

Review: Linguistics at the Beginning of the 21st Century

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REVIEW ARTICLE

**Linguistics at the beginning of the 21st century**

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**Mark Aronoff & Janie Rees-Miller (eds.)**, *The handbook of linguistics* (Blackwell Handbooks in Linguistics). Malden, MA & Oxford: Blackwell Publishers, 2001. Pp. xvi + 824.

I. INTRODUCTION

This book is the ninth in a series of handbooks that ‘when complete, will offer a comprehensive survey of linguistics as a whole’ (ii).<sup>1</sup> This book, which by itself surveys the entire field, thus encapsulates the entire series of which it is part. Unlike the other handbooks in the series, its intended audience is people ‘with no prior knowledge of linguistics’, henceforth ‘nonlinguists’. Specifically it is designed to inform nonlinguists about what linguists ‘have uncovered ... about human language and how it is acquired and used’ (xiii–xiv). In addition, as Stephen R. Anderson’s dust-jacket promotional suggests, it can be used to establish lines of communication between linguists and researchers in other fields whose interests intersect with those of linguists, and also among linguists whose views on fundamental issues diverge.

Though called a handbook, this book will take up a lot of room in your backpack. It contains 32 chapters, the first 25 of which average a little over 25 pages in length, and the last 7 (on topics in applied linguistics) about 12½ pages; a nearly 60-page bibliography; and a 48-page index.

This review article is organized as follows. In the next section, I make some general remarks about the book as a whole, pointing out some of its overall strengths and weaknesses. Following that, I discuss each chapter separately, the chapter number, title, author(s) and page range constituting subsection headings. Next I provide an overall evaluation of the book’s coverage. Finally I give my own assessment of the current state of linguistics as the ‘scientific study of language’ (xiv).

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[1] Some of the editors of previously published handbooks in the series wrote chapters of this book, namely Brian MacWhinney, Shalom Lappin, Florian Coulmas, John Laver and Andrew Spencer.

## 2. GENERAL REMARKS

This book is truly comprehensive, treating not only the familiar subfields of linguistics but several less familiar ones as well, such as forensic linguistics and translation. The subfields of linguistics that have been left out include adult experimental and theoretical psycholinguistics,<sup>2</sup> speech synthesis and recognition, acoustic and auditory phonetics, dialectology (including the study of variation), pidgins and creoles, stochastic methods, and mathematical linguistics (formal theory of grammar). It also provides a wide variety of points of view regarding how linguistics should be practiced, including both formalist and functionalist perspectives.

Thanks in no small part to the editors' efforts, much of the material in this book is accessible to nonlinguists who are willing to work at trying to understand what they are reading. Chapters 1, 6, 10, 20 and 22 in particular are very well written and easy to follow. Chapters that nonlinguists will find difficult are noted in the next section.

Except in chapters 1, 4, 12, 13 and 23, the discussion centers on substantive rather than theoretical issues. Almost every well-known linguistic theory, past and present, is mentioned somewhere in this volume, but one should look elsewhere for systematic discussion and evaluation of most of those theories.

Since the book is written in English, the analysis of English structure and use predominates, and in chapters 10, 15, 16, 17, 23, 24, 27, 28, 29 and 30, English is the only language analyzed or illustrated.

There is some cross-referencing between chapters in this book, but not nearly as much as I would have liked. The relative lack of cross-referencing results in a certain amount of unnecessary repetition, such as:

- Chapters 4 and 5 describe Grimm's and Verner's Laws to illustrate the notion of regularity of sound change.<sup>3</sup> Both chapters also touch on the effect of language contact, chapter 4 discussing it in connection with the 'wave theory' of language change, and chapter 5 with 'areal phenomena'.
- Chapters 4, 12 and 23 discuss the centrality of language acquisition for generative grammar.
- Chapters 4, 19 and 23 mention or discuss linguistic relativism, chapter 4 calling it the 'Whorf hypothesis' and chapter 23 the 'linguistic relativity hypothesis'.
- Chapter 5 repeats some of the information in chapter 2 about language family membership.

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[2] However, language production and comprehension are touched on in chapter 24, and a theory of sentence processing is proposed at the end of chapter 16.

[3] Chapter 4 also describes Grassmann's Law, and chapter 5 a discovery by Lottner, published in 1862. One complete account would have been better than two overlapping partial ones.

- Chapters 9 and 10 each devotes a section to the lexeme.
- Chapters 11 and 12 give toy context-free phrase-structure grammars for recursively generating sentences in English and provide similar motivations for transformations.<sup>4</sup>
- Chapters 20 and 21 each devotes a section to codeswitching.<sup>5</sup>
- Chapters 27 and 28 discuss the phonics vs. whole language controversy in the teaching of reading.

Chapters 6 and 8 mention the International Phonetic Alphabet (IPA) and use its symbols, but neither points out that the IPA chart appears on page 179, at the end of chapter 7. Elsewhere, various approximations to the IPA standard are used.

The book could have used more graphics, especially maps accompanying chapters 2 and 32, and better layout of the charts in chapter 3.<sup>6</sup> Tree diagrams are used throughout the book for various purposes. An explanation about how to read tree diagrams (and other structural diagrams such as those for feature structures in chapter 12) would have been helpful.

### 3. DISCUSSION OF INDIVIDUAL CHAPTERS

#### 1. *Origins of language*, by Andrew Carstairs-McCarthy, 1–18

This chapter is wonderfully free of the kind of speculative argumentation found in many discussions of evolutionary psychology. Carstairs-McCarthy begins with an explanation for linguists' long-standing reluctance to consider the question of the origin of language. He then discusses in turn the evidence from anthropology, archaeology, genetics, the study of primates, neurobiology, and finally linguistics itself, including Bickerton's protolanguage hypothesis.

#### 2. *Languages of the world*, by Bernard Comrie, 19–42

This chapter summarizes the distribution of the languages of the world and their genetic relations. Overall, Comrie does an outstanding job of distinguishing what is known about language classification from what is speculative.

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[4] Chapter 25 also contains a toy context-free grammar for a fragment of English.

[5] Both chapters also mention the relative proportion of monolinguals to multilinguals in the world; chapter 21 provides more details.

[6] Part of the difficulty of reading this chapter is that the charts (mostly consisting of characters from various writing systems; sometimes several systems are combined in one chart) interrupt the flow of the text, and it is not always clear how the charts illustrate the points made in the text.

3. *Writing systems, by Peter T. Daniels, 43–80*

This chapter provides both a ‘historical-descriptive survey of the world’s writing systems’ and the ‘elements of a theory of writing’ (43). Daniels’ survey can be faulted for including too much detail (particularly in the charts) to be readily followed by trained linguists, much less nonlinguists.

Daniels makes one of his main theoretical points on the first page of his essay: ‘there can be no purely logographic script’. The most ancient type of script is not logographic, but logosyllabic (or morphosyllabic), in which ‘each character stands for a morpheme, and the characters can be used for the sound of the morpheme as well as for its meaning’. Next comes the syllabary; then the abjad, in which each symbol stands for a consonant; then the alphabet; then the abugida, in which each symbol represents a consonant followed by a particular vowel; and finally the featural script, ‘in which the shapes of the characters correlate with phonetic features of the segments they designate’ (43–44).<sup>7</sup>

Daniels further argues that the development of writing systems can be explained in part by considering the syllable as more apparent to naïve speakers than the phonological segments it contains, what Daniels calls ‘the primacy of the syllable’ (68).<sup>8</sup> Consequently, the creation of the abjad must be considered the first true invention in the history of writing, because it required recognizing that syllable-onsets can be identified with syllable-codas, ‘and the resulting unities [consonants] could be represented by a single symbol wherever in a word they occurred’ (69).

4. *The history of linguistics, by Lyle Campbell, 81–104*

Campbell divides the history of linguistics into seven overlapping intellectual strands, starting with the grammatical traditions that arose in many cultures over the past two to three millennia, in response to language change and the need to preserve knowledge of older forms of the language. He describes seven traditions of the Middle East, India and the Mediterranean, but does not mention those of China, Japan and Ceylon.

Campbell goes on to describe the tradition of universal or speculative grammar that arose in Europe in the Middle Ages; the comparative method beginning in the 16th century in Europe that was in part stimulated by the discovery of languages from around the world, following it through to the

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[7] The system designed by the Western Apache spiritual leader Silas John, described in Basso 1989, is different from all of these, but since it does not provide a way of writing the language as a whole, it is not a writing system *per se*.

[8] Daniels does not cite any experimental evidence for the primacy of the syllable, only the historical fact that all the recent spontaneously created writing systems are syllabaries. An observation in chapter 28 (672), however, suggests the possibility of experimental support for Daniels’ claim.

contributions of the Neogrammarians;<sup>9</sup> various philosophical-psychological-typological-evolutionary lines of thought beginning with the work of von Humboldt and Herder; the structuralism of Saussure, Baudouin de Courtenay, Boas, and their successors; Chomsky's generative grammar; and modern functional-typological approaches.<sup>10</sup>

5. *Historical linguistics, by Brian D. Joseph, 105–129*

After a brief introduction in which Joseph shows that languages do, in fact, change, Joseph introduces five problems that, according to Weinreich et al. 1968, 'a theory of language change must solve' (108). This is pretty heavy going for nonlinguists, but apart from the section in which these five problems (and one other) are discussed, he does not discuss them further, except tangentially.

Joseph appears to be of two minds regarding the regularity of language change. On the one hand, he vigorously attacks the idea that language change can be described as a change in rule (or constraint) systems, pointing out the myriad of changes that are highly restricted and idiosyncratic (116–117). On the other hand, he states that the Neogrammarian demonstrations of the regularity of sound change 'have generally withstood the test of time' (125).

Finally, Joseph overstates the role of the 'blocking effect', described as a fixed expression in a language preventing the creation of synonymous expressions (119). While the blocking effect may explain why the existence of irregular forms in a language tends to prevent the creation and spread of regular ones, the existence of the word *yesterday* in English does not render the synonymous phrase *the day before today* ungrammatical, as Joseph appears to claim (120). If that were so, the definitional sentence *yesterday is the day before today* would be ungrammatical, which it surely is not.

6. *Field linguistics, by Pamela Munro, 130–149*

This chapter is full of wonderful anecdotes and good advice about how to do linguistic fieldwork, and why. Many pitfalls are described, such as refusing to believe that a language can be as complicated as it is, together with methods to avoid them. Munro also emphasizes the field linguist's 'duty to publish (or otherwise make available) as much of his or her analysis of the language as possible' (144–145), including material that can be used by the communities that speak (or wish to revive) the language. Finally, she points out the enduring value of good linguistic description:

[9] Campbell very effectively debunks the myth that Sir William Jones is the father of the comparative method.

[10] I discuss generative grammar and functional-typological approaches below in connection with chapters 12 and 13.

[T]he linguistics books that are still being borrowed [from libraries] 30 or 50 years after they were written are basic descriptions, not theoretical tomes (148).

7. *Linguistic phonetics*, by John Laver, 150–179

This chapter provides a comprehensive treatment of articulatory phonetics, with judiciously chosen references to the literature for more information about particular topics. Laver makes brief but limited forays into phonology, as when he defends his decision not to treat the syllable as a unit of phonetic analysis (159).

8. *Phonology*, by Abigail Cohn, 180–212

Cohn combines two familiar textbook examples in her introductory section, the English regular plural alternation, and the distinction between accidental and systematic phonotactic gaps, to motivate phonological analysis. Cohn departs from textbook tradition by treating suprasegmental structure before subsegmental structure. However, 10 pages are devoted to the syllable, but only one to the foot and prosodic word.<sup>11</sup>

Cohn introduces Optimality Theory in her discussion of syllable structure, and Autosegmental Phonology in connection with (sub)segmental alternations. This gives the false impression that those theories are appropriate in their respective domains, and need not be compared.

9. *Morphology*, by Andrew Spencer, 213–237

This chapter introduces all the familiar apparatus of morphology except for clitics. I suspect this is an oversight rather than tacit agreement with Everett (1996). Without the notion of clitic, the English possessive affix *-s* counts as a word, according to Spencer's test (213), since it can be separated from the word with which it is grammatically associated by other words or phrases, as in the textbook example *the king of England's crown*.<sup>12</sup>

Throughout, Spencer argues for eliminating the role that the morpheme plays in morphology. The morpheme, along with the phoneme and immediate constituent, was one of the central theoretical constructs of structuralist linguistics, but whereas the structuralist phoneme was redefined to find a place in generative phonology (chapter 8: 186), and the notion of

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[11] Chapter 18 devotes a section to the metrical foot, but uses a different notation from chapter 8 (involving 'strong', 'weak', 'heavy' and 'light' syllables). If nonlinguists take the trouble to compare their notations, they will almost certainly get confused.

[12] Not having a definition of clitic means that the term 'clitic group' in chapter 18 will not be intelligible to nonlinguists.

immediate constituent was replaced by phrase structure, the morpheme retained its structuralist definition as 'the smallest meaningful component of a word' (214). Spencer points out that the minimal unit of morphological analysis need not be meaningful; it may be a 'bare morphophonological shape' (216), such as the *cran* part of *cranberry* and both the *under* and *stand* parts of *understand*, and many affixes. He concludes that the morpheme concept should be scrapped in favor of other concepts such as lexeme (or base), word, and 'rule functions' (229–230).<sup>13</sup>

Another approach is to redefine the morpheme, retaining the notion of minimal unit, but eliminating the requirement that it be meaningful. Such a redefinition is given by Crystal (1991: 283), as 'the minimal distinctive unit of grammar'.<sup>14</sup> As far as I can tell, this redefinition solves all of the problems that Spencer raises against the structuralist morpheme, except possibly the case of 'subtractive' morphology (225–226).

10. *The lexicon*, by D. A. Cruse, 238–264

Cruse provides a very compelling account of possible word meaning, in the course of which he admits that some notions are more easily understood by example than by careful definition. The same goes for his discussion of sense relations, but it is limited almost exclusively to relations among adjectives in English.

11. *Syntax*, by Mark C. Baker, 265–294

After working through a basic description of context-free and transformational rules, Baker motivates the need for constraints in syntax.<sup>15</sup> The highlight of the chapter is its last 15 pages (279–294), in which certain syntactic properties of English, Edo (a language of Nigeria) and Mohawk (a language of Quebec and New York) are compared and their common properties revealed in the face of significant 'surface' differences (in particular between Mohawk on the one hand and English and Edo on the other). The analysis of Mohawk, however, owes a great deal to Jelinek's 1984 notion of pronominal argument structure, but without acknowledgment of that source.

[13] Spencer treats feature-value underspecification as something exotic: 'An alternative would be to invent some notation meaning "any value of the feature NUMBER"' (228). However, feature-value "underspecification" is widely exploited in generative grammar' (chapter 12: 304).

[14] Crystal (p. c.) credits Peter H. Matthews and Frank R. Palmer for help in formulating his definition.

[15] Baker's discussion of binding (272–273) does not distinguish between binding and coreference (Fiengo & May 1994), and so can confuse astute nonlinguists who note the possibility of coreference in his examples.

12. *Generative grammar*, by Thomas Wasow, 295–318

The introduction to this chapter tries to disabuse nonlinguists of the notion that a grammar is a set of normative prescriptions for how to speak or write a language. The rest of the chapter is an elaboration of the treatment of generative grammar in chapter 4, focusing on syntax. Wasow first discusses the evolution of the notion ‘generative’;<sup>16</sup> then lists various ‘tenets’ of generative grammar, varieties of generative mechanisms, and various phenomena commonly studied in generative grammar; and finally contrasts transformational with nontransformational theories.

13. *Functional linguistics*, by Robert D. Van Valin, Jr., 319–336

Van Valin believes that one part of the gap between nonlinguists and linguists should be closed in the direction of nonlinguists’ ‘commonsense’ beliefs about language, specifically that language is ‘used for communication’, rather than ‘a system for the free expression of thought, essentially independent ... of instrumental purpose [such as communication]’ (319; the second quotation is from Chomsky 1980: 239). I suspect, though, that the answer you get depends on how you frame the question. If you ask ‘What is language for?’ I would certainly expect an answer like ‘communication’,<sup>17</sup> but if you ask ‘What is language?’, responses will probably vary widely, with a substantial number of respondents agreeing with Chomsky. But the matter should not be settled by surveys of what view of language nonlinguists think linguists should adopt, but rather by the quality of the results one obtains by taking one or another position.

Functional linguistics considers the communicative function of language as central to its concerns, but does not attempt to explain communicative ability itself. On the other hand, two formalist contributors to this volume do make that attempt; see discussion of chapters 15 and 16 below.

Van Valin, following Nichols 1984, provides a useful classification of functionalist theories, maintaining that the real opposition in the field is between ‘extreme functionalism’, which ‘rejects the validity of any notion of structure other than ... discourse structure’ (331), and everything else.

14. *Typology*, by William Croft, 337–368

This chapter summarizes the results of typological studies of language ‘since the emergence of the field’ with the publication of Greenberg 1963 (341). Many of these results are neatly summarized as ‘implicational universals’,

[16] Wasow’s first definition equates generation with recursive enumeration; the second equates ‘generative’ with ‘systematic’. The latter is too inclusive as it would encompass structuralism and some of the functional theories discussed in the next chapter.

[17] Though I personally prefer Chaucer’s ‘winning love’ (107).

generalizations of the form  $X \rightarrow Y$  'if X then Y', which can be presented in tabular form showing the widespread occurrence of the patterns (1)–(3), but not (4).

- |                       |                            |
|-----------------------|----------------------------|
| (1) $X \ \& \ Y$      | (3) $\neg X \ \& \ \neg Y$ |
| (2) $\neg X \ \& \ Y$ | (4) $X \ \& \ \neg Y$      |

For example, let X be 'singular is overtly inflected' and Y be 'plural is overtly inflected'. Then the rarely occurring pattern is 'singular is overtly inflected and plural is not overtly inflected'. Hierarchies of the sort illustrated by what categories are overtly inflected for number are simply chains of implicational universals (351).

15. *An introduction to formal semantics*, by Shalom Lappin, 369–393

Lappin puts the problem of understanding effective communication as the focus of formal semantic theory:

Formal semanticists seek to understand [effective communication] by constructing precise mathematical models of the principles that speakers use to define ... relations between expressions in a natural language and the world which support meaningful discourse (369).

Following a long tradition, Lappin limits his discussion to 'sentences that make statements, and are taken to be either true or false' (371). Nevertheless, it ranges over an enormous amount of material, and will not be understood by nonlinguists, unless they happen to have prior knowledge of logic. Lappin covers the last 125-year history of formal semantics, summarizing Fregean first-order logic, comparing Davidsonian and Montagovian semantics, describing generalized quantifiers and the semantics of *most*, discussing dynamic semantics, and concluding with a survey of noncompositional semantics.

16. *Pragmatics: Language and communication*, by Ruth Kempson, 394–427

Kempson defines pragmatics as 'the study of communication', and its goal as

providing a set of principles which dictate how knowledge of language and general reasoning interact in the process of language understanding, to give rise to the various different kinds of effect which can be achieved in communication (396).

Like Lappin, Kempson takes an historical approach, but the tour is more leisurely, as there are only three stops: Grice's theory of conversational implicatures, Sperber & Wilson's relevance theory, and her own dynamic

constraint satisfaction model.<sup>18</sup> She describes Grice's theory as the most congenial to generative grammarians, as it assumes a clean separation of knowledge of language and principles of use in building up representations of meanings in context.<sup>19</sup>

However, Kempson shows that Grice's theory is not correct, because of cases in which a purely linguistic interpretation cannot be built up before pragmatic principles come into play. Relevance theory is better in this regard, but still flawed, as it involves at least a partial separation of knowledge of language from principles of use in the computing of contextual meanings, whereas a more thoroughgoing integration of these two components is called for.

*17. Discourse analysis, by Agnes Weiyun He, 428–445*

According to He, discourse linguists are functional linguists:

Unlike formal linguists ... who believe that language is a self-contained system, discourse linguists maintain that language is inseparable from other aspects of our life and that the selection of linguistic forms should be explained in terms of authentic human communicative needs (429–430).

From this, it follows that anyone who analyzes discourse formally, like the authors of chapters 16 and 25, is not a discourse linguist.

Formal and functional discourse analysis cannot be meaningfully compared, however, except on the basis of their respective analyses of the same data. As far as I know, that test has yet to be performed.

*18. Linguistics and literature, by Nigel Fabb, 446–465*

This chapter deals with two problems: identifying the processes required to produce and understand literary texts, and how the distinctive characteristics of literary communication are understood. Regarding the first problem, Fabb asks whether any of those processes are 'cognitive', like descriptive rules of grammar, or 'cultural' or 'conventional', like prescriptive rules, and concludes that some are indeed cognitive, inasmuch as they interact with unarguably cognitive rules of grammar (447). He also points out that literary

[18] Kempson doesn't give a name to her own pragmatic theory; I took 'dynamic' from the titles of her recent papers and of Kempson et al. (2000), and 'constraint satisfaction' from section 4.2 (415–423). Speech act theory is discussed, but shown to be subsumed by relevance theory (411–412).

[19] Of Grice's theory, Kempson says that it 'is particularly appropriate for a Chomskian view of linguistic knowledge as ... encapsulated and independent of other cognitive capacities ... (see chapter 00)' (397). There is, of course, no chapter 00 in this book, and no chapter describes linguistic knowledge in quite this way; it is not listed as one of the 'tenets' of generative grammar in chapter 12. Localization of language capacity in the brain is discussed in chapter 24, but not in connection with the evaluation of grammatical or pragmatic theory.

cognition differs from linguistic cognition inasmuch as only rules of the former make explicit use of numbers greater than 2 (453), and that literary meter, unlike strictly linguistic meter, shares important properties with musical cognition.

Fabb worries about the role of nonconstituents in the formulation of certain literary rules, such as the one that allows *pleasure* to rime with *treasure*, and the syllable partial *ka* to alliterate in the *Kalevala* (457). Perhaps the solution is to consider that the relevant units are formed by removing a subconstituent from a larger constituent, such as syllable onsets for the *pleasure/treasure* rime, and codas for *Kalevala* alliteration.

19. *First language acquisition*, by Brian MacWhinney, 466–487

MacWhinney notes that most writing about first language acquisition takes the point of view of the linguists or psychologists who study it, or of the parents and educators who use the results of their research. In this chapter, he tries to take the point of view of the child from birth to puberty who undergoes the process. Sometimes one wonders how he knows what the child is experiencing, as when he writes: ‘From the infant’s point of view, language is still nothing more than an entertaining, but rather superficial experience’ (468).

Starting in section 5, MacWhinney resumes the psycholinguist’s stance and begins formulating objections to certain claims in the literature, for example, the ‘mutual exclusivity’ constraint, which he describes as an experimental artifact (474). More significantly, he attacks nativism, assuming that:

[M]ost of the search for innate constraints on language learning is grounded on the supposed impossibility of recovery from overgeneralization (480).

MacWhinney argues that such recovery is not only not impossible, but not even difficult. However, the basis for nativism is much broader than MacWhinney acknowledges (see chapter 4: 102, which summarizes the nativist position without so much as mentioning overgeneralization), so that even if empiricists (or ‘emergentists’) succeed in showing how the child can recover from overgeneralization, they still have a lot of work to do.

20. *Linguistics and second language acquisition: one person with two languages*, by Vivian Cook, 488–511

21. *Multilingualism*, by Suzanne Romaine, 512–532

Chapters 20 and 21 are companion pieces, 20 focusing on psycholinguistic and 21 on sociolinguistic aspects of bilingualism.<sup>20</sup> Chapter 20 opens with a brief historical sketch of the origins of the field of second language

[20] The terms ‘bilingualism’ and ‘multilingualism’ are used interchangeably in these chapters.

acquisition, from Weinreich 1953 to Selinker 1972 (spanning late structuralism and early generative grammar), followed by discussion of ten research questions. Each of the ten sections ends with a brief summary of current understanding in that area, making it very easy for nonlinguists to get the point.

Chapter 21 deals with a wide range of social and political issues involving multilingualism, including the circumstances under which multilinguals choose which language to speak, and those that lead to language death.

22. *Natural sign languages*, by Wendy Sandler & Diane Lillo-Martin, 533–562

The publication of Stokoe 1960 marked the beginning of ‘serious investigation of natural sign languages’, showing that ‘these languages are bona fide linguistic systems, with ... the full range of expressive power that characterizes spoken languages’ (533). This chapter summarizes our current understanding of the syntactic, phonological and morphological properties of sign languages, discusses at some length sign language acquisition, and neural control of sign language.<sup>21</sup> It also points out certain structural similarities across sign languages, which have yet to be satisfactorily explained.<sup>22</sup>

23. *Sociolinguistics*, by Florian Coulmas, 563–581

Coulmas deals with broad questions such as how the sociolinguistic notion of ‘language’ differs from that of other types of linguists, and how successful sociolinguistic theories have been. He notes that modern sociolinguistics has grown largely out of the disciplines of historical linguistics and dialectology, and has received remarkably little help from sociologists, who are on the whole uninterested in language. Nevertheless, there are two distinct types of sociolinguistics practiced today, micro- and macro-sociolinguistics, focusing respectively on social aspects of language use and on linguistic aspects of social organization (566).

24. *Neurolinguistics*, by David Caplan, 582–607

This chapter surveys the two major components of modern neurolinguistics, language disorders (or aphasiology) and the relationship between language and the brain (582). In addition to describing modern non-invasive

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[21] Section 4 on neural control should be read in conjunction with chapter 24.

[22] This chapter does not discuss, except in passing (552–553, 560), the consequences of depriving deaf children of contact with natural sign languages.

techniques for studying the brain, Caplan surveys current views on the vexed question of the localization of language function in the brain.

25. *Computational linguistics*, by Richard Sproat, Christer Samuelsson, Jennifer Chu-Carroll & Bob Carpenter, 608–636

This chapter provides an introduction to ‘four ... popular areas of inquiry’ in computational linguistics: syntactic parsing, discourse analysis, computational morphology and phonology, and corpus-based methods (608). The notations the authors use in the various sections will be difficult for nonlinguists without background in computer science to work through.

26. *Applied linguistics*, by Janie Rees-Miller, 637–646

In this chapter, Rees-Miller surveys the field of applied linguistics, and provides a brief introduction to each of the following six chapters.

27. *Educational linguistics*, by James Paul Gee, 647–663

Gee discusses how linguistics informs pedagogy, not only the teaching of such language-related skills as reading and writing, but also the effects of ‘social language’ (or ‘register’) and ‘genres’, and gaining insight into social interactions in schools and other institutional settings. He notes that different views about the nature of language lead to different views about how best to teach reading and writing. Partisans of whole language tend to draw their support from functional linguists, whereas adherents of phonics get it from formalists. Gee’s analysis of a fragment of an interaction between an adult researcher and a fourth-grade student (660–662) is as effective a piece of discourse analysis as any in chapter 17.

28. *Linguistics and reading*, by Rebecca Treiman, 664–672

This chapter discusses top-down and bottom-up processes in reading, indicating that skilled readers rely more on bottom-up processing than do unskilled ones; word recognition, in particular how readers ‘derive the phonological forms of words from their spellings’ (667); learning to read and spell; and dyslexia.

29. *Clinical linguistics*, by David Crystal, 673–682

This chapter is an insightful and humane general discussion of language disorders less severe than aphasia: their identification, diagnosis (the determination of what is wrong), assessment (just how wrong is it?), and

treatment, and the role that linguistics can play in the training of clinicians. Crystal does not discuss specific disorders, such as stuttering or specific language impairment.

30. *Forensic linguistics*, by Roger W. Shuy, 683–691

Shuy surveys the role that linguistics can play in legal settings, ranging from giving advice in trademark infringement cases, to the improvement of jury instructions. With the increased sophistication and use of surveillance techniques, recordings of dialogue are more and more being introduced as evidence in criminal cases, resulting in the need for linguists to evaluate that evidence. He sees a 'very promising' future for forensic linguistics (691), but the resistance of the legal system to advice from experts on matters of language remains strong.

31. *Translation*, by Christoph Gutknecht, 692–703

As long as there is more than one language there will always be a need for translators, and human translators are not about to be replaced by machine translation programs (703). This chapter includes discussion of such topics as how simultaneous translation is done, and the nature and types of 'false friends' such as Italian *lussurioso* 'lascivious', not 'luxurious'.

32. *Language planning*, by Frank Anshen, 704–713

This is the only chapter not divided into sections and subsections, which makes it harder to follow, and not only for nonlinguists. The chapter is structured, but it reads like a series of case studies of how different countries are dealing with the question of what language or languages should be dominant.

4. OVERALL EVALUATION OF THE BOOK

A general handbook such as this serves two quite distinct functions: (1) as a handy place to look up information and (2) as something you can hand to a student, colleague or friend and say 'go read this'. Several of the chapters, including 2, 3, 4, 7 and 14, serve the first function well, and others, notably 1, 6, 16, 18, 20, 22, 24, and 27 through 30, do the same for the second. This is not to say that the remaining chapters are not valuable, but only that in my judgment they do not serve the function of a handbook chapter as well as the ones just mentioned.<sup>23</sup>

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[23] I do not evaluate chapter 26, as it is an introduction to the following six chapters, and not a survey in its own right.

Because of the lack of a chapter on adult language processing and chapter 19's anti-nativist stance, psycholinguistics is the least well represented major subfield in this volume, although this deficiency is made up for in part by the excellent chapters on bilingualism and sign language. The 'core' areas of phonetics, phonology, morphology, syntax and semantics suffer to a lesser extent: phonetics because of the absence of a chapter on acoustic and auditory phonetics; phonology and morphology because the coverage is idiosyncratic; syntax because the resources of having two separate chapters are not efficiently used (see the discussion of overlap above); and semantics because chapter 10, on the lexicon, is limited to a discussion of English, and then only to a relatively narrow (albeit interesting) range of topics, and chapter 15, on formal semantics, covers too much ground in too little space, making it inaccessible to those who do not already know something about the field.

The editors' efforts to include both formalist and functionalist perspectives are only partly successful. The views are indeed presented, sometimes pointedly so, but no chapter attempts a systematic comparison, much less a reconciliation.

##### 5. CONCLUDING REMARKS ON THE SCIENTIFIC STUDY OF LANGUAGE TODAY

The editors point out that linguistics was first defined as the science of language nearly 150 years ago (xiv). However, as several of the authors point out, the way in which linguistics has considered itself a science has changed considerably over the years.

Joseph remarks that the 19th-century discoveries of regular laws of sound change 'put linguistics on a scientific footing' (chapter 5: 125). That is, linguistics was originally defined as the science that studies linguistic regularities. The structuralist conception of science added to that notion the idea that linguistic accounts be complete and replicable. Campbell disparages structuralists' concern with methodology (chapter 4: 99–100), but it was a necessary step in the creation of a truly comprehensive science of language. Generative grammar dramatically opened up the domain in which linguistic evidence could be found and evaluated, from corpora to native-speaker judgments, including, and this cannot be emphasized too strongly, judgments of ungrammaticality. It also was receptive to the use of formal, explicit mathematical tools for linguistic analysis, which helped pave the way to the inclusion of the study of semantics as part of linguistics.

Chomsky himself maintains that the real 'revolution' in linguistics was not the creation of transformational-generative grammar in the 1950s – that, after all, was only an extension of structuralism as practiced by Zellig Harris and others – but the rejection of rules in favor of 'principles and parameters' around 1980 (Chomsky 2000). The new scientific ingredient here is conceptual

simplicity and parsimony, which is to be distinguished from the notion of simplicity that figures in earlier generative accounts. With it too comes a rejection of the structuralist notion of comprehensiveness, the concern that the science of language be accountable for everything that can be said systematically about language. There is both a core and a periphery, and the core is the study of whatever aspects of language children acquire uniformly without instruction.<sup>24</sup> Thus, considering the history of generative grammar as consisting merely of a succession of different versions of more or less the same theory, as in chapter 4 (102–103), misses the basic point of the enterprise.

The increasing popularity of functionalist theories, and the return of empiricism in several parts of the field, especially psycholinguistics and computational linguistics, indicates widespread dissatisfaction with recent developments in generative grammar. This is not to suggest that these responses are un- or anti-scientific. On the contrary, I suggest that several different ‘sciences of language’ may flourish under the umbrella of linguistics; that different subfields have different subject matter that requires different methods, theories and tools. Moreover, these can be combined in various ways, so that one can look at computational linguistics as requiring the use of both symbolic and statistical methods (Klavans & Resnik 1996), and psycholinguistics as requiring both rules and habits (Townsend & Bever 2001, whose slogan is ‘We understand everything twice’).

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[24] The spirit of this kind of inquiry is best illustrated in this book by chapter 11 (285–294).

## REVIEW ARTICLE

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