P.S.F. van Keulen and W.T. van Peursen, eds. *Corpus Linguistics and Textual History: A Computer-Assisted Approach to the Peshitta.* **Studia Semitica Neerlandica 48. Assen: Van Gorcum, 2006. ISBN: 90 232 4194 0. Pp. 370. $170.00 USD, cloth.**

1. The first 250 pages of this volume are the product of a seminar held in 2003 to discuss aspects of the Computer-Assisted Linguistic Analysis of the Peshitta project (CALAP), a join research venture of the Peshitta Institite in Leiden and the Werkgroep Informatica Vrije Universiteit in Amsterdam (WIVU) which has a long track record in automated linguistic research into the text of the Hebrew Bible. The CALAP project seeks to bridge the gap between computer-linguistics and traditional, non-automated approaches to linguistics and textual analysis.

2. In comparison with other fields of linguistic research such as contemporary English, the biblical corpus is very limited. However, analysis of the language of the Bible presents its own problems. The principal form in which it has been preserved is in the medieval manuscripts of the Masoretic Text, which are not completely uniform. A written vocalization system for the consonantal script was not developed until the seventh century CE, and though the Tiberian system prevailed, others also existed. Before that, vowels and therefore the implicit grammatical analysis were known through reading traditions, which cannot have been completely uniform. So ultimately computer analysis of the Hebrew Bible is being applied to the written form of a language whose original stages and dialects have been levelled out by the process of editing and transmission.

3. Analysis of the Peshitta complicates matters further, since it represents a second to third century CE corpus of Syriac translations of a Hebrew text which had little vocalic representation. There is some debate over the most original form of the Peshitta, which itself exists in many manuscripts. It too was not vocalized until the late seventh century. And since the Peshitta represents the oldest extensive writing in Syriac, there is little "native" Syriac of the period with which to compare it.

4. Thus there was plenty to discuss at the seminar in terms of general approaches and specific analysis. The basic aim of the CALAP project is to have both a Hebrew and a Syriac textual database of biblical texts that enables comparison of the respective linguistic formats (p. 62). By necessity, the texts analysed are those of the scholarly printed editions (but taking into account *qere* and *ketib*, and the variants of Syriac MSS 9a1 and 7a1). The parsing process developed for the analysis of the Hebrew Bible has been extended to the Peshitta, and the matches and differences between the texts can be noted.

5. A major issue to emerge is the procedure to be adopted in the cases where the computer is unable to analyse a word or phrase ("disambiguation techniques"), and how far and how often this task should fall to a human parser. It was agreed that "the goal of *correctness* must trump *efficiency"* (Forbes, p. 126) because of the danger that small errors could cripple correct parsing later on. One interesting initial result of the computer-assisted analysis is the finding that the Peshitta is "a translation at clause or sentence level" (Dyk, p. 151). On the other hand, the seminar came up against the difficulty of parsing the enclitic personal pronoun: is it a copula (Khan), a pronoun (Goldenberg) or an emphatic particle (Muraoka), and what is its relationship to the copulaic *'ith*? This is has long been an issue for the beginning Syriacist, and in some ways it is comforting that it poses problems for the most advanced grammarians! The debate runs to nearly fifty pages of the volume (pp. 156–204).

6. The second section of the volume concerns the Peshitta of Kings. First there is a discussion about points of agreement between the Aramaic Targum and the Peshitta of Kings and their explanation. Van Keulen's findings are much in accord with those of Smelik of Judges, Morrison for Samuel and Weitzman for other books, that the similarities are due to common tradition not literary dependence. However, though interesting, as Romeny and Walter both note, it is difficult to see what specific relevance the study has for the CALAP project, though it does illustrate that purely human investigation (as opposed to computer analysis) still has its merits.

7. The final section (pp. 253-358) represents interdisciplinary in-depth analyses of the textual features of the Peshitta of 1 Kings 2:1–9, according to the methodology of CALAP. Van Keulen classifies the differences between these verses in MT and Peshitta (both BTR and 9a1) as involving conjunction, construction, number, object marking, phrase structure, preposition, speech formula, spelling, translation equivalence, verbal system, verbal valency, word order. He applies these categories to 1 Kings 2: 1–9 in a subsequent paper in the volume. Bosman and Sikkel demonstrate the model for parsing in the CALAP system that they outlined earlier in the volume. Dyk employs the "structured hierarchical approach" of CALAP on these 10 verses, noting how the differences between the Hebrew and Syriac tense systems are illustrated by the material under discussion, especially in independent clauses not providing background information. Her following contribution focuses on the generation of an electronic concordance, and she notes the importance of context in assessing translational equivalences and of calculating the ratio of cognates against non-cognates. In both cases the computer can assist, but "the critical eye of the researcher has not been made superfluous" (p. 326). Returning to the debate on the precise function of the enclitic personal pronoun, van Peursen analyses five nominal clauses in 1 Kings 2:1–9, comparing the approaches of Muraoka and Goldenberg. Van Peursen summarizes the various approaches as valuable in combination "to describe more precisely the interaction between language system and literary design" (p. 357) and compares the situation to that of the conflicting theories of light as a wave or as particles. Certainly the volume and the CALAP project demonstrate the value of computer-assisted linguistic study, but also the continuing utility of human analysis and intuition.

Alison G. Salvesen
Mansfield College
University of Oxford