



WESTWOOD

Beyond clay and beyond paper

The Urkesh digital project spends a study season in the Fowler

BY GIORGIO BUCCELLATI

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| 3000 BC | Syro-Mesopotamia |
| 1500 AD | Europe |
| 2000 AD | America |

These sequence pairs describe the simplified trajectories—chronological and geographical—of the great discoveries in the articulation and communication of human thought: writing on clay, the printing press, the computer.

So here we are, in 2002 AD, working on our Urkesh data from about 2300 BC. We have long since graduated from clay. Is it the same for paper? And need we? The fact that you are reading this on paper would suggest a negative answer—even though everything up to the final transfer on paper was done electronically. The real answer is not so much technical as it is conceptual. Do we *think* paper or digital?

It is in these terms that I have approached, consistently, the question of the publication of our data from ancient Urkesh, modern Tell Mozan, in northeastern Syria. And this past summer we have concentrated even more than usual on these questions,

during a study season in the bowels of Fowler rather than in Mozan itself. From mid-June to mid-August a portion of our staff gathered at UCLA to work on our publications. And we were also able to present some of our results at an informal gathering in the Institute: the occasion was the publication of a volume on conservation at Urkesh, edited by Sophie Bonetti, the Director of our Conservation Program, who was in town for our study season.

This most recent Urkesh volume is published on paper and also electronically on CD. This is a mirror copy that reproduces exactly the information given in the book. But it is not the same as, say, the difference between soft- and hard-cover editions of the same book. The electronic version has many advantages: it contains internal links; it is searchable; it includes color documentation (not in the paper edition); it does not take up shelf space, and it can be distributed at practically no cost.

The latter is really a marketing decision: in our case, the CD sells for \$5 (and the book for \$25), with explicit permission

given for making copies from it. In addition, it will also be posted on the Urkesh website for free downloading. There is thus no limit to effective scholarly dissemination.

A digital edition of this type is by no means a novelty. In our own case, the first digital publication goes back to 1987, when the physical medium was a 5 1/4 inch floppy disk for a DOS system. The first Windows-based CD-ROM was a Festschrift in honor of Lloyd Cotsen and was issued in 2000. The technical aspect of this digital production is under the most capable supervision of our graduate student Fanxi Xu.

But what is the conceptual dimension of such digital publishing? If you look well, we are still solidly within the realm of *paper*. The digital version is truly a *mirror copy* of the paper edition in that it is conceived as essentially sequential. Even the links and search function are conceptually no more than an extension of footnotes and indices, however much easier and more efficient. The real qualitative jump to a more germane use of the electronic medium is when we detach our mindset from sequentiality



The Urkesh project team, Summer 2002

and look at the medium for both an analytical and a synthetic processing of the data. This other level of electronic publishing is what we were working on during our summer season at the Cotsen. It will produce what I call the “Urkesh Global Record,” based on a rigorous grammar that allows a maximization of the input and leads to a complex automated synthesis of the data. But of this I will write another time, when this other type of digital publication will be fully ready. A fuller exposition of this method of publication will come with the publication of the Urkesh Global Record.

Not that we should hold the sequential (paper) mode in disregard. There are at least two important aspects that make it, I believe, still irreplaceable. The first is that the nature of any argument is essentially linear, and the logic inherent in the propositional flow of the discourse adheres closely to the sequential scrolling through a paper product. The physical construction of the page(s) matches the conceptual construction of the argument. Conversely, excessive reliance on a conceptual scanning (matching the electronic scanning) may all too easily rob us of a full appreciation for the profundity of an argument being developed. In this respect, it matters little whether the *page* is embodied in a paper product or in the electronic medium.

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But in another respect we are still more closely anchored in the paper mode. The physical construct which we know as bound printed pages offers a perceptual grasp of the whole that is missing in the electronic medium. The perception of a whole held between two covers is quite distinct from that of a directory of folders and files. This special perceptual relationship to the book is such that it may remain with us into the distant future, just as memorizing by rote remained even after writing, or as the physical reality will remain, upstream of the virtual one, or gourmet food in spite of vitamin pills! It was thought with the advent of the *fax* machine that the postal service would go out of business in a few years: instead the quantity of mail increased dramatically. It may be that electronic publishing does not herald the death of paper publishing but invigorates it.

So, yes, we are going beyond paper, as our forebears went beyond memory by writing on clay. Our instinctive archaeological mindset will help us place the electronic revolution in perspective by looking at that other revolution, ushered in by the origin of writing. More than technical, we are dealing with conceptual revolutions/transformations. A shepherd would have known his sheep without the help of writing: but how could he account, without writing, for changes over time in flocks of thousands of animals? A bard would remember a long poem: but how could he compare, without writing, multiple occurrences of the same word in different contexts? Thus writing changed the conceptual toolkit with which humans related to their world. Writing was infinitely more than an *aide-mémoire*. It changed our mind. So with computers. They do infinitely more than simply providing greater efficiency in writing and publishing. Tapping their potential means tapping, and expanding, our own mental potential. The Urkesh digital project is a small step along this road.

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