

GEORGE ANTON KIRAZ. **Computational Nonlinear Morphology: With Emphasis on Semitic Languages.** 2001. Cambridge: Cambridge University Press. Pp. xxi, 171.

This highly technical work attempts to consolidate K's expertise in computational morphology and Semitic linguistics. It has the very practical commercial purpose of providing a theoretical framework from which such systems as spell-checkers for Arabic or Syriac can be written more economically (15). K's innovative model consists of five separate sublexica (prefix, suffix, pattern, root and vocalism) which make up the first lexical component. These sublexica are combined and mapped to a surface representation using a second rewrite rules component. This monograph explains the model (69-89), how it can apply to three different morphological approaches (90-120), and how to express it using the more complex computational medium it requires (121-48). This work is a revision of K's brilliant doctoral thesis at the University of Cambridge under Stephen Pullman that was, unfortunately, not modified enough from its original form for an academic monograph.

A first chapter was added to the dissertation that introduces formal linguistics, computational morphology and Semitics to a broad audience including 'computational linguists, theoretical and applied linguists, [and] Semitists...' (1). After this introductory chapter, the rest of the work assumes the reader has a background in computational morphology. For instance, every theoretical model K describes requires the reader to learn a new set of mathematical and computational symbols used by the particular author under review. The extensive use of these computational equations combined with the constant use of jargon particular to computational linguistics, such as 'concatenation' and 'instantiated', seems inconsistent with the anticipated audience.

Furthermore, the inordinate amount of time spent reviewing the history of scholarship (32-68) seems more appropriate for demonstrating the author's competence before his doctoral

committee than for providing the reader the prerequisite background to the new model proposed. While the title indicates the emphasis will be on Semitic languages, he is often hesitant to substitute the examples the scholar under review provided with Semitic examples that keep more in line with the theme of the monograph. Thus we find examples from English (52-54) and Ngbaka (64) interspersed among the usual Arabic and Syriac examples. But then, when reviewing Kataja and Koskeniemi's work on Akkadian, where an example from another Semitic language would have been apropos, he changed the Akkadian example to Arabic (61-62).

Only at the very end of the book is the reader informed that the type of formal linguistic rules necessary for this new model have not been adequately articulated for the Semitic languages (152). Without the articulation of these rules, which would be of interest to Semitic scholars and formal linguists, this new model is left hollow. It is as if K has designed a sleek automobile without an engine capable of running it. On a minor note, the editorial insertion of either the abstract or the series page in the front matter of the book caused each of the references to the introductory material in both the index and the body of the text to be consistently two pages off.

The valuable material in this book of particular interest to computational linguists can be found in K's far more straightforward article, '*Semh e: A Generalised Two-Level System*', in *Proceedings of the 34th Annual meeting of the ACL*, 1996 (159-166). It contains more of the actual computer code that underlies this new model and lacks both the elementary computational explanations and the long history of research. Similarly, formal linguists and Semitists interested in this topic will find K's article, '*Syriac Morphology: From a Linguistic Model to a Computational Implementation*', in R. Lavenant, ed., *VI-Itum Symposium Syriacum 1996*, in

Orientalia Christiana Analecta, much more appealing. It is organized by grammatical categories formalizing the morphological and syntactic rules for Syriac outlined by Nöldeke. There is also a much more accessible description of the computational aspect of the project for the non-specialist. It is unfortunate that the most compelling and substantive portions of these early articles were not included in this final product.

Bradley J. Spencer
California State University, Fullerton