
ORIENTAL MANUSCRIPTS AND NEW INFORMATION TECHNOLOGIES

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COMPUTER ASSYRIOLOGY

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Assyriology is the branch of Orientalistic which studies the history, languages, and cultures of those ancient peoples which employed cuneiform writing. A specific feature of Assyriology is that it deals with a number of languages not related to one another (with the exception of Urartian and Hittite, which belong to the same language family). Cuneiform was invented by the Sumerians at the beginning of the third millennium B.C. It was later borrowed from them by neighbouring peoples, either directly or not, who adapted it to their own languages. It is an extremely complex writing system employing several hundred signs, each of which can have several (sometimes dozens) syllabic (phonetic) and up to five or six semantic (ideographic) meanings. It is not difficult to calculate the number of variant readings, which can arise from a combination of only three or four cuneiform signs. The matter is further complicated by the absence of word divisions and punctuation marks in cuneiform — all

signs were written one after the other without any spaces, divided only into lines. Fortunately, certain orthographic rules and grammatical features somewhat facilitate cuneiform reading.

Each cuneiform sign represents a combination of several wedge-shaped marks, which are vertical, horizontal or inclined. These marks were impressed by the scribe with a three-sided stick on a tablet of fresh clay which was then preserved by drying or, less frequently, by baking, as with ceramics. On rare occasion, inscriptions were made on other clay objects as well as on metal and stone. In the latter cases, they invariably imitated inscriptions on clay. At present, the world's museums possess approximately half a million cuneiform texts of varying lengths, ranging from a few signs to thousands of lines. The number of these texts continues to grow.

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Cuneiform texts are published to ensure specialists access to them. The simplest and least labour-consuming method of publishing such kind of texts would be to photograph them. For a number of reasons, however, readable photographs of cuneiform texts are either difficult or impossible to produce. The holographic method is extremely promising, but only the first steps have been taken in this direction. Therefore, cuneiform texts are currently published in the form of so-called drawings, copies made by hand on paper and then reproduced polygraphically. It is a labour-consuming process which requires highly qualified specialists. Ideally, drawings accurately reproduce the text and all of its individual features: the relative size of the signs, the handwriting of the ancient scribe, damaged spots, etc. Transliteration is employed for direct work with the texts: the text is rewritten in Latin letters and equipped with necessary diacritics. Transliteration is, in a sense, a "translation" of cuneiform into another, alphabetic, writing system. Each cuneiform sign is designated by a combination of Latin letters which convey either the most widely used syllabic (phonetic) meaning of a given sign or its most important ideographic (semantic) meaning in Sumerian.

Such a transliteration is performed in strict accordance with a well-defined set of rules (algorithms) and should be fully reversible, allowing one to recreate the original cuneiform text, if not its outward appearance. This is ensured by taking into account all possible variant readings which can arise as a result of the polyphonic and polysemantic nature of each sign, as noted above (section 1).

Thus, texts can be published in the following fashions: a) drawings, b) transliteration, c) drawing in conjunction with transliteration. Texts are then cited in transliterations or transcriptions which convey the actual pronunciation of each word in the corresponding ancient language. Only in rare cases, when handwriting or damage cause doubt about a particular reading, is a passage reproduced in drawing form. The final stage of work on a text is a translation, which is as complete as possible (given the condition of the text) and equipped with all necessary commentary. For this reason, texts are ideally published as drawings with transliteration and translation, introducing them into scholarly circulation, after which the texts can be employed for scholarly problems whatever they may be.