

## BOOK REVIEWS

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EDITH L. BAVIN (ed.), *The Cambridge handbook of child language*. Cambridge: Cambridge University Press, 2009. Pp. 608. ISBN 978-0-521-88337-5.

This handbook is designed for graduate students and postgraduate professionals interested in children's language acquisition, and the stated aim is to provide state-of-the-art summaries of the varied directions in which this field is going. The book's strengths are: (a) the inclusion of multiple chapters from a variety of theoretical perspectives; (b) the inclusion of a wide range of methodologies (neurological, on-line processing, elicited production and naturalistic production, comprehension, imitation, judgment tasks); and (c) the inclusion of a wide range of populations (bilinguals, children learning sign languages, plus multiple chapters concerning children with developmental disorders). One avenue for reviewing this sort of handbook is to summarize and critique each chapter; however, Bavin provides a good summary of each chapter in her introduction and a critique of each chapter on its own proved unwieldy. Thus, we decided to approach this review with the question 'How could others use this book in teaching?' One way, of course, would be to follow Bavin's organization, and, for example, read Chapters 10 and 11 during the section on Phonology, Chapters 12–15 during the section on Grammar, and Chapters 23–26 during the section on Special Populations. In this review, though, we offer some alternate modes of organization, which are borne of the connections we noticed across disparate chapters, and which highlight, we believe, some of the most exciting areas and directions of current research on language acquisition.

Mode 1 might be called 'the theoretical foci of language acquisition'. Within this book are multiple chapters that take the generativist/universal grammar perspective, the usage-based perspective, plus an up-and-coming perspective that places heavy emphasis on infants' ability to process linguistic stimuli very early in life (called here, Early Processing). Possibly serendipitously, there are several 'sets' of chapters that provide very different theoretical accounts of similar findings and/or developments; these have great potential to assist students in grappling directly with the differing perspectives. Mode 2 might be called 'intersecting domains of language acquisition'. Within this book are multiple chapters that rely heavily on cross-linguistic comparisons, that discuss the role of gesture in language acquisition and that address how children use (or have trouble with) language in discourse. Reading these chapters together provides a more comprehensive picture of each domain.

## THEORETICAL FOCI OF LANGUAGE ACQUISITION

*Generativist accounts*

Valian (Chapter 2, Innateness and learnability) provides an introduction to the GENERATIVIST perspective on language learning, which emphasizes the unique human ability to learn language and finds support in evidence stemming from linguistic universals, scenarios involving the poverty of stimulus and findings in which children demonstrate early competency and implicit knowledge of linguistic structure. Moreover, research with the bonobo Kanzi leads Valian to argue that providing another intelligent species with exposure to English did not yield grammatically regular English usage; hence, proficient learning abilities must be coupled with innate linguistic knowledge. Demuth (Chapter 11, The prosody of syllables, words and morphemes) provides further examples of the importance of underlying linguistic structure in children's language acquisition, reviewing how children engage in compensatory lengthening when omitting coda consonants, which suggests that they may have some word-minimality constraints. Moreover, young children first use grammatical morphemes that fit the prosodic (i.e. syllabic) rules of their own language. Furthermore, as Lust, Foley and Dye discuss (Chapter 14, The first language acquisition of complex sentences), children also have access to complex sentence structures early. Spontaneously produced coordination is demonstrated as early as MLU 2:36 (at age 2;9–2;10) and three-year-old children distinguish between grammatical and ungrammatical forms of a variety of complex structures, including adverbial clauses and relative clauses.

Ud Deen (Chapter 15, The morphosyntax interface) supports the generative approach by illustrating how children's acquisition of inflectional morphology manifests remarkably low errors-of-commission rates and highlighting how inflectional markers emerge developmentally in structurally constrained patterns. Bilingualism and the study of sign languages also provide unique circumstances with which to study language acquisition and examine the possibility of universal grammar. As Pearson discusses (Chapter 21, Children with two languages), the sheer amount of input children receive seems to be less important than age of acquisition in their ability to demonstrate proficiency in both languages. Similarly, children acquire two languages at much the same rates as their acquisition of just one. Pearson also highlights how bilinguals' language exerts effects on their cognition (i.e. in their meta-linguistic awareness and selective attention) rather than the other way around. Lillo-Martin (Chapter 22, Sign language acquisition studies) also describes evidence that sign languages are learned through the application of structural principles. For example, 'doubled' signs emerge developmentally in two different sign languages in concert with structurally similar constructions; moreover, developmental discontinuities

between prelinguistic gestures and linguistic signs suggest differences in the ways young children treat linguistic forms vs. communicative meanings.

### *Usage-based accounts*

Turning now to the USAGE-BASED THEORY of language acquisition, Tomasello (Chapter 5, The usage-based theory of language acquisition) provides a clear overview on how language learning may be accomplished solely through the use of two domain-general skills: intention-reading and pattern-finding. He lays out a stage-theory of language development (holophrases linked with intentions first, item-specific multiword phrases next and abstract structure last), and provides concrete examples of the steps that early learners take. If usage-based theories are valid, then children should become productive with language later rather than earlier. Behrens (Chapter 12, Grammatical categories) focuses on just this argument, outlining a series of studies that illustrate how children's productions of morphemes (e.g. past tense and plural markers) are initially tightly tied to specific usages from their input. In line with usage-based theories, Behrens describes how these productions encompass more and more variability with age.

Complementing these findings are data on children's acquisition of verb argument structure (Allen, Chapter 13, Verb argument structure), showing that children do not consistently produce all of the relevant arguments associated with a verb, in their language-specific orders, until ages 3;0–5;0. Moreover, Allen describes how children are more likely to use certain structures early if they are learning a language that makes more frequent use of them, highlighting the major role of input frequency. Furthermore, Clark's (Chapter 16, Lexical meaning) conception of lexical meaning crucially involves how words are USED. She illustrates how children use inference within conversations to understand the objects that words refer to and emphasizes that the usage of a given word in some correct contexts does not mean children have acquired all aspects of that word's meaning. Once again, practice and experience are required for children to learn a part of their language.

### *Early processing accounts*

The chapters we have grouped under the EARLY PROCESSING label discuss the plethora of recent methods and findings exploring the abilities of preverbal and barely verbal child language learners. Thiessen (Chapter 3, Statistical learning) covers how infants might learn the phonemic structures of their language via attention to conditional and/or distributional statistics, thus determining its variant vs. invariant components. Thiessen also discusses a variety of constraints on statistical learning, including phonotactic (some patterns seem easier than others), modality-related (some patterns are

more easily learned as auditory rather than visual) and experiential (earlier-acquired patterns influence the acquisition of later ones). Federici (Chapter 4, Neurocognition of language development) reviews findings from neurocognitive studies addressing diverse levels of language, and discusses both similarities and differences between infant and adult event-related potentials (ERPs). What stands out is the realization that infants must be processing their ambient language in ways increasingly like those of adults, frequently before they provide behavioral evidence for the same. Chapters 7 (Curtin & Hufnagle, Speech perception) and 8 (Höhle, Crosslinguistic perspectives on segmentation and categorization in early language acquisition) provide reviews of the behavioral evidence for early linguistic processing in infants between birth and 1;0–2;0. Curtin and Hufnagle track the increasingly complex phonetic, syllabic and lexical structures perceived in language-specific ways while Höhle reviews the evidence that infants use phonological cues and function morphemes to distinguish word types and create (proto-)syntactic categories. For example, preverbal infants learning a variety of languages use frequency to distinguish functors from open-class words, and German infants aged 1;3 use the distributional patterns of determiners to assign a new word to the category ‘noun’.

Early language processing findings can be extended into the preschool years. Snedeker (Chapter 18, Sentence processing) describes studies using the visual world paradigm with young children, and suggests that three- to five-year-olds are efficient processors of grammatical structure but less proficient than adults in integrating grammatical, pragmatic and prosodic information in real-time sentence processing. A final topic in this cluster about early processing covers the abilities of children with specific language impairment (SLI). Leonard (Chapter 24, Language symptoms and their possible sources in specific language impairment) promotes a processing explanation for SLI because the severity of the disorder’s manifestation in children seems linked with the irregularity of targeted grammatical systems (i.e. tense/agreement) across different languages. To the extent that irregularities pose a challenge, processing components such as working memory seem implicated.

### *Points and counterpoints*

As sketched above, each theoretical perspective is more fully elaborated when multiple chapters are read in combination. Some theoretical accounts can also be contrasted directly with respect to specific findings. For example, Valian’s (Chapter 2, Innateness and learnability) treatment of children’s knowledge of grammatical categories and language-specific word order, and Lust *et al.*’s (Chapter 14, Complex sentences) treatment of children’s knowledge of complement sentences and relative clauses

emphasize early demonstrations of abstract structures, leading these authors to conjectures of innate linguistic properties. In contrast, Tomasello's (Chapter 5, Usage-based theory) treatment of the same constructs holds that the convincing demonstrations appear later in development, after periods of item-specific usage, leading him to conjectures of cognitively based learning in context. Students can be encouraged to read these chapters together and compare the evidence adduced on each side. Similarly, Behrens (Chapter 12, Grammatical categories) discusses the development of inflectional markers according to the view that their omission indicates children's lack of knowledge; only usage in all of the relevant contexts counts as acquisition. In contrast, Demuth (Chapter 11, Prosody) highlights how some omissions actually do indicate linguistic knowledge, such that adhering to the prosodic structure of a word or phrase can result in segments or morphemes appearing to be 'missing' in children's output – but are really present in the child's underlying/intended linguistic message. Thus, omitted phonological or grammatical units can be viewed in multiple ways – a cautionary tale for students. Reading Chapters 7 (Curtin & Hufnagle, Speech perception) and 10 (Vihman, DePaolis and Keren-Portnoy, A dynamic systems approach to babbling and words) together yields first a dramatic recognition of the developmental lag between perception vs. production of speech, and second, the persistent question of WHY infants seem to grasp subtle sound-related distinctions and patterns long before they can produce them accurately. Yet Vihman *et al.*'s focus on a dynamic systems approach does not promote the simple conjecture that children need only get their articulatory apparatus in working order to manifest in speech what they already know – rather that the infant's own production drives the building of complexity in language. Any account of children's language acquisition grapples with the production/perception discrepancy, and these two chapters highlight how early this emerges in development. Finally, the two chapters that focus on SLI (Tomblin, Chapter 23, Children with specific language impairment; Leonard, Chapter 24, Language symptoms) highlight different possible causes for children's delayed acquisition of some aspects of language. Tomblin reviews recent breakthroughs in genetics that have implicated possibly language-targeted genes, whereas Leonard discusses possible effects of domain-general real-time processing challenges.

#### INTERSECTING DOMAINS OF LANGUAGE ACQUISITION

##### *Cross-linguistic comparisons*

Stoll (Chapter 6, Crosslinguistic approaches to language acquisition) argues persuasively for the necessity of cross-linguistic research, both as validation of findings initially demonstrated in one language and as illumination of how differences across languages impact theoretical positions. Stoll reviews

a plethora of cross-language comparisons, many of which demonstrate remarkably early differentiation of linguistic output, as well as pointers for how linguistic input can be used. Stoll's chapter includes pleas for rigorous and consistent methodologies across languages, as well as for the inclusion of languages both little studied and endangered. Höhle (Chapter 8, Segmentation and categorization) also reviews findings from numerous languages concerning when infants segment speech into linguistically relevant units and then categorize these units into syntactic categories. She discusses the challenges of comparing findings from different languages when the methods and stimuli vary; essentially, while general patterns of acquisition are clear, it becomes difficult to determine just which units infants are paying attention to.

Ud Deen (Chapter 15, Morphosyntactic interface) grapples with how cross-linguistic variability both supports and challenges generativist accounts. For example, evidence from a wide range of languages finds earlier and less erroneous acquisition of inflectional morphology from children learning languages with rich and regular systems compared to those learning languages that are morphologically irregular, demonstrating that complexity itself is no barrier to early acquisition. However, Ud Deen also provides examples where cross-language variability in age or difficulty of acquisition is theoretically unexpected, and points to the incorporation of extra-syntactic factors as the cause. In a targeted comparison of English, Japanese and Chinese, Crain (Chapter 17, Sentence scope) discusses the ways logical operators (*not*, *and*, *or*) affect children's and adults' interpretation of sentences. Learners of all three languages initially interpret negated disjunction as licensing conjunctive entailments (e.g. *The girl will not eat juice or cookies* entails *The girl will not eat juice and the girl will not eat cookies*), which Japanese and Chinese children must then 'overcome' because their languages only allow conjunctive entailments in restricted constructions. Crain thus argues for a universal concept which is then modified by specific input. Via these chapters, then, cross-linguistic research provides evidence for both language universality and language specifics in the process of language acquisition.

### *Gesture*

Goldin-Meadow (Chapter 9, From gesture to word) provides an overview of how the role of manual gestures changes with children's increasing communicative abilities. Developmentally, manual gestures both precede and predict early word and sentence production in hearing children; moreover, deaf children without a language model invent a complex gestural system to communicate with their families and communities. Thus, gesture frequently captures aspects of meaning and communication not (yet)

adequately served by speech. This is also illustrated by Richardson and Thomas (Chapter 26, Language development in genetic disorders), who review how children with Down syndrome demonstrate their developing conceptual knowledge through prolonged and extensive use of gestures. A related but different point is made by Tomasello (Chapter 5, Usage-based theory), who describes prelinguistic gestures, such as pointing, as the earliest forms of intentional communication, which are necessary precursors towards linguistic conventions. Thus, gestures produced by infants in joint attentional frames serve to designate intended meanings. The reversal of this pattern (words before pointing) in children with Williams syndrome (Richardson and Thomas, Chapter 26, Children with SLI) may signal their atypical use and acquisition of language. And as Clark discusses (Chapter 16, Lexical meaning), these gestures produced by caregivers within the same contexts are proposed as the direct offers of new words.

### *Discourse*

Becker Bryant (Chapter 19, Pragmatic development) discusses how children develop an understanding of – and the ability to use – context when in conversation with others. This capacity begins its development in infancy with turn-taking, but lasts through adolescence as children need to acquire skills like initiating and sustaining coherent conversation using a whole variety of devices (repetition, anaphora or ellipsis, connectives). The chapter also highlights the influence of caregivers, who provide consistent feedback – albeit indirectly – on many aspects of children’s pragmatic behavior. However, mastery of conversational skills is not necessary for children to learn about language within discourse contexts. As Clark illustrates in Chapter 16 (Lexical meaning), children acquire particular words through inference when responding to adults’ requests. Repetition of specific words by both adult and child, in turn, further establishes specific aspects of a word’s meaning. Moreover, the elaborations that adults provide within such ‘conversational co-presence’ serve to place a given word in its semantic domain, provide details about that domain and build connections across domains (e.g. *That’s a bird. It’s called an owl. It says ‘hoo’.*). Discourse also reveals aspects of children’s acquisition of argument structure (Allen, Chapter 13, Argument structure), due to the fact that their use (or omission) of the noun phrases called for by a given verb is not random. For example, pronouns and nominal omissions occur more when referents are accessible within the discourse contexts in both child and caregiver speech. Moreover, children’s ability to use specific constructions such as passives and datives is constrained by discourse properties of the task (e.g. highlighting goals elicits more double object datives) and discourse properties of the input (e.g. a focus on patients elicits more passives). The specific

discourse context of the narrative (Berman, Chapter 20, Language development in narrative contexts) also illustrates the developmental course – which she argues, is quite lengthy – of the varied uses of the past tense, coordination (e.g. *and* is initially used to connect all sorts of discourse units; with development, its use becomes appropriately restricted) and reference. Berman argues that a linguistic form cannot be considered to be mastered until it is used appropriately in all of its relevant discourse contexts, and illustrates how the demands of narrative structure facilitate, yet also challenge, children's progression towards such mastery. Finally, Luyster and Lord (Chapter 25, The language of children with autism) discuss children for whom pragmatics and discourse is a major challenge; namely, those diagnosed with autism spectrum disorders (ASD). This chapter brings to the fore how ASD children's difficulties with social interactions and perspective-taking can affect both their understanding and expression of speech, leading to delays and/or impairments in lexical, grammatical and pragmatic aspects of language. Via these chapters, discourse can be seen as a medium, an indicator and an end state of language development.

Space constraints prevent us from discussing additional clusters (including a neurobiological one; e.g. Chapters 4, 23, 26). Suffice it to say that, overall, this book meets its stated aim to provide summaries of current work on a variety of language development topics. However, one area for which students may need to look elsewhere is a comprehensive exploration of the constraints on early word learning. Moreover, in isolation, several of these chapters give a one-sided theoretical or methodological view of a subtopic. Organized into a syllabus, though, where chapters are read and contrasted with one another, this handbook gives a thorough picture of the theoretical debates, findings and methodologies of the field of language acquisition.

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