

of clitic phenomena, endoclitics are attested in Udi. The fact that these morphemes are sometimes positioned with respect to the morphemic structure of verb stems poses a serious challenge to theoretical frameworks that incorporate the lexicalist hypothesis and thus deny syntactic processes such as clitic placement access to the internal structure of words.

REFERENCES

- KLAVANS, JUDITH L. 1985. The independence of syntax and phonology in cliticization. *Language* 61.95–120.
 SCALISE, SERGIO. 1984. *Generative morphology*. Dordrecht: Foris.
 ZWICKY, ARNOLD M., and GEOFFREY K. PULLUM. 1983. Cliticization vs. inflection: English *n't*. *Language* 59.502–13.

Indiana University
 Student Building 130
 701 E. Kirkwood Ave.
 Bloomington, IN 47405
 [plesourd@indiana.edu]
 [pkroeber@indiana.edu]

First language acquisition: The essential readings. Ed. by BARBARA C. LUST and CLAIRE FOLEY. Oxford: Blackwell, 2004. Pp. 442. ISBN 0631232559. \$40.

Reviewed by SUSAN GOLDIN-MEADOW, *University of Chicago*

First language acquisition: The essential readings is a gift to the language acquisition community. The book contains twenty-nine of the most widely read and cited papers exploring how children learn language—papers you always wanted your students to read but were afraid to assign (because students like to read self-contained books rather than selections of articles). It is difficult to teach language acquisition from a textbook—students need to see and think about real live data to get a feel for the complexity of the problem that faces the child (and the researcher). Students need primary sources and this book supplies some of the very best. Indeed, one of the criteria that the editors imposed on their selections for the book was that the papers be data-rich with examples from observations of children if at all possible. A second criterion was that the papers be classics, works that launched the field and influenced its direction. To achieve this goal, the editors chose papers that were published before the late 1980s (a few were published as long ago as the 1950s) and that continue to be cited today. In addition, the editors chose papers with a linguistic focus—attention to form, meaning, and the mapping between the two. When introducing students to a field, there is always a tension between assigning classic papers and assigning papers at the cutting edge. The beauty of the classics that Lust and Foley have chosen is that these papers really did set the stage for modern-day research and thus provide an excellent introduction to, and framework for, the current literature.

The readings are organized into three parts that are nicely explicated and motivated in an introduction by the editors. Part 1, ‘Theory of language acquisition’, begins with a selection from NOAM CHOMSKY’s *Knowledge of language*, followed by Chomsky’s legendary review of B. F. Skinner’s *Verbal behavior*. These papers do a good job of laying out the problem that faces the language-learning child and pointing out that learning theories of the day were not able to explain how children solve the problem. Two additional papers included in later parts of the book also make this point (and really belong in Part 1). K. S. LASHLEY’s classic paper on the serial order of behavior (found in Part 3) makes a Chomskyan argument at the physiological level: sequences of action cannot be explained in terms of successions of external stimuli and require a more complex, hierarchical neural organization. JAMES L. GOULD and PETER MARLER’s paper, ‘Learning by instinct’ (in Part 2), also challenges behaviorism and presents phenomena from the birds and the bees that illustrate a variety of ways in which organism and environment can interact to create communication.

In addition to contrasting the Chomskyan position with Skinner's behaviorist approach, the book also contrasts Chomsky's position with Jean Piaget's cognitive approach to language learning through papers written by PIAGET and BÄRBEL INHELDER, and HERMINE SINCLAIR, and through selections from the debates between Piaget and Chomsky (edited by MASSIMO PIATTELLI-PALMARINI). Although I am, in general, a fan of Piaget's, I found these selections to be less rewarding. What is most striking about the debates is the lack of common ground between Piaget and Chomsky. Piaget takes on faith that the development of general cognitive structures can account for linguistic structures and does not illustrate the point with substantive examples. Although Sinclair (1967) has explored parallels between particular linguistic structures and Piagetian cognitive structures, these findings are published only in French and thus are not reprinted in the book. In the absence of concrete examples from Sinclair's work, the debate has a vacuous, at-cross-purposes, feel.

Part 2, 'The nature-nurture controversies', should have had a more encompassing title like 'Explorations of mechanisms of learning'. Half of the papers in this section focus on the biological foundations of language learning, and half focus on the role that linguistic input plays in language learning. A selection from ERIC H. LENNEBERG's ground-breaking book *Biological foundations of language* introduces the possibility that the onset of language is a maturational process, and papers by NORMAN GESCHWIND and by MICHAEL S. GAZZANIGA explore how the functions of language are organized in the brain (Gazzaniga's paper on split-brain individuals is only two pages long and may be too brief to be useful to someone who doesn't know the phenomenon to begin with). The biological section is nicely complemented by a paper from SUSAN CURTISS, VICTORIA FROMKIN, STEPHEN KRASHEN, DAVID RIGLER, and MARILYN RIGLER describing a child isolated from linguistic input for the first thirteen years of her life; although language learning can proceed beyond the 'critical period' it may involve entirely different learning processes and parts of the brain. How linguistic input is processed depends, at least in part, on the learner's biological state.

The papers on linguistic input begin, as they should, with ROGER BROWN and CAMILLE HANLON's often-cited paper on derivational complexity and order of acquisition. This paper starts with the fact that English-learning children acquire a set of constructions in roughly the same order—the question is why. Perhaps it is the nature of the material to be learned that determines the order, the frequency with which adults use the constructions, or the way adults respond to children's early productions of the constructions. Brown and Hanlon's paper laid the groundwork for much of the subsequent research on how children interact with their environments to learn language. CHARLES A. FERGUSON's paper describes how parents across the globe actually talk to their children and demonstrates that the talk children hear is different from the talk adults hear. Does this specialized talk have an impact on language learning? DAN I. SLOBIN's paper on cognitive prerequisites addresses this question by describing ways in which children might be 'operating' on the sentences they hear, turning input into uptake. But a paper exploring whether the variations in the talk children hear affects the rate at which children learn language (e.g. Newport et al. 1977) would have rounded out Part 2. There is also a one-paragraph selection by Sinclair suggesting that linguistic structures are a 'symptom' of general universal cognitive structures. This reference is meant to address the role of cognition in language learning but really is too brief to be useful to someone who doesn't already know Sinclair's work quite well.

The final papers in Part 2 introduce two learning mechanisms. In his papers on semantic bootstrapping, STEVEN PINKER suggests that children use semantic notions to figure out the category membership of an unknown word; for example, a word used to refer to an object (a semantic entity) is assumed to be a noun (a grammatical entity). Such a procedure works because parents do not use the full range of noun meanings when they talk to children (they rarely use nouns like *freedom* or *uncertainty* with their children). Although not disputing that children can learn the meanings of words from context, BARBARA LANDAU and LILA R. GLEITMAN argue that, for many words (verbs in particular), the word-world pairing is too complex for the learner to zero in on a particular meaning. The selection from Landau and Gleitman's book beautifully illustrates this point. However, Landau and Gleitman want to press this argument further and

claim that the syntactic constructions in which a verb appears can help narrow down the set of possible meanings for the verb; that is, they argue that children learn by SYNTACTIC as well as semantic bootstrapping. This is a powerful argument, and additional pages from the Landau and Gleitman book are needed to make this important point.

Part 3, 'Areas of language knowledge', presents the data—how children learn the sounds, words, and sentences of their language. This part begins with papers on the acquisition of phonology, but it really ought to begin with Roger Brown's paper, 'The study of Adam, Eve, and Sarah'. Brown's paper lays out how it's done and, in fact, sets the stage for subsequent studies of language learning. In general, the selections in this part are excellent. To illustrate the child's knowledge of sounds, the editors chose papers on speech perception (in particular, categorical perception) by PETER D. EIMAS, EINAR R. SIQUELAND, PETER JUSCZYK, and JAMES VIGORITO on phonology by ROMAN JAKOBSON and by N. V. SMITH; and on phonetics by DAVID STAMPE. To illustrate the child's knowledge of morphology, the editors chose JEAN BERKO's paper describing the first experimental probe of morphology (the famous *wug* test) and a selection from Brown's book *A first language* describing the strikingly similar order in which English-learning children acquire fourteen morphemes. To illustrate the child's knowledge of syntax, the editors chose a selection from LOIS BLOOM's book *Form and function in emerging grammar* which describes the grounds upon which rich structural descriptions can be attributed to the child, and a paper by E. S. KLIMA and URSULA BELLUGI which describes the stages English-learning children go through in their acquisition of negative and question constructions. Finally, there are two papers by EVE V. CLARK, one describing how children create new words (including a convincing argument that they use rules rather than analogies as the basis for these innovations) and one on children's strategies for communicating, the sole example of pragmatics. The pragmatics section is thin and perhaps could be supplemented by selections from Bates 1976.

So what's missing? There are several papers not found in these readings that introduce issues seminal to the field and that might therefore be candidates for the next edition. For example, a classic paper by Maratsos and Chalkley (1980) exploring distributional learning in children (the view that children learn the grammatical categories and constructions of their language by keeping track of patterns in their input) sowed the seeds of what is now a burgeoning area of research focusing on statistical learning. As another example, Bowerman (1973) asked whether children's early representations are better described in syntactic or semantic terms, an issue that continues to challenge researchers today and that bears on the type of mechanism needed to explain language development.

A central concern in language-learning research is to determine which skills children themselves bring to the process and which must be developed in the context of linguistic input. Experimental psychologists typically manipulate inputs and learners in an attempt to discover how the two interact. Another approach, which could be further developed in the next edition, is to take advantage of extreme variations in language input and learners that already exist in the real world (Gleitman & Newport 1995 provides an excellent review of this general strategy). Take, for example, crosslinguistic variation. Languages vary across the globe and thus present different learning problems to children exposed to those languages. Does it matter? Selections from Slobin's (1985) introduction to what has become a five-volume series on language learning across cultures would be a nice addition to this book. Another type of variation is cross-modality. Children who learn language by hand and eye rather than mouth and ear (i.e. a sign language rather than a spoken language) might exploit different learning processes. But they don't—and selections from Newport & Meier 1985 could be added to make this point. Along these lines, the fact that signers who suffer brain damage to the left hemisphere experience aphasia but those who suffer damage to the right hemisphere do not (Bellugi et al. 1989) also points to the resilience of language. Such a reading would, in addition, complement the Geschwind selection on aphasia in speakers. As a final illustration of how we can take advantage of the natural variation that exists in learners and learning environments, deaf children, whose hearing losses are so severe that they cannot learn to speak and whose hearing parents have not exposed them to sign, lack input from a conventional language. These children nevertheless invent gesture systems that

have many of the structural properties and functions found in early child language, including the process of reduction illustrated in the Bloom reading (Feldman et al. 1978). Including references of this sort in future editions would flesh out this line of investigation.

This volume is intended for established scholars and beginning students. Scholars will have already read these papers, but it is convenient to have them located in one place. The book will be most useful for students who are entering the field of language learning. In this regard, this book is true to its title—it really is the essential book of readings in first-language acquisition and an ideal way to launch students in the study of how children learn language.

REFERENCES

- BATES, ELIZABETH. 1976. *Language and context: The acquisition of pragmatics*. New York: Academic Press.
- BELLUGI, URSULA; HOWARD POIZNER; and EDWARD KLIMA. 1989. Language, modality, and the brain. *Trends in Neuroscience* 10.380–88.
- BOWERMAN, MELISSA. 1973. *Early syntactic development: A cross-linguistic study with special reference to Finnish*. Cambridge: Cambridge University Press.
- FELDMAN, HEIDI; SUSAN GOLDIN-MEADOW; and LILA R. GLEITMAN. 1978. Beyond Herodotus: The creation of a language by linguistically deprived deaf children. *Action, symbol, and gesture: The emergence of language*, ed. by Andrew Lock, 351–413. New York: Academic Press.
- GLEITMAN, LILA R., and ELISSA L. NEWPORT. 1995. The invention of language by children: Environmental and biological influences on the acquisition of language. *An invitation to cognitive science, vol. 1: Language*, ed. by Lila R. Gleitman and Mark Liberman, 1–24. Cambridge, MA: MIT Press.
- MARATSOS, MICHAEL, and MARY ANNE CHALKLEY. 1980. The internal language of children's syntax: The ontogenesis and representation of syntactic categories. *Children's language, vol. 2*, ed. by Keith E. Nelson, 127–214. New York: Gardner Press.
- NEWPORT, ELISSA L.; HENRY GLEITMAN; and LILA R. GLEITMAN. 1977. Mother, I'd rather do it myself: Some effects and non-effects of maternal speech style. *Talking to children: Language input and acquisition*, ed. by Catherine E. Snow and Charles A. Ferguson, 109–49. Cambridge: Cambridge University Press.
- NEWPORT, ELISSA L., and RICHARD P. MEIER. 1985. The acquisition of American Sign Language. *The cross-linguistic study of language acquisition, vol. 1: The data*, ed. by Daniel I. Slobin, 881–938. Hillsdale, NJ: Erlbaum.
- SINCLAIR-DE ZWART, HERMINE. 1967. *Acquisition du langage de développement de la pensée: Sous-systèmes linguistiques et opérations concrètes*. Paris: Dunod.
- SLOBIN, DAN I. 1985. Introduction: Why study acquisition crosslinguistically? *The cross-linguistic study of language acquisition, vol. 1*, ed. by Dan Isaac Slobin, 3–24. Hillsdale, NJ: Erlbaum.

University of Chicago
5730 S. Woodlawn Ave.
Chicago, IL 60637
[sgm@uchicago.edu]

Using corpora to explore linguistic variation. Ed. by RANDI REPPEN, SUSAN M. FITZMAURICE, and DOUGLAS BIBER. (Studies in corpus linguistics 9.) Amsterdam: John Benjamins, 2002. Pp. xii, 274. ISBN 1588112837. \$126 (Hb).

Reviewed by MERJA KYTÖ, *Uppsala University*

Among the increasing number of books dedicated to the study of linguistic variation and aspects of language use, this volume stands out. It offers a well-balanced selection of corpus-based studies that cover a broad range of linguistic features, registers, and dialects (or varieties) of English, but also includes one study in which the target language is Russian. In the editors' words, 'adequate descriptions of variation and use must be based on empirical analyses of natural texts' and 'on multiple texts collected from many speakers'. Moreover, these descriptions 'must simultaneously consider the influence of a range of contextual factors on linguistic variability' (vii). The studies included in the volume are carried out with these methodological aims in mind.