cambridge handbook of psycholinguistics*. Cambridge: Cambridge University Press.
- Traxler, Matthew J. & Morton A. Gernsbacher. 2006. *Handbook of psycholinguistics*. Amsterdam: Elsevier.

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T. Givón, *The story of zero*. Amsterdam & Philadelphia, PA: John Benjamins, 2017. Pp. xii + 414.

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Zero is a particular means of encoding phoric relations, which provides substitution of words or phrases in neighboring clauses to avoid repetition. This phenomenon has long been studied in rhetoric, poetry or narratives in terms of ellipsis or pronouns. *The Story of Zero* is the first monograph that systematically and exclusively explores the use of zero anaphora from a diachronic point of view.