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The Antaeus Column*:
Digital libraries and the future of the library profession.

* The title of the 'Antaeus' column derives from the name of the mythical giant, Antaeus or Antaios. The son of Gaia (whose name means 'land' or 'earth'), Antaeus was undefeatable in combat so long as he remained in contact with the earth. Once grounded by contact with the soil, he vanquished all opponents. However, in order to disempower Antaeus, Heracles simply lifted him from the earth, overcoming him totally. Thus, many times through the centuries, Antaeus has been used as a symbolic figure showing how any human aspiration must remain grounded in order to succeed. LIS research must therefore retain its contact with the 'ground' of everyday practice in order to fulfil its potential as a sophisticated research discipline – it must remain empowered by its relevance to practitioners.

Digital libraries and the future of the library profession.

Abstract

Purpose of this paper	To argue that unique contemporary cultural shifts are leading to a new form of librarianship that can be characterised as 'postmodern' in nature, and that this form of professional specialism will be increasingly influential in the decades to come.
Design/methodology/approach	A theoretical piece based on ideas from cultural history.
Findings	That postmodern LIS concepts will be a vital new strand to professional practice, but they will most likely subsist alongside more familiar concepts of practice which have proved readily applicable in the early years of 'first wave' web technologies.
Research limitations/ Implications	These are purely conceptual approaches to library and information science and need to be investigated evidentially.
Practical implications	The change from 'first wave' web technologies to Web 2.0 information technologies may have a greater impact on future techniques in digital librarianship than the change from print to the first electronic libraries in the 1990's.
What is original/value of the paper?	This library and information science paper is distinctive in that it borrows original ideas from the Humanities to offer an understanding of LIS practice in the context of broad 'cultural theory', rather than in the narrower context of change in mechanical and technological processes.

Paper type: Conceptual paper

Keywords: Libraries; librarianship; information services; history; postmodernism.

Note: This paper is based on a presentation given at (HATII) the Humanities Advanced Technology And Information Institute at the University of Glasgow, Scotland, on October 3rd 2006.

Introduction

Library and information science (LIS) practitioners are often asked whether the advent of digital library technologies threatens their professional existence. The weary librarian may well find it difficult to respond politely – faced with their users' implacable demands for greater traditional book provision, as well as the technical complexities of satisfying those same users' needs for electronic databases or digital full text on top of print, the thought of being thrust into early retirement by a complete automation of library services seems too good to be true. The easiest response is, 'bring it on – and sooner rather than later!'

Nevertheless, it's worth pausing in the midst of our fantasy of welcome, imminent redundancy to contemplate the nature of this perceived threat from digital technology. We can then perhaps respond more intelligently to vague guesses about the future of the profession from superficially engaged outsiders.

The Librarian as failed computer

The essence of the layman's perception of librarians is to see us as 'failed computers'. In this dismissive vision of the librarian, what we do is essentially mechanical, and as the mechanics of information technology get better, so are the skills of traditional librarians rendered ever more unnecessary. One day "it'll all be on the 'net' " and the librarians will all be down at the dole office, alongside the lamp-lighters, draymen and blacksmiths.

Thus far, however, there is no such sign of complete and total revolution. Print library resources are still popular while digital library services are in escalating demand (Joint, 2004). And these newer services need to be supported by LIS professionals with specialised digital library skills.

This is not to deny that there is an ebb and flow in the librarian labour market – for example, there are today many fewer print-based company libraries employing traditional special librarians. But in compensation there are now new posts for systems librarians, company information managers and knowledge management gurus, all roles in which LIS practitioners can and do thrive.

So the idea that 'When computers succeed, librarians must fail' is nonsense. Librarians are not failed computers. There are certain key components that remain in place in both the traditional library and digital library environment, which in turn means that the LIS profession has evolved across the print-digital divide to deal with those constant, ongoing features in today's changed, largely hybrid information environment. These constants can be briefly described as follows:

- Regardless of format, information objects (books, journals, web pages, pdfs) do exist.
- They are describable.
- They are collectable and must be put into ordered collections.
- They are preservable and need to be preserved to maintain the continuity of knowledge.
- These features make the library accessible.

Cultural change versus technological change

So the advent of digital technologies has helped reinvent the profession, not render it out of date. However, there is another way of looking at the nature of the digital

library which is in fact more challenging to the values of the profession than the argument that technical advances supersede human skills.

This view challenges us to think of the contemporary information revolution in cultural terms rather than technological terms. If we think back to the previous information revolution, when printed text displaced the manuscript, then the economics of 'the information industry' did see a great deal of labour market displacement. However, had the 'Financial Times' run a Renaissance edition, it would have said that employment levels in the information industry remained high, with opportunities in moveable type printing mopping up structural unemployment in the labour market for manuscript clerks. So in a sense, one form of human impact of a revolutionary, but purely technical change, was rather limited.

By contrast, the higher level impact of changed information technology on Medieval-Renaissance culture was seismic. Megabytes of profound textual analysis have charted the way in which wider access to the printed Bible in more readily available translations meant that the faithful individual could decide their theology for themselves, in a direct personal dialogue with God which was firmly Biblical in its authority.

This is not the place to provide a brief chronicle of the rise of print, Protestantism and the birth of capitalism. But a simplistic rehearsal of the commonplaces of Medieval-Renaissance history does give a hint of how to view contemporary digital library change. That is, not as a change in mechanical and technological processes, but as a fundamental change in social beliefs, viewed in terms of both cultural theory and cultural practices.

Change management
It is a truism to state that technological change makes new things possible and old things no longer possible. The more difficult challenge is to make value judgements about the nature of these changes, saying whether what is lost was better than what replaces it, and vice versa. A devout Roman Catholic theocrat living during the Counter Reformation will probably have viewed new information technology as a failure in religious-human terms, while grudgingly acknowledging its success in narrowly technical terms. The most important judgement remains human and cultural. If one believes that a technological improvement has led to the splintering of the true Church and the wider prevalence of sin, then one must believe that that new technology has failed in every important sense.

The next step in this argument is thus to challenge the rather complacent and self-congratulatory view of the digital librarian who sees their successful creation of a new digital library in the image of the old print library, as a triumph of change management. By contrast, in many ways such 'facsimile' digital libraries are merely reincarnations of old media, repressing the intrinsic nature of new digital media in order to make change manageable. In this vision of IT change, digital librarians are like effective Counter Reformation Jesuits, with Cranmer's Prayer Book unprinted and unpublished, and Henry Tudor still happily undivorced. But we have to ask, for how much longer is such a status quo preservable?

The interim digital library
This school of thought sees the contemporary digital library as just an interim creation of 'first wave' internet technologies, not as a finished demonstration of what developed digital technologies can and soon will offer us. Examples of the typical

interim digital library are reproduced below (see Appendix) – each is a collection of services that are closely modelled on the traditional print library. The bibliographic forms are the same (books and journals): they just have an "e-" in front of them. The tools used to find them are the same (catalogues): they just have the word "online" in front of them. Some things are significantly different: although each textual document has a classification number, this does not mechanise the retrieval of the text – you don't have to go to a shelf location to find the information object. The object is pulled through the hyperlink onto the screen. So it's 'the same old same old', but faster. However, we really move back to the past when we see the full text on the screen – it's more often than not a pdf, an exact facsimile of the print original, like a fly preserved in amber.

The cultural theorists who criticise this interim digital library model point out that the use of print library devices for a non-print medium service is hardly designed to extract the maximum value inherent in the new medium. Digital information is not the same as print information – initially it's quite helpful to *pretend* that it is, because the two can be seen as similar and we can familiarise ourselves with the new by reusing old models. But similar is not the same – and the most interesting aspects of any new technology are the aspects which are dissimilar from what went before.

So the cultural critics of the interim digital library see it as a based on a metaphor derived from past models of information use, a metaphor applied slavishly and literally to make a new medium usable in its early days. It is like the first television news broadcasts, which consisted of a single talking head in a dinner suit gazing fixedly into a camera, reading a script. These programmes were reusing the mental image of what a radio broadcast was – a voice reading into a microphone. After a while it became clear that a radio broadcast was not literally the same as a television news broadcast. Having thrown off the inherent limitations of the radio metaphor, the way was open to achieve the visual cornucopia of a present-day news broadcast, in which the talking head serves merely as punctuation to the totality of the information flow.

In the eyes of cultural theorists, this aspect of the 'provisionality' of the interim digital library is quite forgivable. None of us is clever enough immediately to understand the new on its own terms, and it's practical to use old notions to make initial sense of new things. However, what is less forgivable is when conservative professions insist on limited implementations of new technologies because to exceed these limitations would in some way loosen their control of an established and entrenched situation.

So, in this critique, the commercial publisher and digital librarian act in an unholy alliance to keep the digital library model close to the print library model. Traditional information objects must be continued because they are discrete, ownable and tradeable: the article, the chapter, the journal, the book. If necessary, digital rights management software should be added to keep the usability of the information object exactly in line with the usability of the traditional print information object. Again, there are good reasons for this. In the post-manufacturing knowledge economy, a fair return for one's intellectual property has never been more important, or ethically justifiable, even though IP may now be largely virtual in nature.

However, in rendering the virtual overly concrete, those who trade in information get control over their wares in such a way that the fundamental nature of the

information object is constrained. Similarly, librarians see an information object that exists just as previous objects have done, that is describable just like previous objects, and that is storable and preservable in the same way too. Or so we think.

The Five theses of Loughborough?
It seems as if the interim digital library may be nearing its 'Martin Luther' moment, the moment when someone nails a set of theses in protest to a virtual door, in order to overturn the conservative premises underlying digital library services. It's quite likely in fact that a number of us are undergoing our own mini-Martin Luther moments at present.

In the Summer of 2006, a workshop at the eLit conference in Loughborough on the cultural impact of mobile communication technologies, led by John Traxler of Wolverhampton University had a few such moments (Traxler, 2006). Much of the workshop was concerned with the enumeration of the new educational and social benefits of mobile technologies, but the librarians amongst the workshop were quick to point out the downsides. Undoubtedly the take-up of mobile communication devices has led to new forms of group identity, new types of social knowledge being constructed, and in a university context, could create an ideal constructivist learning environment with few of the formal constraints of traditional, physical learning spaces.

The problem for the librarians at the workshop was that this new, socially constructed learning didn't look much like a traditional short loan collection. And we made it clear that this wasn't just a problem for the librarians faced by rows of empty short loan shelves – in what sense did these new socially dynamic learning environments create knowledge that was usable as a sequence of discrete objects, which could be described, contained and preserved? The idea behind this librarian challenge was not simply to say, 'What do we do with these learning environments?', but also to say, 'What do you, the information producers and users, do in terms of accessing learning materials when you create but do not describe, contain and control the outputs of such environments?'

So, the librarians present wished to emphasise to the mobile technologists the dangers of losing certain key traditional strengths of our academic culture: the storing, continuity and shareability of learnt knowledge. Unfortunately for the librarians, the cultural theorists of mobile educational technology were not worried:

> 'In a postmodern culture, the grand continuous sequence of a single, monolithic narrative of knowledge and learning may simply be lost. Or it may not. Just don't worry about it too much. We'll have to see.'

This was followed by a perplexed silence from the librarians in the workshop.

The new digital library
To sum up therefore, the proponents of a new digital order radically at variance with the old print-based order would say that the five definitive features of the new model are as follows:

- There are no traditional information objects on the internet with determinate formats or determinate qualities: the only information object and information format on the internet is 'ephemera'.
- The only map of the internet is the internet itself, it cannot be described.

- A hypertext collection cannot be selectively collected because each information object is infinite and infinity cannot be contained.
- The problem of digital preservation is like climate change: it is man-made and irreversible, and means that much digital data is ephemeral; but unlike climate change, it is not necessarily catastrophic.
- Thus, there is no such thing as a traditional library in a postmodern world. Postmodern information sets are just as accessible as traditional libraries, but without possessing any of the traditional features of a library: there are no formats, no descriptions, no hope of collection management, no realistic possibility of preservation. And they work fine.

What evidence leads some thinkers to this very extreme view of the digital information order? There must be compelling reasons to dismiss so much digital library provision as no more than temporary and based on nostalgic, derivative print library models? Here is a summary of this case against tradition and the traditional role of the librarian, as enunciated by an imagined single voice threading together the postmodern arguments of the eLit2006 workshop:

The impossibility of formats
"Firstly, the application of bibliographic formats to digital resources doesn't really work. Certainly, a pdf facsimile of an original can be described in those terms, but users don't like pdfs. Wherever an alternative choice of pdf and html is given for a full text download, statistics show that users prefer the html. Pdfs are too big to be easily usable, and most of their cumbersome size is caused by the need to replicate the print original. Html is better compressed, and doesn't look like a print original. It hints at the real nature of the web, as something free from constraint by print equivalents.

"Furthermore, most bibliographic format types are metaphors, not literal format types. The very term, 'web page' is a metaphor. A page is a determinate physical thing, with each page in a book being like every other page. A web page can be any size you like, even within the same web site. Moreover, apart from not having a set physical extent, it doesn't have a set informational content either. It's hypertextual, so its content invokes the content of other pages, which become part of the same page. In that sense the whole internet is a single information object with a single page. What sort of bibliographic format analysis can subdivide it? Only one which distorts the nature of the object it analyses. Not much of an analysis then, is it?

"Bibliographic format descriptions also rely on information objects having qualities. Most set qualities in a web page don't tell you anything very useful. The quantitative descriptive data such as print pagination and size don't have equivalents. A web site can be subdivided into varying page numbers, but knowing the number of them doesn't help you grasp the nature of the site or help you manage the containment or preservation of the site (how many pages are there in a database-driven web site? Who cares?). Even the quantity of bytes of a digital information object's file size are of questionable value – you can recompress the file a number of times over for whatever technical reason, thus changing its file size totally, and it may or may not affect the value of the object as an information resource, although a data storage manager might be grateful for knowing such facts about the data.

"The impossibility of bibliographic description
"When you try and shoe-horn aspects of a digital information object into the ISBD-type standard of a metadata format, things start going wrong. Look what happens

when you try and catalogue, say, the BBC web site in terms of MARC fields like 100/author, 245/title, 260/publisher? Well, the author of the whole site has to be the BBC, since web pages can be effectively anonymous at the page level. What does text enclosed by the title tags in the head of the home page say? The title is 'The BBC'. Ok, well let's add the publisher details – it looks like the BBC published it too. So you have three distinct fields each with the same indistinguishable metadata content in it. In what sense is that creating a usable and informative catalogue record? Not all the web sites you want to describe are as difficult as this, but cataloguing standards have to fit everything or nothing – you cannot have a store of information where some content is catalogued *rather meaninglessly* and other data is catalogued broadly in line with traditional norms.

"The impossibility of collection management
"The highest level of collection management is the legal deposit collection of a national library service. It is at this level that the commitment of a national culture to the comprehensive aggregation of the totality of its information objects has to be measured. However, the digital national output of any country that flows onto the internet is beyond comprehensive collection, for a number of reasons. At any one time, the mass of information defies collection, so that a representative sample has to be taken. And even within that representative sample, the constant changing and updating of a web site means that it can only be sampled across time at representative intervals.

"So it's quite possible that the wrong material will be selected, material that is not truly representative of the state of the national internet at the time. And the selective nature of snap-shots through time also leads to distortion. The idea of a subjectively selective national electronic deposit collection is at variance with the entire tradition of objective, comprehensive legal deposit collections.

"Above all, hypertext cannot be selectively stored. Each hyperlink refers to other material which has to be archived with the referring material - otherwise you end up with a comprehensive collection of 'linkrot'. The only selective hypertextual collection which will make sense through time is one which includes and maintains all the hypertext in the world.

"The impossibility of digital preservation
Even if one could collect the whole internet, could one preserve it? The story to date of digital preservation is not optimistic. Think of the hubristic creation of the BBC's Domesday Book video disks towards the end of the Twentieth Century (B.B.C., 2002). These video disks attempted to do for the present what William the Conqueror's records of his newly acquired kingdom did for the 11th century, create a comprehensive picture of life in the UK, but one that would last longer than the thousand years of the Anglo-Norman original.

"However, these BBC disks were to digital preservation what the Titanic was to maritime engineering. Just as the unsinkable ship sank on its maiden voyage, so did the ultimate digital account of the British nation expire with the outmoded technology that supported it. The lifespan in years of these disks never even made it into double figures.

"If one thinks of the small number of successfully preserved digital objects that have survived since the first genuinely useful, mass market digital services were offered on mainframe computers in the 1960s, then the size of the challenge becomes plain.

Items such as Medline (that is, Index Medicus transformed into a digital object) have survived as large, distinct information entities with an unbroken thread of digital content that means the same as it did when first created. The costs that have been ploughed into the reinvention of platforms for such databases are quite staggering. It would be prohibitive for such resources to be spent on anything other than a few core digital collections that really defined our history and culture."

Modernism and postmodernism
So where does that leave us with the future of librarianship?

The idea of the postmodern digital library is clearly very different from the interim digital library. It takes many of the problems that threaten the cohesion of the interim digital library and says that these are not problems, they are evidence of a change in the nature of our culture, which is based on technologies which simply facilitate cultural activity in a different way. The mistake is to try and make these new cultural outputs look like the old ones. If we do try and make the new resemble the old, we will be missing the point.

The interim digital library thus bears the same relationship to the open digital networks of the internet that modernist culture does to postmodern culture. Modernist culture was and is 'dual' in nature: on the one hand it is apparently radical, but on the other it remains deeply conservative and ordered under its shocking veneer. Its surface reflects contemporary chaos, but its deeper structure unifies and orders the fragmentation. Definitive modernist works such as Joyce's 'Ulysses', T.S. Eliot's 'The Waste Land', or Schoenberg's discordant piano pieces, all created an impression of the ultra-avant-garde, while cherishing a deeper structure based on wholly traditional principles ('Ulysses' uses Classical mythology, 'The Waste Land' sacramental Christian grail myths, and Schoenberg's harmonic rigour is entirely derived from Haydn and Mozart). Modernism wasn't that modern at all really, despite its apparent claim to be a totally new departure from previous cultural forms.

Similarly, the modernness of the interim digital library isn't that cutting edge at all really. Under its avant-garde electronic veneer lie the ordering principles of the print library, despite claims that its digital formats are a radically new information type. The true digital library will be a postmodern library, one in which what you see is what you get: a consistent acceptance of small scale, inoffensively unordered forms, without cumbersome big structures. The true nature of the postmodern information order is even now not clear to us, but it seems to be the dynamic behind phenomena such as Web 2.0, in which interactive tools such as Skype, YouTube and MySpace* facilitate social networking, and the anarchic storage and unrestrained distribution of content, both legal and possibly illegal, predominate.

The new medievalism
One way of trying to characterise the nature of a postmodern information order is to see it as, in some ways, a return to a medieval, pre-renaissance model of cultural productivity and understanding. The title of Paul Maharg's work, " 'Borne back ceaselessly into the past': Glossa, hypertext and the future of legal education" (Maharg, 2006) makes the link between digital information technology and medieval educational technology explicit, albeit tentatively:

"If hypertext can seem to exemplify many aspects of the glossed literature of the thirteenth century, the analogy between medieval page and wireless web must surely be a tenuous one. And yet I am not sure that this is the case. "

Until the outlines of postmodern cultural forms become more distinct, the best one can do is suggest tenuous parallels. So it is important to be careful: the temptation to compare the pre-Renaissance and the postmodern may be caused by our desperation to find a previous period very different from our own that can give us insight into the new and equally distinct period that we are glimpsing on the horizon. The future and the past have always been seen as different from the present, but that hardly makes them equivalent.

So what real parallels can we suggest between the postmodern and the pre-Renaissance frame of mind?

If we are convinced of the impossibility of digital preservation, then the fact that we have a tenuous hold on our 'collections' creates a sense of insecurity and evanescence. The sense of the fragility of the world's glories and the imminent loss of earthly possessions at the Day of Judgement - including the disappearance of documented knowledge and any continuity of a text-based civilisation - seems both definitively medieval and representatively postmodern.

When evanescent, culture becomes geographically distinct as well as temporary. It isn't around long enough to become pervasive, but don't worry about that – the true postmodernist knows that 'localness' is everything. In just the same way, much medieval cultural output was intended for local consumption because the industrial technology to spread identical document *simulacra* of that output into a 'national market' did not exist. Having written music for use in one place, such as the local cathedral of his local archbishop, the medieval composer accepted that the audience for such divine composition was limited to the congregation and clergy.

Above all, culture was fundamentally oral and socially communicated: low levels of literacy and the cost of documents and texts meant that the closest the devout would come to the word of God was to hear it rather than to read it. Theology was sermonised and verbalised from the pulpit, then committed to memory. In such an oral culture, the definitiveness of the written text crumbles and each text becomes a unique entity, individually or socially recreated in the repeated act of consumption.

Perhaps this too is a feature of postmodern culture and learning. The argument that our media-based culture is essentially oral not written, and that the primacy of the written word is giving way to a new 'orality' – that is, to the speech of actors, presenters and broadcasters on screen rather than the sermonising of priests - creates some sort of clear parallel with the pre-Gutenberg era of oral Christian culture. The penetration of streaming video and web-casting into the educational sphere is simply a recognition of this cultural shift: if a new generation possesses greater media literacy than print literacy, such an evolution is not intrinsically anti-educational. Rather, it is a revival of the older cultural traditions which were remarkably enduring and successful. However, an essential aspect of such oral culture is that much of it is transitory, because of its undocumented nature.

The impact on LIS practice
If these ideas about a fundamental cultural shift are correct, then there have to be practical outcomes for those whose job it has been, for some hundreds of years, to

collect and organise the entire documented output of our culture. If the arguments above have some truth (though not necessarily complete validity) much of our professional efforts to impose a realist-modernist model on our library practice will fail.

Thus, attempts to create an electronic equivalent to print legal deposit will be doomed to failure in some fundamental sense. If electronic deposit is legally compulsory, then the national electronic library will face unsolvable conundrums such as those listed above under the section 'the impossibility of collection management'. These can be put into very specific detail. For example, for a virtual national deposit system to work well there must be a law of electronic legal deposit. Such a law must be in harmony with existing copyright law, and, in the UK, must conform to the demands of moral rights legislation, which says that the integrity of the original must be preserved.

For the integrity of an original web site to be preserved, the hyperlinks must be preserved. But to preserve the hyperlinks accurately, the whole web of links which the original web site invokes must be preserved, which, we have noted, is an infinitely expanding practical impossibility. So the integrity of the original must be sacrificed in order to give the future some idea of what the documented digital past was like. This clearly breaches the moral rights of the author of the web site that is to be deposited.

But how can a law of compulsory legal deposit then compel the commissioning of illegal acts (breaches of moral rights)? A law of legal electronic deposit is then like a national law that compels citizens to drive faster than the legal speed limit or to smoke illegal drugs. It is self-contradictory and impossible, because it is an imposition of a form of LIS practice from an old model of cultural productivity onto a fundamentally new one, where knowledge is contingent, evolutionary and evasive. This old LIS model needs to be 're-theorised', just as Newtonian Physics had to evolve into Quantum Theory, in recognition of the fact that super-small particles simply weren't physically located where Newtonian Physics said they should be!

Even at the level of library design, there are lessons for us to learn in constructing new buildings against this background of cultural shift. If we accept that learning is increasingly socially constructed, then a library space that is a good learning space has to recognise this fact. So we have to think long and hard about what constitutes a good postmodern library architecture. The thinking behind a postmodern structure such as the Saltire Centre at Glasgow Caledonian University (Watson, 2006) gives us some good insights into the way the practical matter of library-learning-space can be handled in a contemporary University. We have to build library buildings that make sense in terms of statements such as:

"all learning is conversation"
"thinking is nothing but talking to yourself inside"
"the entire campus is an interactive, social learning (or research) device,"

all of which underline how postmodern academic discourse is both a literal and metaphorical return to a seemingly outdated form of oral culture.

And yet another outcome of this constructivist view of academia, is that the line between learning and research creatively blurs, because the student and researcher are both engaged in essentially the same act, the act of constructing their own

knowledge – the researcher simply constructs their knowledge at a different level of sophistication and originality. A building which facilitates this process may need less space for the containment of stock and more space for the act of learning – meaning that it may not be that much of a traditional library at all.

Conclusion
At a time of large scale change, it is reassuring to use big ideas to give 'total' explanations of where we are heading as a profession. However, reality is very unforgiving to big ideas, and tends to blunt their clean outlines with the hard edges of everyday fact.

So it would be foolhardy to abandon the cherished tenets of an established vocational mindset to charge off in pursuit of revolutionary new visions of professional practice. Nevertheless, the purist notion of a new form of culture, based on internet-based digital technologies, and quite different from what has preceded it is a powerful one, with important lessons for the way information professionals understand their present and future roles.

It is doubtful whether any of us is willing to accept the idea of a new culture that is based on the idea of perpetual amnesia. It may have been valid for a medieval craftsman to create beautiful finishes on cathedrals which the congregation could not see in the knowledge that only they and God could appreciate them. If all such artistry is transient and unknowable to the majority of humankind, then the fact that an all-seeing and all-knowing deity will appreciate and eternally preserve a transcendent memory of one's work is ample consolation (making divinity perhaps the ultimate virtual repository?)

However, the postmodern age is one denuded of such metaphysical beliefs, and the most important motivation for creativity and the generation of knowledge is human-centred: we create so that one's intellectual property can be appreciated by as many people as possible, This must also involve consumption by those who follow us, which in turn implies that the concept of social memory is indispensable. Human reception rather than divine reception matters above all (and heavenly rates of return on digital rights are distinctly too intangible for most of us!).

So if the biggest challenge for the future of the LIS profession is not the digital library that is a facsimile of the print, but the new digital order, with its social software, interactive networks, and free-wheeling attitude to storage and distribution of content, then we have a lot of thinking to do. For so much of the momentum behind virtual learning focuses on using such technologies in the service of traditional learning, we can hardly ignore what is going on before our very eyes.

The task for librarians is to acknowledge the academic significance of leaning environments such as Ardcalloch (Maharg, 2004), which create a virtual simulation of the world of legal practice in which knowledge is assembled through experience, but like a lawyer's day to day experience can be lost the moment the experience ceases. As one LIS analyst of postmodern information problems has said,

> "you need to have a strategy which is flexible … the postmodern world is a world of constant change. Resources can appear and disappear with frightening speed. Your strategy must be capable of equally rapid response."

So the modern librarian can rest assured of the place of their facsimile digital library for the time being, but we now have to look for volunteers to rise to the challenge of postmodern librarianship. Is anyone willing to step forward?

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Appendix.

Two interim facsimile digital libraries:
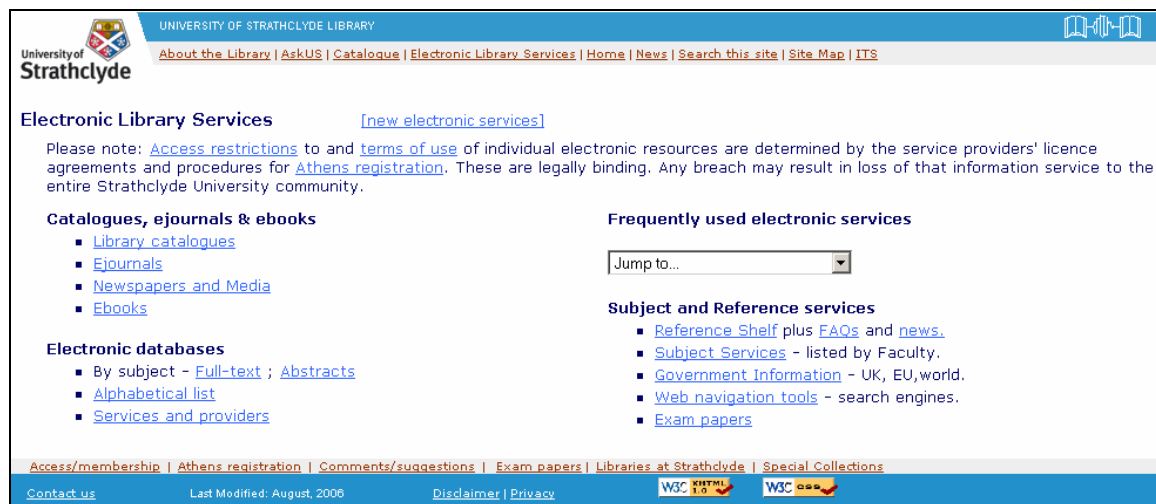
Fig. 1. Electronic Library Services < http://www.lib.strath.ac.uk/els.htm >

Fig. 2. Merlin < http://merlin.lib.gla.ac.uk/ >