

Editorial

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***Didaskalia* Update**

From the beginning of October of 2005, *Didaskalia* will be moving to a new server at the Centre for Computing in the Humanities at King's College, London, where I and the other members of the 3D Visualisation Group currently at the University of Warwick will be taking up new posts. This offers hope of new synergies and opportunities for *Didaskalia*, not least a change in the way in which activities such as editing an e-journal are viewed and supported. The Centre for Computing in the Humanities is the largest unit of its kind in Europe, and hosts the UK's Arts and Humanities Data Service, and a major ICT Methods Network funded by the Arts and Humanities Research Council.

In addition, a number of members of the Editorial Board have committed substantial financial assistance to provide technical and administrative support for at least the next two years. Unlooked-for gestures such as these, whether of material resources, time or goodwill, enable us to view the future with confidence – I am deeply grateful.

Didaskalia owes a great debt of gratitude to the Open University, which has provided hardware, technical and administrative infrastructure, and sub-editing for *Didaskalia* since October 2003. I am grateful to Lorna Hardwick, Carol Gillespie and their colleagues at the OU for their vision and tenacity over the past year and a half. This invaluable period of stability has enabled the Journal and website to consolidate and to develop their resources in both quantity and quality. I am particularly saddened to be losing Carol Gillespie, who has been a wonderful traveling companion, and whose contribution to *Didaskalia* as sub-editor has been outstanding.

Volume 6 Issue 2: Contemporary Electronic Initiatives

This issue takes a snapshot of a tiny fraction of the computer-aided projects and initiatives that are rapidly changing how we study ancient theatre in performance, and indeed how we create new antiquity-related artworks and events.

It also marks the launch of the first public version of ARCHES, a new database of visual resources supporting the study of antiquity, and ancient theatre in particular. In this issue, Mark Childs gives an account of the ARCHES Project, its rationale, and our hopes for future versions of the software.

Since the last issue was published, extensive additions have been made to the Visual Resources section of the Study Area, including digital reconstructions of the Odeon of Pericles, the Theatre at Epidaurus, Greek temporary stages, the Theatre of Pompey in Rome, and Roman temporary stages, and alternative versions of the Theatre of Dionysus at Athens.

The aim of inviting experts on the application of electronic resources to the study of ancient drama to write for *Didaskalia* has been to draw attention to significant examples of different types of approach, which include searchable text databases, online multimedia resources, documentary websites, advanced visualisations, and electronic communication hubs, and to encourage and assist the reception community to reflect upon the significance of these developments.

It is easy to make overblown claims for the transformative effects of the digital revolution - potential and realisation are two different creatures - but equally, it can be too easy to allow our daily exposure to digital technologies, and the aura of 'hype' surrounding them, to desensitise us to the pace at which that potential is expanding, and some of the genuinely visionary and important ways in which information and communication technologies (ICT) could be deployed to expand both our knowledge and creativity, and our very means of knowing and creating.

Digital communications have enabled virtual communities to spring into being across the globe, but in order to be sustainable, these communities need roots in compelling 'real-world' needs and desires. The substantial delays that have beset the publication of this issue, which have been a source of great frustration to contributors and editors alike, demonstrates that digital publication

is only as 'instantaneous' as the real people behind it allow. The challenge for us now is to consider how we, as individuals, project teams, research groups, clusters, and as a global community, can envision improved and new means of extending our knowledge and understanding. I hope that the present issue may contribute to this process of reflection and debate.

In Europe, three major research reception initiatives, at the Open University, in Oxford, and through a European-wide Network, have produced or are producing significant online databases which will be of inestimable value to the research community:

- Lorna Hardwick reviews the history of the Open University's project on the Reception of the Texts and Images of Ancient Greece, as it evolved from card index to online database, identifying issues of wider relevance to researchers in the Arts to which such enterprises give rise.
- Platon Mavromoustakos and Gregory Ioannides report on the European Network of Research and Documentation of Performances of Ancient Greek Drama, and its database.
- Amanda Wrigley describes, illustrates and evaluates the Database of Modern Performances of Ancient Drama at the University of Oxford.

Farther afield, Carl Mueller reviews the benefits to the classical theatre historian of The Perseus Digital Library. These projects are dramatically enlarging the scope and quality of resources available to the reception community, and as these contributors show, future developments will continue to extend our research capacity over the coming years.

In 'Remediating Dionysos', Tom Donegan discusses two important and thought-provoking uses of the Internet in recent years: The Lysistrata Project, turning the well-worn metaphor of the 'global village' into a reality, exploited the networking power of the Internet to create the largest theatrical event in world history, using Aristophanes' comedy as a rallying cry for protest against the impending war in Iraq. Playwright Charles ('Chuck') Mee, on the other hand, perceives that adaptation, his preferred artistic mode, is no less complicit in the fragmentation of 'authority' than the World-Wide Web, his chosen medium, in the process, producing a fascinating display of illuminating collisions between the two.

Two of the contributions, by Drew Baker and Martin Blazeby, discuss examples of applications of 3-dimensional visualisation to the study of the past by the 3D Visualisation Group at Warwick. The ARCHES project is one outgrowth of these initiatives, which are gaining increasing prominence in research, teaching and cultural heritage, and these articles give a glimpse into the workings of two other major 3D visualisation projects with which the group has been centrally involved: an ongoing research project into the first and greatest permanent theatre in Rome, the Theatre of Pompey, and a study of the visual evidence for Roman temporary stages in ancient wall paintings using digital 3D visualisations

Four articles then direct the theme towards digital initiatives that are impacting upon teaching and learning. The Theatron Project, an online resource containing extensive information and real-time navigable 3D digital reconstructions of 15 'milestone' stage-types and theatres in Western theatre history, is introduced by Project Co-ordinator Richard Beacham, supplemented by an extensive Guide for Teachers by Peter Eversmann.

Then, in order to assess the importance and value to teachers of digital educational resources relating to ancient drama in teaching contexts, I asked Craig Morrison to review a number of such resources, including those created by our own research group. The result is an article jointly-authored article with Monty McKeand: 'Classrooms & Theatres / Learners & Spaces.'

Finally, a different approach to visualisation, using photographic panoramas to create 'virtual tours' of historic theatres is described here by its creator, Tom Hines. The Theatre Tours site is an impressive, invaluable, and beautifully presented resource, drawing upon 'over seven thousand high-resolution photographs of thirty-nine historic theatres'.

Such projects are all the more striking when we consider that the first 'world wide web' page was created as recently as 1990, with the first major public web browser, Netscape 0.9, released in 1994 (followed by Internet Explorer 1.0 in 1995). Traditional ideas of 'authoritative' or 'definitive' scholarship are challenged by more than theories of postmodernism - the proliferation of digital content makes it inconceivable that we even can know about, much less master, all that has been said on a topic. The very notions of memory and remembering are undergoing a change as we increasingly use computers as prosthetic mental repositories, and corresponding changes are to be seen in the practice and definition of cultural remembering, which is to say, history.

Visualisation and Performance Documentation

Having explored, experimented with, and reflected upon numerous applications of computing to teaching and research in the Arts and Humanities for a little over ten years, I am convinced that visualisation technologies are now making, and will increasingly make, profound and far-reaching impacts upon the ways in which knowledge can be acquired, extended and conceived. In a recent article (abridged and adapted here by kind permission of its original editor), I argued that this may, in the first instance at least, be particularly true in the study and practice of theatrical performance.

Theatrical performance inscribes itself in space and time through sound and light, scenography and movement. So, while scholars of written texts enjoy the luxury of communicating their research through the same medium as the thing they study, those who seek to write about the form and meaning of performance forgo the very expressive elements that give performance its form and meaning. Words and pictures can evoke these in our imaginations, but can not bring them directly before our senses.

Performance documentation, however, is not constrained to textual and graphical depictions alone; using the term 'documentation' in its broadest sense as 'the accumulation, classification and dissemination of information' (OED 2nd Ed. 1989, Online Edition), other invaluable forms of documentation include audio and video recordings. In addition, Virtual Reality technologies are increasingly being used to simulate the constituent elements of performance. I believe that this latter development marks the beginning of a genuine revolution in the methods, theories and practice of performance history.

To understand why Virtual Reality (VR) simulations are such a significant departure, we need to examine their properties in relation to other forms of performance documentation. To this end, I propose a broad typology of documents, namely:

- Text** (play script, archival record, press or academic publication)
- Depictions** (painting, drawing, choreographical or musical notation)
- Recordings** (photograph, audio, film video)
- Simulations** (space, enactment, production)

For explanatory clarity, such a typology simplifies a more complex reality, omitting for instance hybrid forms of documentation such as video recordings that incorporate footage of paintings, or Virtual environments that incorporate photographic images, although by identifying the documentary types that they combine, even the properties of these may be more clearly understood.

The table below indicates how user-readers perceive the constituent elements of performance as mediated by each type of performance documentation. Note: *its purpose is not to show which types of information each form of documentation can represent*; in this case, text might emerge as among the most versatile and catholic forms of performance documentation which, as I have suggested, would be problematic. Rather, it shows how different types of performance documentation give user-readers a *direct, sensory experience* of those elements of performance—space, time, sound, lighting, scenography and movement—that are experienced, directly and sensorily, by an audience.

	Document	Space	Time	Sound	Lighting	Scenography	Movement
Texts	Playscript						
	Archival record						
	Publication						
Depictions	Musical notation						
	Choreographical notation						
	Painting / drawing						
Recordings	Photograph						
	Audio						
	Film / Video						
Simulations	Space (S)						
	Enactment (E)						
	Production (S + E)						

Seen in these terms, text and notation are the most 'abstract' forms of documentation: a play script, or textual depiction may evoke a performance's use of space, time, and sound, but it can not offer readers an immediate *experience* of how these elements were used in performance. Likewise, although musical notation depicts sound in printed form, it does not directly reproduce that sound in the ears of its beholders, nor the temporal experience of hearing the score performed.

By contrast, although a painting lacks a performance's elements of durational time, sound and movement, it can nonetheless provide a sensory experience that may correspond to aspects of how spectators visually perceive a performance. That painting and photography employ different technologies, and differ in their 'status' as documentary evidence, is indicated by their location within different categories of documentation: 'depictions' and 'recordings' respectively. Recordings mediate more directly than depictions between performance and user-readers of the 'document'. While the experience of spectatorship is likely to be quite different, film and video are nevertheless capable of giving viewers an experience of the performance that draws upon the senses in a way that is not unlike the way in which a performance draws upon the senses of its audience. However, the table also shows that both painting and photography address the visual senses of their viewers in broadly the same way.

As an instrument of theatre-historical documentation, however, even recordings have severe limits. For instance, they are constrained to those places and performances that coincided with the availability of recording technologies, and the opportunity and willingness to use them. Consequently, the history of theatre during the two-and-a-half millennia predating the invention of technologies for recording sound, and static or moving images has to rely on older forms of documentation. Nor can we choose retrospectively to train microphones and cameras on performances that only years later come to be of interest to the historian.

As for simulations, a spatial simulation (S) might consist of an actual, full-size recreation of a place of performance, such as Shakespeare's Globe on London's South Bank, or a physical miniature, or a digital model. In each case, the senses required to perceive the place of performance are similarly employed in perceiving the 'document.' When a spatial simulation is conjoined with a real or Virtual enactment (E) that reconstructs one or more aspects of a past, style or tradition, the result (S + E) is a complete production, a new type of documentation that provides a striking degree of sensory consistency with its object.

More striking still is the possibility that such simulations might also require us to redefine the very boundaries of 'documentation' itself. 'Documentation' as we currently think of it, presumes the pre-existence of information that is to be accumulated, classified and disseminated. Simulation does not: the making and exploiting of a simulation, whether real or Virtual, not only accumulates and disseminates information, it may actually *produce* information. Simulations, by synthesizing vast and diverse sets of information, almost invariably allow us to perceive previously invisible relationships.

Simulations are necessarily at one further remove from what they document than are recordings, and constitute 'objects', 'spaces' and 'performances' in their own right; rather like translations or adaptations of prior plays, the creative and interpretative trajectories of simulations also deserve and require critical attention. At the same time, three-dimensional simulations of spaces can also augment photographic documentation by pasting or projecting photographs onto three-dimensional architecture, thereby synthesizing recorded with simulated information. Simulations can thus enable viewers to experience other types of documentation in more dimensions than previously possible. Consequently, subjecting two-dimensional sources to three- and four-dimensional examination very frequently reveals errors and *lacunae*.

Once a space has been simulated, viewers can enter it and walk around it, acquiring a completeness of sensory experience of the space otherwise impossible to acquire. When a research process organizes its resources, methods and questions around the creation of a three- or four-dimensional object or event (rather than, say, a printed text), a different kind of engagement with the object of study is attained. It is a quality of attention to the material and dynamic properties of the performance, not unlike the thorough and in-depth attention that a translator gives to a text. As an intervention in the field of human representations, simulation involves a no less theoretically or technically complex set of cultural and representational transactions.

It is no exaggeration to say that, through simulation, we not only see things anew; we also acquire new ways of seeing and knowing. Less directly, the expertise required to create historical spatial simulations and historically-based enactments exceeds the knowledge and skills of any one scholar. Simulation-based research must therefore always be multi-partner, and interdisciplinary, intensifying the exchange, cross-fertilization and creation of knowledge.

While useful in its own way, a two-dimensional table such as the above can not hope adequately to triangulate the immensely complex and varied interrelations between performance, documentation, and reader-response, or to chart the kinaesthetic and sensory dimensions of spectatorship or stage-spectator interaction. One such instance is the difference between real and Virtual simulations. On the face of it, real reconstructions of historical performances and places of performance ought to be the form of

'documentation' that provides the closest sensory analogue to its object. Above all, there can be no substitute for simply being there; for many, the immediacy and unrepeatability of a live performance, and the intensity of spectatorship experience that this produces, is the very essence of performance. Simulation, with real spaces and bodies alone can claim to overcome the cardinal limitation of documentation with which we began.

It comes at a cost, however, both financial and functional. Few can afford physically to reconstruct a lost theatre or the trappings of performance. And, once created, it is difficult to modify a physical space in the light of changing evidence or emerging scholarly consensus. Nor can a real production easily explore all conflicting interpretations of the historical evidence. For a 'real' production to survive as an historical source, other forms of documentation such as text, photography, and film, must be brought to bear upon it, with their attendant conventions and limitations. And once the record is set, no further changes can be made after the fact. What a real simulation gains as performance, it sacrifices in efficacy as a form of historical documentation.

For these reasons and others, Virtual Reality technologies often offer more affordable and flexible alternatives to 'real' reconstructions of historical performances and places of performance. Virtual spaces and performances can readily be modified, juxtaposed with alternative hypotheses. Virtual spaces can be distributed worldwide, simultaneously and collectively experienced by users separated by real space. Virtual space can also be a kind of 'hyperspace' – the spatial, superceding the textual, metaphor – transporting the user to a potentially infinite galaxy of virtual spaces, or from four-dimensional space-time back to the two-dimensional world of hypertext. In hyperspace, information and structure are integrated in ways of which reality can only dream: places and performances become portals through which rich documentary and interpretative content flows, incorporating texts, depictions, recordings and simulations. Virtual Reality's capacity to collate, synthesize and enhance all other types of documentation that have gone before makes it into a form of 'Ur-documentation'.

In *Avatars of the Word*, James J. O'Donnell reminds us of Marshall McLuhan's claim that 'the content of a new medium of communication is always imagined in another older medium'. O'Donnell elaborates: 'it takes several generations to get past the point of depending on the old medium for a way to think about the new and to get to the point of exploring the new medium in its own right' (1998, 42). Consequently, no first generation of a major information technology transition, such as we are currently undergoing, can possibly force or predict its trajectory of influence – such paradigm shifts are too monumental to be contained within existing models of 'how things work', or even of 'how things could work'. Having said that, as Toph Marshall has reminded me, information technology generations now succeed each other every four or five years, posing unprecedented learning challenges and opportunities to the much more slowly revolving human generations.

Recent years have seen the development of different types of electronic games and game-like environments, including:

- Massively Multi-player On-line Role-Playing Games (MMORPGs)
- Shared Virtual Reality Environments (non-competitive Virtual Worlds)
- Alternative Reality Games (games that blend real-world and Virtual world activities)
- Educational Games (applications of gaming technologies for educational purposes)

MMORPGs, which began to become widely available in the mid-1990s, and Shared Virtual Reality Environments now boast an extraordinary diversity and quality of content and functionality, while running easily on today's 'entry-level' computers. Typically, subscribers begin their virtual lives by customising the appearance (and often aptitudes and characteristics) of their avatar (virtual person), through which they will interact with and within the world. Once online, they encounter a virtual environment inhabited by tens of thousands of other users, with whom they can speak, compete with, collaborate on tasks, conduct business, or form relationships. The three-dimensionality and interactivity of these virtual environments, together with the invitation, through avatar-based interaction, to perceive and experience the virtual environment in a way that is highly analogous to aspects of 'real-world' sense-perception, creates a highly compelling—for many, troublingly addictive—alternative to reality. Such changes in cognitive processes have epistemological implications to which syllabi and research questions and methods must quickly respond if we are to provide education adequate to our students' needs, or adequately to equip new generations of teachers and researchers.

The subscribers of MMORPGs, Educational Games, Alternative Reality Games and Shared Virtual Reality Environments (non-competitive Virtual Worlds) are now counted in millions. An OECD report published just a few weeks ago observes that EverQuest, one of the three most popular Virtual Worlds today, generates monthly revenues of EUR 8-9 million (Beinisch *et al.* 2005, 8). The largest MMORPG, a Korean version of a game called Lineage by NCSOFT, has 4 million players, hundreds of thousands of whom spend as much time each week in the online gaming environments as they do at work or attending school or college, contributing to annual revenues of \$1.34 billion generated by the online gaming industry in 2003 (Beinisch *et al.* 2005, 7 & 22). Virtual money exchanges hands both for 'in-world' products and services, and for 'real-world' money through ancillary

websites. In December 2004, one investor paid US\$26,500 for a piece of digital land in Project Entropia, and in a study published as early as 2001, economist Edward Castronova observed that the GNP per capita of a Virtual World called Norrath 'easily exceeds that of dozens of countries, including India and China.' (Castronova 2001, 4).

Gaming technologies and their economies are driving important social and cultural changes that research and education communities can not afford to ignore. Non-competitive Shared Virtual Reality Environments, such as Second Life and Project Entropia, are particularly suggestive in this respect. In Second Life, for instance, I have visited historical reconstructions of Art Deco public buildings, fascinating investigations of sense perception involving disorientating distortions of scale, and a simulation by the University of Kansas allowing users to experience through their avatars the symptoms of paranoid schizophrenia. Within a couple of weeks, my guide had caused a virtual reconstruction of the Theatre of Dionysos to be constructed, which up to 50 avatars could visit at any one time and in which virtual performances, complete with masks, costumes, music, dance and gesture, could be created by self-taught home users. The pedagogical applications appear to be boundless, so it is not surprising that a number of universities have begun to acquire virtual land to teach and conduct experiments across a number of disciplines.

The creation of historical narratives is performative inasmuch as it makes 'the past' present, so that there is an elegant symmetry between the object and nature of our study; that is, between historically-informed performance and the performativity of historiography. Or, to put it differently, as acts of cultural remembering, antiquity-related performance and the writing of histories are both to a significant degree reworkings, adaptations, versions and translations of traces of the past. A further symmetry is now emerging between the virtual worlds that are created by the art of the theatre, and those now burgeoning across global digital matrices. Whether our primary concern is to further our knowledge and understanding of drama in antiquity, or of the influence of ancient drama upon the theatre and performance of later ages, or of how we might allow present performances to be informed by those of the past, we now have more widely affordable, accessible and flexible means at our disposal to think and work spatially and dynamically as well as textually and statically and, in addition to the more traditional modes of solitary and disciplinary research, to develop our models of interactive and interdisciplinary enquiry. Semantic symmetries between history and performance are now beginning to converge in practice: within digital domains, historians are performing as well as writing histories, while artists are finding new means of travelling through time and space.

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