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Modality and Structure in Signed and Spoken Languages by Richard P. Meier; Kearsy Cormier;
David Quinto-Pozos

Review by: Mark Aronoff and Irit Meir

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structure isn't really necessary, but it is used in some other programming languages and was included to make learning the Java language easier for programmers already familiar with the structure'. Especially given that this book is aimed at people who haven't programmed before, this gives the strong impression that the switch statement should be covered in an appendix or not at all—for various reasons the switch statement is little used in Java. However, one actually finds this quote and two pages on switch statements on p. 20 in a chapter entitled 'The basics'.

At a larger level, too, the book does not provide as much for the language researcher as might be hoped. There are some nice examples which could help a psycholinguist, such as programs for running self-paced reading experiments. But, for other communities, it falls short. A keyword-in-context (KWIC) concordance is such a basic tool for text corpus examination and both a traditional and nice introductory programming exercise. It is hard to justify its' not being included in a book focused on language researchers. But there is no mention of 'concordance' in the index, and if one finds the program called Concord on p. 93, one will be disappointed to learn that it counts only the frequency of words in a text. (There are several types of concordances, but a necessary condition on use of the term is that a concordance gives you some information on the textual locations where a word is used.) In general, there is not as much exemplification of doing interesting language-related tasks as one might hope. Language researchers often need little programs, for instance, to capture header information from a text, so that the author and date can be printed next to a citation, or to search by sentences, rather than by lines like the classic grep program and the implementations of it that H presents. There are just too few examples that present ideas and methods for the useful things that one can do with some elementary knowledge of programming. In particular, two key technologies that language researchers are likely to want to understand are regular expressions for searching and the processing of structured text in XML files. H covers regular expressions in an appendix (though, again, the coverage of third party libraries there is dated given the integration of a regular expression package into the core of Java in JDK1.4), but regular expressions are so central in the kinds of tasks that most language researchers do and would like to do that they deserve treatment in the main text. And XML is not covered at all, which is a shame for several reasons, including that it has become so frequent for storing language data that manipulating XML files is rather more complex than simple text files, beyond what you can do with the built-in commands of standard operating systems and text editors, and because Java has such nice libraries for dealing with XML.

This book is a nice gentle introduction to programming, more usable in size and subject matter than a standard guide to Java programming. One will get a decent and clear explanation of what programming is and how it can be used. Nevertheless, a number of aspects of the book lead me to be hesitant to recommend it at this point in time as the place for aspiring linguist programmers to begin.

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Modality and structure in signed and spoken languages. Ed. by RICHARD P. MEIER, KEARSY CORMIER, and DAVID QUINTO-POZOS. Cambridge: Cambridge University Press, 2002. Pp. xviii, 480. ISBN 0521803853. \$90 (Hb).

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and IRIT MEIR, *University of Haifa*

Legitimacy is most readily understood in terms of group membership, and the simplest social groups are rooted in similarity. The easiest way to achieve legitimacy is thus to show that one is similar enough to the core members of a group to deserve membership in that group. It is

therefore not surprising that the first research on signed languages was devoted to legitimation. William Stokoe (1960) changed the world in a real way more than any other modern linguist through his demonstration that American Sign Language (ASL) could be studied like any other natural language and hence deserved to be treated on the same level as any spoken language. Klima and Bellugi (1979) showed that deep analysis of a signed language could yield results of broad theoretical interest to all linguists. Most of the research that has followed these pioneering works is similarly devoted to showing how similar signed languages are to spoken languages.

Only recently has the social legitimacy of signed languages been secure enough that at least some sign language researchers have begun to realize that the greater value of signed language as a research model may lie not in similarity but rather in difference. In particular, by comparing signed and spoken languages, we can identify the properties that are pertinent to language *per se* and distinguish them from those that are accidental. By studying the differences, we might begin to explain some of the structural properties of the two types of languages, since these differences may be due to constraints on each of the modalities, that is to say, we might get a partial answer to the question 'why languages are the way they are' (5).

The book under review reveals through its title that it is part of this new wave. Its goal is to answer the following question about the nature of human language: 'What are the effects and non-effects of modality upon linguistic structure?' (1). It purports to achieve that goal by examining and comparing a variety of grammatical structures in languages in both modalities. The opening chapter by one of the editors (Richard P. Meier) lays out very clearly both the similarities (non-effects) and differences (effects) between languages of the two modalities and presents the potential significance of such similarities and differences for our knowledge and understanding of human language. The chapter is written in a way that provides an entry point for a more general audience to some basic issues in sign language linguistics and shows why this area of linguistic investigation should be of general interest to linguists.

The first section of the book is devoted to phonology and so raises the issue of the impact of modality on language structure in a direct way. Since phonology is the linguistic level that interfaces with our articulatory and perceptual systems, languages in different physical modalities should have different phonological properties, because the articulators (vocal tract vs. hands and body) and the perception system (ears vs. eyes) are so different. The question is whether such physiological differences penetrate the linguistic organization of the phonological units and whether modality leaves its footprints on the phonological STRUCTURE of the two types of languages. This section indicates that this is indeed so. Signed language and spoken language phonologies differ in significant respects that are traceable to differences between the two modalities, in particular to the simultaneous vs. sequential nature of the signs. This point is not new. It goes back to the pioneering work of Stokoe (1960), who showed that signs have a sublexical level of organization comparable to the phonological structure of spoken languages but that the basic units in signs are combined simultaneously rather than sequentially. The contribution of this section lies in the variety of perspectives it offers on the issue—theoretical, psychological, and statistical—and the uniformity of their conclusion, which, given their different perspectives, is all the more striking.

The section begins with the excellent introduction by HEATHER KNAPP and ADRIANNE CHEEK, which lays out the basics of sign phonology and the major research questions of the field, making the section more accessible and of interest to readers with no prior background in sign phonology. The first two chapters adopt a theoretical angle, arguing that the phonological representation of signed languages differs significantly from that of spoken languages. RACHEL CHANNON examines reduplication patterns in the two types of languages, pointing to a major difference between them, which leads her to conclude that this difference can be accounted for by assuming different phonological representations for signs and words.

DIANE BRENTARI's chapter introduces her prosodic model of sign language phonology, which pinpoints significant differences and an important similarity between signed and spoken languages. The differences lie in the advantage of the visual system for simultaneous processing and of the auditory system for sequential processing. The similarity is that both modalities contain phonological elements of two types: One type 'carries most of the paradigmatic contrasts'

(consonant features in spoken languages and place and hand configuration features in signed languages) and the other 'comprises the medium by which the signal is carried over long distances' (movement features in sign languages and vowel features in spoken languages). 'These observations suggest that UG [universal grammar] requires both highly contrastive and highly salient phonological elements' (31), though one might just as easily conclude that the simple exigencies of communication require a carrier signal and maximally contrastive information, without invoking UG.

The following two chapters tackle the issue from a behavioral angle. ANNETTE HOHENBERGER, DANIELA HAPP, and HELEN LEUNINGER look at the production end, comparing slip of the hand and slip of the tongue repairs in German Sign Language (DGS) vs. spoken German. DAVID P. CORINA and URSULA C. HILDEBRANDT examine the role of phonological structure in processing. Both chapters point to nonhomogeneity between signed and spoken languages in terms of the type of slip errors and their repair, and of the influence of phonological form on perception. SAMUEL J. SUPALLA and CECILE MCKEE conclude this section by looking at contrived communication systems like Signed English, which aim to represent manually the phonological and morphological structure of spoken languages, thus creating a hybrid that has the sequential structure of spoken language morphophonology and the visual-manual articulatory system of signed languages. Children who are taught these systems alter them in ways that make them conform to the phonological structures of established signed languages, thus strengthening the point that the different phonological structures of signed vs. spoken languages are what they are because they are best suited to the modality in which they are transferred.

Though the issues and challenges raised by this section should be of interest to linguists in general, the chapters are not uniformly accessible to people without a sign linguistics background. The brief introduction to the structure of signs in the introduction would have been much clearer if accompanied by illustrations showing the various phonological components of the sign. The use of letters to represent handshapes is of no use to the general audience without a chart that illustrates the different handshapes.

The first section of the book is a clear illustration of the advantage of studying languages in two different modalities, namely that it enables us to distinguish the core properties of human language from those which are modality dependent. Yet there may be another advantage to studying languages of different modalities. In some cases, properties characterizing language in general may not be so apparent in one modality and much more apparent in the other. Such is the case with the relationship between language and gesture, and the role of iconicity in language, topics which are addressed in the second section of the book. The need to draw a distinction between language and gesture is much more noticeable in the manual-visual modality. Since both language and gesture use the same articulatory and perceptual system, the decision whether a specific manual movement is a sign or a gesture is not at all trivial. Pointing, for example, functions as a pronoun in many sign languages, but it is also a very common gesture both in signed and in spoken discourse. When accompanying speech, however, the question of whether pointing is linguistic or not does not arise since the linguistic system is transmitted as acoustic signals, not as manual movements. Hence the linguistic system and the gestural system are easily distinguished by the physical properties of the signal. In signed communication such a division is not possible, thus necessitating the development of more elaborate criteria for distinguishing between the two.

ARIKA OKRENT notes that some acoustic signals within the speech stream in spoken languages are better regarded as gestures, not linguistic elements. One example is the lengthening of the vowel in the adjective *long* in an utterance such as: *It was a loooooong time*. By trying to solve a thorny issue in sign linguistics (whether the morphemes indicating agreement in agreement verbs are indeed morphemes or are pointing gestures), Okrent shows that the need to formulate a set of criteria to distinguish between gesture and language is not particular to languages of one modality. Though the debate about the nature of agreement verbs will not be familiar to a more general audience, and the criteria suggested in the chapter are not very decisive, 'the effort expended in trying to draw that line is very useful for gaining a better understanding of the nature of communicative behavior' (196).

The two other chapters in this section present two phenomena that characterize signed but not spoken languages. TERRY JANZEN and BARBARA SHAFFER show that lexical items in signed languages may originate in gestures, for example, markers of modality (such as a future marker) in ASL. In some cases (as in the development of a facial expressing marking the topic in ASL), a gesture can develop directly into a grammatical morpheme. The paper by ANNE-MARIE P. GUERRA CURRIE, RICHARD P. MEIER, and KEITH WALTERS compares the vocabulary of four signed languages with different degrees of relatedness. The greater resemblance found between the vocabularies of unrelated signed languages than that found between unrelated spoken languages is explained by the visual-gestural modality's capacity for iconic representation. Though these last two chapters point to differences between signed and spoken languages, it is not clear whether there are resultant structural differences in the two types of languages.

Not surprisingly, the section on syntax finds 'few or no effects of modality', as proclaimed by the section's subtitle. The one well-known syntactic difference, the fact that question words routinely occur at the very end of a sentence in signed languages rather than at the beginning, might be attributable to modality, but it is not discussed here. The last section treats the use of space in signed languages (including the tactile language of Deaf-Blind individuals). Two chapters are devoted to the nature of pronouns and verb agreement in signed languages (as is DIANE LILLO-MARTIN's chapter in the syntax section), topics which have received a great deal of attention in recent years, but both chapters are devoted largely to sign-language-particular analytical issues. There is also a chapter describing the learning of British Sign Language by Christopher, the well-known linguistic savant, who shows a marked weakness in his command of the spatial domain. By far the most interesting chapter in this section is the one by KAREN EMMOREY on the use of space in signed languages to represent space. Emmorey argues that signed languages call for a type of spatial transformation, in which the speaker adopts the addressee's visual perspective, that is not needed when processing spoken languages.

This book represents a strong first step towards an intriguing goal: the use of signed and spoken languages to discern the nature of language in general by triangulation.

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Alliteration and sound change in early English. By DONKA MINKOVA. (Cambridge studies in linguistics 101.) Cambridge: Cambridge University Press, 2003. Pp. xix, 400. ISBN 0521573173. \$90 (Hb).

Reviewed by GEOFFREY RUSSOM, *Brown University*

This remarkable book is a history of English syllabic onsets with special reference to the poetic treatment of onsets known as alliteration. The book makes diligent use of recent philology and goes beyond it to find new tests for important claims about syllable structure.