The Royal Inscriptions of Mesopotamia and the Computer

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According to the original proposal for the Royal Inscriptions of Mesopotamia Project submitted to the University of Toronto and the Social Sciences and Humanities Research Council of Canada, the Project has three objectives:

1. To locate, edit and publish every Royal Inscription of Mesopotamia;
2. To enter all of this data into a computer; and
3. To establish the methodology in Assyriology for the publication of standard text editions.

Given the importance and scope of the project, I felt it would be useful to report on the ways in which we are integrating the use of the computer with the objectives of the project. Since my responsibility involves issues surrounding the computerization of the data and the transferring of this into some sort of manuscript suitable for publication, I will confine my remarks to issues that touch on these subjects.

From the point of view of the computer consultant, there were a number of objectives in designing the system for the RIM Project. Each of these objectives was an attempt to answer some operational problem that could be predicted in the production of the final product. Thus, one of the objectives of computerization, perhaps the primary one, was to reduce to an absolute minimum the number of times data had to be typed, for each time that the same material was retyped, there was an opportunity for the introduction of new errors into the final product. A second objective was to use the machine wherever possible to carry out tasks that were mechanical, repetitive, and basically mind-numbing, freeing the researcher for more productive pursuits. Finally, I hoped to be able to use the data that we had 'captured,' as the jargon has it, for purposes other than simple publication. These included the production of word lists, concordances, scores, and the like for research into the royal inscriptions.

Let me turn now to an actual description of the process. For this, I have chosen an example that is neither the most complex nor the simplest that we expect to encounter in the project. I should point out, however, that the procedure is the same for the simple and complex examples, which is perhaps a statement in its favour.

The editor responsible for one of the three major subject areas – Early Periods, Babylonia, or Assyria – contracts with an Assyriologist to be responsible for a group of texts. This 'author,' with the assistance of the research staff of the project, gathers all bibliographic material related to this group of texts, and assigns each text a number. For the purposes of the project, a text has been defined as 'an inscription which existed in antiquity and which may be represented in a number of exemplars which are more or less duplicates.' 'The term exemplar refers to a single actual inscription found on one object, be it clay tablet, stone mace head, etc.' (Editorial Manual, p. 3). For each text, the number of exemplars known must be ascertained. All of this work is preliminary to any contact with the computer.

At this point, the staff of the RIM Project enter one copy of each text into the computer. If a published edition of this text exists, it can be used as the manuscript for entry. Any inconsistencies with RIM conventions can be ignored at this point, as they can later be changed with what are called a set of universal commands, such as 'change all *šarru* to LUGAL.' If no published edition exists, the 'author' must prepare one for entry into the computer. THIS IS THE ONLY TIME THAT THE TEXT WILL BE ENTERED INTO THE COMPUTER. From this point onward, up to and including the production of the camera-ready copy of the final publication, each time the text is accessed, only corrections will be made. This procedure meets the primary objective of computerization, and will, I hope, ensure a high degree of accuracy in the final product.

A print-out of this text is then checked by the author or one of the research assistants for errors in typing, consistency in use of conventions, and the like, and these changes are made to the original file. Then each line of the text is copied by the computer a given number of times. This number is specified by the 'author,' and corresponds to the number of exemplars plus a certain margin for still unidentified exemplars. The expanded file is then saved as the 'master file' of the text, and on it each line is identified by the line number and exemplar number. A print-out is made of this material, with each page identified by king and text number, and is sent to the 'author,' who begins to collate the exemplars, entering all variants onto the print-out. As can be seen, this process saves the researcher rewriting the same text time and again, and provides him with a working manuscript from the very start of his task.

When the variants have been noted, the print-out is returned to the project office, and the 'corrections' are entered into the master file. This file now constitutes a

score of all the exemplars of the particular text, and forms the basic record for all further work. A clean print-out is now produced and checked against the original, and the author chooses the exemplar that will serve as his main text. He then prepares his list of variants, working from the score that has been produced. At the present time, this work has to be done by hand, but I hope eventually to produce programs that will do it automatically by comparing the exemplars against the main text.

The variants are treated in two groups. The first is non-orthographic variants, which will be included as an apparatus beneath each text in the published version. The second group consists of orthographic variants, which will be listed at the end of the volume. This decision was taken because it was felt that the non-orthographic variants are potentially more significant to a broad audience, and their inclusion with the orthographic variants, of which there are far more, would obscure their importance. Furthermore, separating out the two sets of variants poses much less of a typographic problem, and including the orthographic variants at the end of the volume will produce a cleaner page format and reduce the cost of publication.

The 'author' also prepares a translation of each text and commentary and notes as needed. These too are entered into the computer, print-outs made and checked, and corrections entered.

When all of this material is prepared, it is possible to move to the printer's proof stage. Computer programs that we are now preparing will automatically transform the material into the proper printed page format, which can be checked on a regular lineprinter for accuracy. Once this checking is completed, the files are output on a photocompositor, which is linked to the computer and which produces camera-ready copy. These are the same files that were entered at the beginning of the process, and adjusted at the various stages of editing and proofreading. The output of the photocompositor is then sent to the printer for printing, binding, and distribution.

A few final remarks. All of the master files that the project generates, as well as the files that contain the main exemplar, will be permanently stored in computer readable form by the project. This will allow the production of hard copy print-outs of the scores for each text, which may well be produced as microfiche and included in the publication. The machine readable data will also allow the preparation of concordances and word lists. This has not yet been done for any of our material, but is one of the tasks to which we shall turn in the not too distant future. Finally, having this corpus of texts in computer readable form will allow other scholars who are interested in the royal inscriptions access to a large and important data base, the manipulation of which is limited only by our imagination.