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Book Review

### ***Language Development Over the Lifespan***

Kees de Bot and Robert W. Schrauf, Eds. New York: Routledge. 2009. Pp. v + 313.

*Language Development over the Lifespan*, compiled by Kees de Bot and Robert W. Schrauf, is a collection of articles that explore language development—both language acquisition and language attrition—from a lifespan perspective. This volume of articles was, first of all, intended as a reference resource for research on language development and the aging process and as a text for MA courses in applied linguistics/bilingualism programs. More importantly, this book establishes a new and exciting perspective on language acquisition by considering developmental language phenomena, that is, “developmental” changes in language that occur over the span of a lifetime. This volume thus opens up new windows to research language acquisition from a developmental perspective. Language development becomes a function of the interaction of timescales both within the lifespan of the individual and at a larger “biocultural” (i.e., historical) level of language development. Historical events like the adoption of an official language by a government, for example, generate changes in language use at a macro-level, which in turn produce “cohort effects” that affect language development within the individual. A key concept to this lifespan perspective is that language is a dynamic system involving multiple components and subsystems. This book provides a comprehensive overview of the impact of cognitive and psychological factors, as well as social and cultural factors like the role of life events in the dynamic development of language.

This volume of articles on language development over the lifespan includes four parts. Part I presents three approaches to first (L1) and second language (L2) development: a Universal Grammar (UG) perspective, a usage-based perspective, and a comprehensive Dynamic Systems Theory (i.e., DST) approach to language development. Part II examines second language development from two different perspectives—first, from an ontogenetic sociocultural theory perspective,—and second, as a dynamic process in which the language learner acts with the help of and is subject to the constraints of a particular situation. Not only does this section include an examination of language acquisition as part of language development, but it also examines primary language impairment and language attrition as important dimensions of language development over the lifespan. Part III examines the non-verbal aspects of language development, first looking at gesture and then at the development of sign language. Part IV explores methodological and neurolinguistic aspects of development, first considering longitudinal designs in studies of multilingualism and then examining the role of working memory in language development and finally the development of neural substrates of language over the lifespan.

In Part I, three theoretical approaches to language development are presented. In “First and Second Language Development from a UG Perspective,” Unsworth outlines the role of Universal Grammar in L1, especially how input serves as a trigger for the activation of innate knowledge of language (i.e., UG) in first language acquisition. Research in the role of UG in L2 development has focused on whether interlanguage (i.e., IL) grammars are constrained in the same way as L1 grammars and the resulting descriptions of language systems represent a valuable contribution to language acquisition. The generative approach, however, does not examine the developmental problem of language acquisition. In “First Language Acquisition from a Usage-based Perspective,” Behrens counters the nativist approach with a usage-based perspective, which emphasizes that language learning in children is essentially a consequence of

their experience with language use, and that the linguistic representations in adults are basically usage-based, not innate. Behrens makes a convincing argument for the role of “social cognition, pattern recognition, and efficient learning mechanisms” in the acquisition of complex features of language (p. 40). Finally, in “A Comprehensive Dynamic Systems theory of Language Development,” van Geert discusses language development from a DST approach. From this perspective, language development is a complex dynamic system consisting of many interdependent components and properties and operating over various interconnected timescales, an approach that resonated to me as a linguist and a language educator. As practitioners, we understand that language acquisition involves much more than learning the phonetic inventory, memorizing the lexicon, or studying the syntactic structure of the language. Language acquisition is influenced by individual psychological traits, such as personality, motivation, or age, as well as socio-political factors that support or suppress the use of a particular language. Using a DST approach, these dimensions of language development can be explored to gain a more complete understanding of language acquisition as a process subject to the interaction and interdependence of these variables. On this basis, Van Geert proposes several research models designed to account for the impact of a multitude of variables on second language acquisition. Dynamic growth models of development, for example, would take into account all the dimensions and factors that comprise the language system under investigation. Essential features of the dynamics of the system, or indicator variables, would be identified, and the rate of change of these variables would be measured on a vector of motion defined by the rules that govern the basic law of change in that system. Using dynamic growth models, we can identify and measure the different dimensions of language acquisition to create a comprehensive landscape of language development over the lifespan.

In Part II, second language development is first viewed from an Ontogenetic Sociocultural Theory perspective by de Guerrero in “Lifespan Development of the L2 as an Intellectualization Process.” Within this Vygotskian sociocultural approach to language development as an intellectualization process, de Guerrero gives particular consideration to the age factor. This notion that language acquisition is a result of the development of the ability to think is not new in first language acquisition, but de Guerrero maintains that the L2 acquisition process in adults is similarly accomplished through the internalization of L2 social speech that culminates in the ability to think in the L2. In “A Dynamic View of Second Language Development across the Lifespan,” Lowie, Verspoor, and de Bot view second language development from a DST perspective, similar to that of van Geert. Their description of second language development as a dynamic system, however, is much more exciting than the analytical approach in van Geert’s article. Lowie, *et al.*, describe second language development as a non-static, non-linear system comprising various physic, social, and cognitive systems that interact with one another within the L2 learner. The learner is also situated in a setting with other individuals interacting in social and economic communities. Like most dynamic systems, the language system is nested within the cognitive system, which is in turn nested within the physical system of the body. The individual learner is also nested in the learning community, which in turn is nested in the larger society. Lowie, Verspoor, and de Bot, together with van Geert, make a convincing case that a DST approach to second language development would offer a more comprehensive description of second language development, and could provide a valuable model for further research into second language development. Finally, in “Bilinguals with Primary Language impairment,” Kohnert further extends language development across the lifespan with a compelling consideration of primary language impairment at different ages—in

monolingual and bilingual children, and, in particular, in bilingual adults with primary acquired aphasia. At all ages, it may be difficult to ascertain whether delays in language development are due to primary language impairment or to the impact of other factors that play a role in language development, such as communication opportunities or cognitive processing mechanisms, what Kohnert refers to as “means, opportunities, and motive (MOM).” In line with the DST perspective, Kohnert suggests that future studies of primary language impairment and bilingualism investigate the interaction among various factors at play in bilinguals with language impairment. Schmid’s article “L1 Attrition across the Lifespan” is a critical piece in establishing this perspective of language development across the lifespan. To Schmid, first language attrition generally follows from major life events such as emigration, and is a gradual process over the lifetime of the individual. Often relegated to a less prominent place in language acquisition, language attrition is thus situated along the continuum of language development across the lifespan.

Part III focuses on non-verbal aspects of language development, an area of study more typically pursued in communication studies. In “The Development of Gesture,” Tellier looks at gesture as one aspect of nonverbal communication and presents a concise review of the observed development sequence in gesture development in children, beginning with symbolic gestures used mostly without speech and followed by a period when the child begins to produce synchronized combinations of gestures, which is the beginning of gesture-speech integration in adult communication. Moreover, the onset of this type of speech-gesture combination showed a significant correlation with the onset of the two-word utterances stage of first language development. Tellier’s article provides a notable bridge between linguistics and communicative studies. While communication studies on gesture in nonverbal communication generally tend towards identifying and classifying different types of gestures and their function in communication, Tellier establishes the development of a gesture system of communication that is related to the development of speech in children. In “The Development of Sign Language,” Pichler presents a survey of interdisciplinary research on sign language, looking first at sign language as a first language in children and in adults and finally at language decline due to Parkinson’s disease. The findings thus far suggest that further research in the field of sign language acquisition may yield valuable insights into language development.

Part IV examines the methodological and neurolinguistic aspects of development. First, Schrauf addresses the need for more longitudinal studies in language development over the lifespan, particularly in the language development of bilinguals/multilinguals. Given the impact of lifespan psychology and cognitive aging on language development, Schrauf first summarizes and then evaluates the common longitudinal designs in those areas, including a review of threats to liability in longitudinal studies and a review of longitudinal studies of language development in monolinguals. This review of the literature underscores the need for further longitudinal studies to learn more about multilingualism as a dynamic system of language development and to develop theory-based research in this field. Kempler follows with a review of research in working memory in “The Role of Working Memory in Language Development over the Lifespan.” After an initial definition and overview of working memory and executive function, Kempler summarizes research that has investigated the mechanisms that can account for the increase or decline of working memory over the lifespan, including studies that have examined working memory in language processing. Among the key issues in working memory identified through past research relevant to language development is the question of whether working

memory capacity and function map onto individual differences in vocabulary acquisition, sentence processing and skilled reading. The results of the studies indicate individual differences in working memory capacity and age-related declines, suggesting that a lifespan approach to language development must include an investigation of these processes. Finally, Hernandez, Hiscock, and Bates explore how language processing in children relates to neural organization in adulthood, and conclude that significant reorganization does not occur in adulthood.

This compelling collection of articles presents an alternative lifespan approach to the study of language development that, to some, may seem unorthodox. A dynamic systems theory approach or a sociocultural approach to language development allows us to consider multiple variables in language development. Additionally, the research in primary language impairment and bilingualism, language attrition, and gesture development strongly suggests that language development is not limited to childhood, as is reflected in a biological-maturational approach to language development, but rather, that language development extends throughout adulthood, and is indeed a lifelong process. This important volume of articles on language development thus presents convincing evidence for a shift to a lifespan orientation to language acquisition. It also establishes a strong case for research models that account for the interconnected and interdependent multi-faceted systems at play at various stages of language development. For those of us applied linguists who have always felt that performance was as important as competence, we can breathe a sigh of relief and move on.

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