Buried History

The Journal of the
Australian Institute of Archaeology

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Volume 42

2006

Editorial

We apologise for the delay in publishing this volume of *Buried History.* The good news is however that the next volume is already in preparation and will be produced before year end with amongst other papers, the 2006 Petrie Oration by Kathryn Eriksson.

This edition begins with the text of a lecture delivered at the Institute by Rosalind Janssen. Rosalind is an Egyptologist who has formally studied Gerontology, the study of ageing. As a result of this background, Rosalind has some interesting re-interpretations of material. Ageing seems to become of interest to everyone eventually and on the night of the presentation questions continued for a considerable length of time. One of the reasons for re-establishing the Institute was to provide a place for retired people to remain active in the study of the ancient world.

The unpacking of the Institute's museum collection has given rise to many discoveries and one is described by Lisa Mawdsley. Lisa is a doctoral student at Monash University and a member of the International Potmark Workshop established by Edwin van den Brink. The identification of pot-marks draws us to the recognition of individual potters who laboured so long ago on mundane objects that we now treasure.

In previous editions we have appreciated the papers on Kellis and its virtual reality reconstruction by the Centre for Archaeology & Ancient History, School of Historical Studies, and the Faculty of Information Technology, Monash University. This paper has an accompanying website that can be accessed to explore the reconstruction described in the text. No excavation today can be reported without an attempt to visualise the place as it once was. This process is a discipline that all excavators now must embrace.

Scott Charlesworth breaks the Egyptology theme by discussing Christian manuscript practices. While his subject may continue to promote some controversy, we are pleased to have been able to support Scott's work and to publish this interesting and detailed paper.

Rupert Mann's essay on the cartonnage of the Institute's mummy was originally prepared as an undergraduate thesis. It has a number of interesting and useful observations and is accompanied by recently taken professional photographs. Rupert will not develop the subject further and in the context of undergraduate study was limited by the comparative material he had available. We thank those who have commented on his work and we include it as a student essay to assist those who may take up the subject in future.

Lamia al-Gailani Werr has honoured us with a review of Magnus Bernhardsson's recent book about the significance of archaeology in Iraq. Lamia worked in the Baghdad Museum as a young archaeologist and returned there after the looting as a consultant. She now advises UNESCO on matters relating to heritage in Iraq.

We acknowledge the work of our reviewers and thank them for their constructive comments.

Christopher Davey

The Old Women of Deir el-Medina

Rosalind Janssen

Dedicated to Richard, Jessica, and Rosalind who sat in the audience

Abstract: Older women – those aged over thirty – constituted a distinct age group at the 'middle class' workmen's village of Deir el-Medina. Drawing on the rich textual material from the site, and placing it alongside gerontological theory, will enable us to consider and evaluate such aspects as demography, transferable women's pensions, disinheriting one's ungrateful children, the Wise Woman, and the worship of female ancestors. Being a woman and old at New Kingdom Deir el-Medina implied considerable rights, freedom, and even an authoritative status. This picture is in remarkable contrast to the 'double jeopardy' which sociologists tell us older women – the over fifties – are facing in today's society through sexism and ageism.

Ten years ago my husband and I wrote our *Getting old in Ancient Egypt* (Janssen and Janssen, 1996), without any knowledge of gerontological theory. Conscious of this glaring omission, which is about to be corrected in a new edition,[1] I decided to study for an MSc in Life Course Development at Birkbeck College, University of London. This degree focused on the sociological and psychological aspects of mid- and later life, while my dissertation demonstrated how the theoretical aspects of one discipline could be applied to the material of another one.

Figure 1: The hieroglyphs for old age showing a stooped elderly woman and man, each leaning on a staff for support.

The dissertation, submitted in 2002, focused on societal attitudes to old age at the unique 'middle class' village of Deir el-Medina on the west bank of Luxor (Figure 4). This New Kingdom community of c. 1300 BCE was home to skilled artisans who were decorating the Pharaohs' tombs in the Valley of the Kings, and those of members of the royal family in the Valley of the Queens.

With what McDowell (1999: 4) refers to as its at least 40% literacy rate, the settlement provides an extraordinary rich and unique textual archive: there are some 5,000 published ostraca (hieratic texts on potsherds or limestone flakes), with perhaps 10,000 or more unpublished. My aim was to test three sociological theories of historical ageing, each of which will be briefly summarized:

Modernization Theory

Over thirty years ago, the anthropologists Cowgill and Holmes (1972: 1-13) put forward the argument that the loss of status of older people in both the family and in society in general was a product of economic development following the Industrial Revolution. As such they reinforced the myth of a lost 'golden age of senescence', a romantic picture based on the notion of a previous respectful attitude towards old age in past societies, such as that promoted by Richardson (1933, republished 1969) for Ancient Greece.

Modernization theory has been highly influential and has been embraced by Egyptologists, notably Wessetsky (1972: 154-156) and Baines (1991: 123-200), both of whom envisage Ancient Egypt as a gerontocracy.

Revisionism Theory

The counterpart of modernization, revisionism theory can be summed up as seeing an "unmitigated progress towards retirement and the welfare state" (Troyansky, 1997: 49), implying that older people have never been as well provided for as they are today with modern health care and pension provision. Here is not the place to debate how far this holds true in 2007! As such, the 1990's have almost been envisaged by the revisionists as the utopia of a 'golden age of senescence' (Johnson, 1998: 211-225).

These two theories can be regarded as 'master narratives' of simple decline or progress, prominent for the last thirty years. The past decade, however, has seen the emergence of a third intermediary stance.

'Diversity' Theory

The inverted commas indicate that this represents my term since the theory has as yet no name. This school, dominated by the Australian historian Pat Thane and rapidly gaining

Figure 2: The British road sign for older people.

precedence, dismisses the notion of a 'golden age of senescence' as a myth (Johnson and Thane, 1998). Instead it sees the diversity of old age with a persistent ambivalence beginning in the art and literature of the ancient world (Thane, 2000; 2005). Such "co-existent competing conceptions" (Thane, 1995: 31) were based upon an older person's physical status, social class, and gender, i.e. *health, wealth*, and *gender*, and even their mental state (Thane, 2005). In our *Getting old in Ancient Egypt*, my husband and I unconsciously embraced this model, seeing "both attitudes … that of respect for elderly men and that of derision for the decaying body" (Janssen and Janssen, 1996: 9) as present in the written documents and in the artistic products.

Methodology

I applied these three macro-theories to the microcosm of Deir el-Medina. My aim was to ascertain the extent to which there was a 'golden age of senescence' in this village. What was the role of health, wealth, and gender, and the importance of chronological age?

An initial search of The Deir el-Medina Database of the University of Leiden[2] produced 62 hits. However, many of these were quickly rejected since they referred to 'old clothes' rather than to 'old people'! I therefore ended up drawing on approximately 50 texts which contained the word for 'old people'.

In order to triangulate my findings, as is essential in the social sciences, I used the vivid daily life sketches on ostraca (and papyri). These so-called figured ostraca were executed by the artisans in their moments of leisure. From some 1,500 published items, only a dozen instances were ultimately found useful.

The experience of old age as revealed by the texts and drawings ultimately supports the ambiguity of the 'diversity' school, since they reveal both respect and disdain for old age. Chronological age was the predominant factor in

determining diverse attitudes based upon individual *health* and *wealth*. As in Classical Antiquity, personality also played a role (Parkin, 2005). However, *gender* was decidedly less crucial, since, as we shall see, the old women of Deir el-Medina were surprisingly free.

My research therefore revealed that there was no 'golden age of senescence' at Deir el-Medina. Rather, the reality of old age varied greatly from individual to individual, as in contemporary society. The inference is that no historical society was absolute heaven or hell for its senior citizens.

Words for Old Age

Among several Egyptian words for old age, the most frequent is *i3w* determined by a bent man leaning on a stick. Significantly, in one case only – in the Mastaba of Ti at Saqqara[3] – do we see an old woman determinative. Whatever, it is of interest to compare these hieroglyphic determinatives for old age (Figure 1) with the modern British traffic sign (Figure 2). Showing older people crossing the road, this is normally placed close to residential homes and portrays old men and women as decidedly bent figures. The man, who is in front, leans heavily on his stick for support. This indicates that images of the decrepitude of old age have not really changed across the millennia. Perhaps the designers of this modern traffic sign, with its ageist "frail elderly" people titling in the *Highway Code*, even found their inspiration in these Ancient Egyptian hieroglyphs. By contrast, it was interesting to see that the equivalent Australian traffic sign is far more positive with its two upright figures – the woman here leading – both of whom seem to be walking at a brisk pace (Figure 3).

Figure 3: An Australian road sign for older people who it seems 'walk tall'. (North Stradbroke Island, Qld)

Figure 4: The northern end of the New Kingdom workmen's village of Deir el-Medina showing the remains of dwellings and streets (Photo: the editor 1976).

What is Old Age?

While the ideal lifetime was the Biblical 110 years, the actual life expectancy from birth in Pharaonic Egypt was probably more like the 22.5 for women and 24 for men estimated for Roman Egypt by Bagnall and Frier (1994) using census data. Toivari-Viitala (2001: 207) estimates a general 30 years life expectancy – crucially from age one. Her reasonable suggestion that this was old age is accepted by Sweeney (2006) in her own fundamental study.

This proposition is supported by Masali and Chiarelli's (1972) study of Dynastic Turin skeletons. This demonstrates a reduction of the adult population to one-half around the age of 30, and to one-quarter at the age of 43. Adult females up to age 30 had a higher mortality rate than males. This rate then becomes reversed, which means that the majority of the few people who reached 70 were women. At age 70 the male/female curves, representing a very low percentage of the population, cross each other again reversing the situation once more.

Life expectancies in Ancient Egypt differed in terms of *social class* and *gender*. The inhabitants of Deir el-Medina, as a comparatively well-off 'middle class' stood a better chance of reaching a relatively high age, and the men even a great old age, past 70. As Thane states in her editorial introduction to a recent fine compendium on the history of old age, it is a cliché to say that in earlier times people did not live to a great age (2005: 9-30).

Study of the mummies from Deir el-Medina provides some evidence: a female now in Prague was aged at between 50 and 60, whilst the wife of Sennudjem (Figure 5) was 75 (Toivari-Viitala, 2001: 206-207). Therefore old age was seen as a distinctive

stage in the life course and features as such in the Deir el-Medina documents.

An example is a text describing a mob which was attempting to beat a woman who had an adulterous affair with a married man:

> *Your people, their old and their young,*
> *both men and women.[4]*

This shows that older people were still actively taking part in the goings-on of daily life.

Further indications of old age – beyond the merely chronological – were women who had several (adult) children. Furthermore, the menopause – which occurred earlier than today – was linked by both men and women with the inability to bear children. Even Ramesses II writes about it in vivid terms in a letter to the Hittite king Hattusili. Hat-

Figure 5: Sennudjem and his wife depicted in their tomb. Both are shown as youthful (photo: the editor 1976)

tusili had asked Ramesses to send him a man to prepare medicine to enable his sister to bear children. The Egyptian Pharaoh writes of her:

> *A 50 year old!! Never! She's 60! Look, a woman of 50 is old, to say nothing of a 60 year old! One can't produce medicine to enable* <u>her</u> *to bear children! ...*[5]

Ageing in Art

The process of becoming old, especially for women, is seldom represented in Ancient Egyptian art (or writing). This probably explains why our book is still the only one devoted to the subject! The sole concession to 'middle class' old age, in just three Deir el-Medina tombs – viz. Pashedu (TT 3), Ipuy (TT 217), and Irinefer (TT 290) – is grey, white, or salt-and-pepper hair. Nevertheless, the faces of these older people – both men and women – are perpetually youthful and unlined. Therefore in the official tomb art we encounter the same positive imagery of infinite youth and the denial of decrepitude as in today's consumer society with its advertisements for anti-ageing creams and cosmetic surgery (Featherstone, 1991; Blaikie, 1993).

Ageing in Deir el-Medina Texts

The value attached to old age is shown in the opening formulae to some letters:

> *May god keep you healthy, keep you alive, and let you achieve a long lifetime and a ripe old age.*[6]

But generally there is a two-fold attitude to ageing, even of a universal ridicule of its physical aspects, as proved by an ostracon in the Petrie Museum at University College London:

> *Do not mock an old man and an old woman when they are decrepit; beware lest they place a curse on* <u>your</u> *old age!*[7]

This ridicule is seemingly confirmed by artistic representations from the Village: the caricature on a figured ostracon of the ageing Queen of Punt, copied two dynasties later from the walls of Hatshepsut's Deir el-Bahri temple (Peck

and Ross, 1978: fig. 46 on 115). Then there are the twelve scenes in the infamous Turin Erotic-Satirical Papyrus (Papyrus 55001) (Figure 6). This shows seedy older workmen – with 'middle-aged spread' and bald heads – being ridiculed for the marked flagging of their sexual energies (Omlin, 1973; Houlihan, 2001: 130-136). Or is it another matter altogether? Was the ancient draughtsman actually denoting a picture of what Gerontologists refer to as activity theory (Havinghurst, 1963: 299-320)? This claims that in order to achieve 'successful' or 'productive' ageing, older people need to continue to be active in the same way as they were at middle age. So the papyrus might instead be implying in a positive manner that older workmen were still capable of engaging in the sexual activity of their youth. This explains exactly why Egyptology needs Gerontology! Whatever, balding was clearly a common sign of ageing for the Ancient Egyptians as evidenced by a dozen prescriptions for hair loss in the Ebers medical papyrus (Nunn, 1996: 95, 149).

In contrast with this mockery we find respect for old age. The *Book of Kemit*, a school text, which was the most popular literary text in the Village, contains the sentence:

> *I never did wrong to my father, I have not annoyed my mother.*[8]

This attitude is confirmed by a real life poignant message the scribe Butehamun appended to a letter by the prophet of Amenophis called Amenhotep to Butehamun's father Dhutmose, who was travelling in the Sudan:

> *As soon as my letter reaches you, you shall write me a letter in your own handwriting that I may know that you are still alive. Indeed my eyes are going blind since they cannot see you.*[9]

Significant, of course, is the fact that it is the old father and not the son who is travelling.

Figure 6: *Two of the twelve scenes from the Turin Erotic-Satirical Papyrus. This may be an example of 'successful ageing' rather than ridicule of the elderly. (line drawings: courtesy of Patrick Houlihan)*
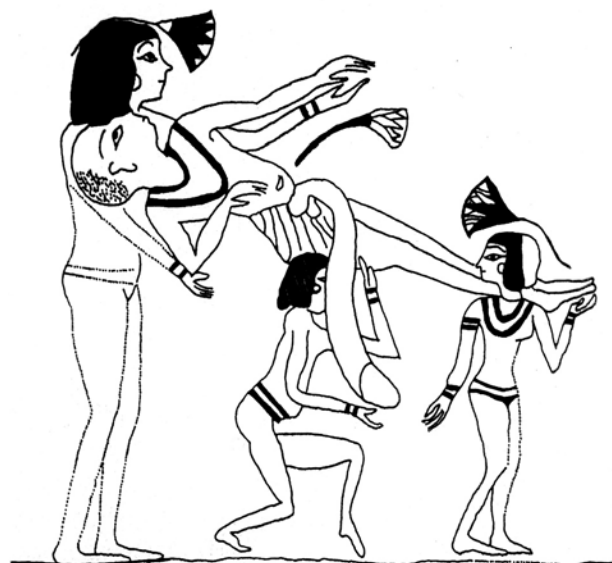
Demographics

Unpublished papyrus fragments in Turin known as the Stato Civile comprise two or more census lists drawn up at different times. A woman in one fragment, for example, is living in her husband's house, whereas in another she has moved in with her son and daughter-in-law. This indicates that older people, especially widowed mothers, were at critical periods taken in by their younger relatives. That they then returned to their own homes is attested by the case of a widow living alone (see further below).

These younger relatives resided in unexpectedly small nuclear families, refuting modernization theory's belief of the old as heads of multi-generational households in non-industrial societies (Cowgill and Holmes, 1972: 11). In turn, there is evidence of parents taking in their children following marital breakdown. Such a flexible 'nuclear reincorporation household system' (Laslett, 1989; Kertzer and Laslett, 1995), is also attested in Ancient Rome (Parkin, 1992).

Having one to four offspring appears to have been the norm, compared with the numerous children recorded on the tomb walls. Perhaps on average six to eight children were actually born, with a high percentage certainly dying young. Even childless couples are noted.

Widows

There were probably never many widows at any one time in the Village, but widowhood was a state women referred to themselves as being in (Toivari-Viitala, 2001: 212). They were still very much involved in the affairs of the community. For example, there were no gender distinctions in legal cases: a widow could claim the landed properties of her husband from the local court. There is an instance of the court saying:

> *The woman is right! And they were given to her.*[10]

A woman could also act as the executrix of her husband's will.

A specific example of a widow is the notorious Heria who committed two thefts. Her case was presented to the Vizier, who was asked to make a judgement which would act as a future deterrent:

> *So that there shall be no woman like her,*
> *again to do likewise.*[11]

According to Toivari-Viitala (2001: 133) this exceptional statement suggests a gender category of "thieving women". But what is relevant for our argument is that the stolen goods – a copper chisel and other copper objects belonging to one of the local cults – were found *in her house*, indicating that widows were capable of acting as heads of households of their own. However, generally they would have turned to their families for lodging and support. They would have had minimal chores to do there, as heads of an age-based hierarchy.

Care of Old Women

The Deir el-Medina grain-ration lists make it clear that older workmen received a state pension (Janssen and Janssen, 1996). "Old men" receive less that the younger workers: 1½ sacks as against 4 per month, indicating that they had been pensioned-off. Such an amount was still adequate for a retired couple for the basic needs of bread and beer.

Furthermore, the widows continued to receive monthly grain rations from the state, for they are also mentioned in lists of rations. To elderly spinsters were also distributed rations of 1½ sacks each. Even more remarkable is the fact that widows' pensions were transferable to fellow widows, as evidenced by the following letter written by a man:

> *Now as for the message you sent about your mother,*
> *stating that she died. You said: 'let the wages that used*
> *to be issued to her be given to my sister*[12]*, who*
> *has been a widow here for many years until today'. So you said.*
> *Do so, give it to her until I return.*[13]

This is all very different from the rapidly worsening pension system being experienced by both Australia and Britain today! Moreover it contradicts the entire basis of revisionism theory as defined above.

However, this pension was merely a basic support providing bread and beer, and the "old men" and widows were still for other necessities dependent upon their family, especially their children. There was a clear system of reciprocity, or what Walker (1996) terms the 'generational contract': parents were expected to provide for their sons and daughters. Adult children, in their turn, had the filial duty to care and provide for elderly parents as in Classical Antiquity (Parkin, 2005). Gradual retirement took place, where in old age a workman appointed his son or another person as helper – a "staff of old age" – sometime before he gave up his job because he was no longer physically able to work. A son then gave a regular grain stipend, comprising up to half his income, to his newly retired father (McDowell, 1998). There is also additional evidence of similar stipends being paid by members of the local community to widows and divorced women, although it is not always clear whether they were old.

The Wise Woman

The Wise Woman is only known from five texts. Yet she was clearly a significant member of the community, and her very title – *t3 rkh.t* "she who knows" – suggests the wisdom that modern psychologists tell us comes with experience and is therefore a product of later life (Sternberg, 1990; Baltes, 1991). She acted as a diviner and healer (Borghouts, 1982). She was most probably old as such women still are in modern Egypt and Italy, and were in Ancient Greece and Israel.[14]

There was only one Wise Woman at any one time and she is always referred to by her title, omitting her personal name, which emphasises the social status of her office. She acted as a consultant for situations for which no immediate explanation could be found. Through her actions she helped to restore normality and harmony (Karl, 2000), since she possessed a deeper knowledge of the relations between the realms of the living, the gods, and the deceased. She was consulted by people who felt threatened and uncertain because there had been a "manifestation" of the gods. The reason for that was wrong behaviour which had offended the god in question, such as a false oath. The sign was often physical symptoms: distress, blindness, and pain in all limbs, or even the death of one's children.

Indeed, by far the clearest and the most poignant of the five texts is a letter written by the workman Qenhikhopshef to Inerwau, perhaps the nurse of his two sons who have died in suspicious circumstances:

> *Why is it that you failed to go to the Wise Woman concerning the two boys who died while in your charge?*
> *Inquire from the Wise Woman about the death of the two boys. 'Was it their fate? Was it their destiny?'*
> *Inquire it for me, and get a view on my own life and the life of their mother. As for whatever god shall be mentioned to you, write me about his name.*
> [Fulfil the tas]*ks of one who knows her duty.*[15]

Qenhikhopshef clearly wonders why Inerwau did not on her own initiative consult the Wise Woman. He wants to know why his two boys died, and whether his life and that of their mother is now in danger, and especially which deity was responsible for his misfortune.

This text provides a tantalizing glimpse of the esteemed role of this intriguing, but poorly attested older woman in Egyptian society in acting as a sort of oracle.

Inheritance and Burial

Those children who looked after their parents in old age were likely to be treated advantageously by the testator. Normally all offspring inherited equally. But as in all eras, including Thane's Athens (2000: 39), children sometimes failed to look after their ageing parents. It was therefore ultimately possible for parents to disinherit some neglectful children in favour of others, or to allot a larger share to some than to others. For example, the widow Naunakhte, who was certainly over 65, disinherited four of her eight children in her Will which is now in Oxford:

> *But see, I am grown old, and see,*
> *they are not looking after me in my turn.*[16]

The older generation had to be taken care of after death, burial being an elaborate process involving mummification, preparation of the tomb, provision of funerary equipment and offerings. Since the deceased could no longer repay the cost of this, Pharaoh had established a legal ruling:

> *Let the property* (of the deceased) *be given to the one who buries.*[17]

Five texts indicate that by not burying the deceased, the heirs forfeited their rights to a share, while those who undertook the burial received everything (Janssen and Pestman, 1968). Thus a certain Huy had provided the burial of his mother, without the help of his brother and sisters, just as he had previously buried his father. This entitled him to his mother's full estate, in support of which the legal ruling of Pharaoh is cited. This illustrates the importance of a good burial in Ancient Egypt.

Ancestor Worship

The authority of the old while still alive in the Village is demonstrated by the role of ancestor worship. Recently deceased older (never young) family members were believed to still be part of the world of the living, counted among the 'actual' inhabitants of the Village. They were called *akhu ikr* or "the able spirits" (Demarée, 1983), indicating those who had been authoritative in life, by inference, the older members of the community. In times of difficulties people turned to them for help: i.e. to a parent still remembered, not to an ancestor of long ago. Some fifty small Akh-iker-en-Re stelae depict the venerated dead as part of a house-cult, while seventy-five stone ancestor busts represent "the able spirits" (Friedman, 1985). Significantly, some of these were older women (Demarée, 1983). It was felt necessary to appease these ancestors with regular food offerings lest the dead turn into haunting spirits, capable of causing great misery. The older generation therefore clearly played a role in Egyptian society after death. Their powerful influence exerted from beyond the grave meant that they could continuously intercede, or at the worse interfere, on behalf of the living. Indeed, the only aspect where the status of the old here falls short is that it nowhere reaches the level of veneration.

Conclusion

Today's sociologists (Itzin, 1984) talk of a 'double jeopardy' facing women over 50 through sexism and ageism. Similarly, Parkin (1994) believes that in Classical Antiquity older women were marginalized once past the menopause, since they could no longer perform their primary reproductive function.[18]

Minois (1989), who wrote a global overview of the history of old age from antiquity to the renaissance, totally ignores old women since he was convinced that they had mostly died off in the rigours of childbirth. However, this paper has revealed that they were very much around in the Village of Deir el-Medina. Here being a woman and old implied surprising rights, freedom, and even an authoritative status as an "able spirit". Older women clearly functioned almost on the same level as the men, confirming Thane's view (2005:

28) that: "the story of old age is a much more hopeful one than, all too often, we are led to believe".

Rosalind Janssen
Birkbeck College, University of London
e-mail: rosalind.janssen@virgin.net

Acknowledgements

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A First Dynasty Egyptian wine jar with a potmark in the collection of the Australian Institute of Archaeology

Lisa Mawdsley

Abstract : A unique incised potmark may hold the key to the identification of provenance for a First Dynasty storage jar in the collection of the Australian Institute of Archaeology.

Introduction

The recent unpacking of artefacts at the Australian Institute of Archaeology in preparation for permanent storage and preliminary cataloguing into the new database has revealed a wealth of unexpected surprises, particularly in relation to the Institute's collection of Predynastic-Early Dynastic Egyptian pottery.[1] One exciting discovery is a large First Dynasty storage jar with a pre-fired incised potmark. The mark was created by a technique that involved the use of a blunt or sharp stick or flint tool to incise a sign or group of signs upon a vessel while the clay was wet and before the vessel was fired. The documentation provided to the Institute does not indicate a provenance and the jar does not have an excavation or tomb number. In most circumstances this would make the identification of provenance almost impossible but in this case the unique composition of the mark itself may cast light on the possible origins of the jar.

The vessel

The Institute's vessel is an intact elongated storage jar commonly referred to as a wine jar (Figure 1). While the name suggests a particular function, these jars would have been used for storing and transporting such commodities as oils, liquids and grains and are often found in burials containing the residues of fats, resins or ash (Serpico 2004: 1017-1019). The jar has one horizontal ridge imitating a rope between the rim and shoulder and another at the base of the vessel. This form corresponds to Petrie's (Petrie *et al.* 1913: pl. LVI) type 76m but with a ridge above a more rounded base as seen on type 76g (Petrie *et al.* 1913: pl. LVI). Petrie's type 76m appears in the chronological sequence of wine jars from the mid-First Dynasty. The type was dated to S.D. 80-82 (Petrie *et al.*

1913: pl. LVI)[2] and falls within Hendrickx's (1996: 65) Naqada IIIC-D. The middle and lower part of the vessel was handmade while the neck and rim were made from a separate coil and finished on a turning device. The exterior has been coated with a brown-red slip and the body has been finished with vertical burnishing. The vessel is made of a Nile Silt fabric. There is some pitting to the lower half of the body and evidence of salt damage. The vessel is 650 mm in height with a maximum diameter of 200 mm and a rim diameter of 120 mm. The potmark is deeply and neatly

Figure 1: *The storage jar IA1.2111. (Photo: H. Huggins and Drawn: C.J. Davey)*

Figure 2: Incised mark on storage jar IA1.2111.
(Photo: H. Huggins).

incised below the horizontal ridge in the upper body. The mark is composed of a square containing two vertical lines running from the top to almost the bottom of the frame and a secondary sign that appears to be an inverted U (Figure 2). The mark also appears to have been infilled with a white pigment, perhaps a calcium or calcium sulphate mixture. The vessel has recently been accessioned as IA1.2111.

Acquisition of the vessel

In 1949 the Institute acquired four cases of antiquities originating from Flinders Petrie's excavations at Tell el 'Ajjul, and Egypt. The first president and founder of the Institute, W. J. Beasley, purchased the artefacts for £100 from the British School of Egyptian Archaeology.[3] Correspondence from Hilda Petrie to Beasley's agent, Mr McKay, documents how 15 boxes of artefacts from University College London were distributed to the Institute, the University of Sydney and to a biblical museum in the United States.[4]

In a letter to Beasley dated 22 October 1949, Hilda Petrie indicated that the four boxes for the Institute had been dispatched and that she was forwarding a more detailed box list. The list provided a layer by layer outline of the material contained within the boxes. The first box contained 56 pots from Egypt, including Late Predynastic and First Dynasty cylinder jars and vessels dating from the 9th Dynasty to the Late Period. In the bottom layer of the first box the list recorded three large specimens of First Dynasty storage jars. There was no detail provided regarding the provenance of these vessels and in Hilda Petrie's letter to Beasley she made the comment that the list was "not a very efficient guide to unpack by, as it is mostly by groups rather than by dates or history. It is 20 yrs since we left Egypt, and I am rusty."[5]

In the same letter Hilda Petrie indicated that many of the pots were from Lahun, Gurob and Harageh and were marked at the base with a L, H, G or GH to indicate the place of origin. The Institute's jar is not marked at the base. There are only three First Dynasty storage jars in the Institute's collection so it is assumed that these vessels were part of the 1949 shipment.

Identification of the mark

The only published example of the two lines within a frame and inverted U combination was illustrated by Hilda Petrie as mark number 59 on plate XXI of *Tarkhan II* (Petrie 1914: pl. XXI; Figure 3). In Edwin van den Brink's (1992) corpus of 2474 published First Dynasty potmarks, this mark is recorded as a unique example and allocated to sign group II.25.[6] On the basis of this information it would not be unreasonable to suggest that the Institute's vessel originated from Tarkhan. In fact the close similarity between Hilda Petrie's drawing and the potmark (Figures 2 & 3) raises the possibility that she actually drew the vessel the Institute now has. The application of the white pigment may be significant to the identification as three other marks from Tarkhan have also been infilled with a similar substance.[7] This practice has not been commented upon in the literature to date and may have been unique to the site for some unknown reason.[8]
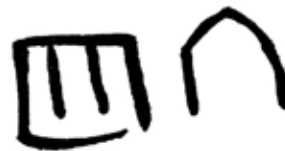
Figure 3: Mark 59 from Tarkhan II depicting a frame containing two lines and an inverted U originally illustrated by Hilda Petrie (Drawn: C. Smith after Petrie 1914: pl. XXI).

Tarkhan

Tarkhan is a cemetery in the Memphite-Fayum region almost 60 kms south of Cairo on the west bank of the Nile. With over 2000 burials it is the second largest Late Predynastic-Early Dynastic cemetery in Egypt after Helwan (Köhler 2004: 299). Burials were first interred in the Naqada IIIA period and the cemetery was in use until the end of the First Dynasty, covering a period of time from approximately 3200-2890 BC.[9] The site was excavated by Flinders Petrie during two short seasons between 1911-1913 and two excavation reports known as *Tarkhan I* (Petrie *et al.* 1913) and *Tarkhan II* (Petrie 1914) were produced quickly after each season. Although Tarkhan is often mentioned in the literature it remains poorly studied and has not been re-excavated.[10]

Tarkhan has the fourth largest number of published potmarks after Abydos, Saqqara and Minshat Abu Omar (van den Brink 1992: fig.4; Kroeper 2000: 15).

To date 344 marks from Tarkhan have been identified (Mawdsley 2006: 16). Of this number, 76 are unique to the site. Some of these are listed in van den Brink's (1992) corpus as unique forms of particular marks, while others are recently discovered single examples and have no published parallels. Petrie originally published 282 potmarks in *Tarkhan I* and *Tarkhan II*. The remaining 62 marks have been identified from an examination of Petrie's excavation

tomb cards and from searching the catalogues of international museum collections (Mawdsley 2006: 20).

Unlike the majority of marks illustrated in *Tarkhan I* only seven of the marks in *Tarkhan II* had been allocated tomb numbers.[11] Regarding the origins of the marked vessels Petrie (1914: 12) simply made the comment that the 'greater part are from the large graves 2050 and 2026 of S.D. 80, and 2038, 1982, 1973 of S.D. 81'. In Petrie's (1914: 5) discussion of the tombs he indicated that vessels with potmarks were placed outside the mastaba structure of tomb 2038 as offerings, but made no mention of any marked vessels found within the tomb. Petrie (1914: 8) also noted that a large store of big marked jars, which were probably wine jars, stood at the north end of tomb 1973. It is difficult to know how many of the marks illustrated in *Tarkhan II* belong to the above-mentioned tombs and it is certainly not made clear in the excavation report. A further examination of the tomb cards for each of these tombs failed to identify any reference to marked vessels.[12]

Another vessel of interest

The tentative identification of provenance is strengthened by the presence of another wine jar with an incised potmark from Tarkhan in the collection of the Institute. The vessel is currently on loan to the Museum of Ancient Cultures, Macquarie University.[13] The wine jar was accessioned in the register as IA1.99. It is presumed that this vessel was one of the three storage jars acquired in 1949.[14] The brief description of the jar was accompanied by a drawing of the mark. The mark appears to represent a *mr*-hoe (Gardiner U 6) together with a vertical line surmounted by supporting pole (Gardiner 0 30) or Y-like sign. Once again the only published example of this mark was illustrated by Hilda Petrie as mark number 52 on plate XX1 of *Tarkhan II* (Petrie 1914: pl. XXI; Figure 4). The mark is also recorded as a unique example and allocated to sign group XVII.13 in van den Brink's (1992: 291) corpus of First Dynasty potmarks.

The vessel has been described as an elongated storage jar with a narrow flat base. It has a rib imitating a rope on the shoulder and is an example of Petrie's type 76m (Petrie *et al.* 1913: pl. LVI). It has a pre-fired mark incised into the

Figure 4: Mark 52 from Tarkhan II originally illustrated by Hilda Petrie. (Drawn: C. Smith after Petrie 1914: pl. XXI).

upper body. The vessel is made of a Nile Silt B fabric. It is 597mm in height, with a maximum diameter of 210 mm and a rim diameter of 135 mm. The vessel has been identified as originating from tomb 1973 at Tarkhan.[15]

A brief comment on the function and meaning of First Dynasty potmarks

There is renewed interest in the study of potmarks as they are now recognised as an important source of information for understanding how the administrative system of the First Dynasty may have functioned.[16] With regards to the function of the marks, it has been proposed that marks applied to certain types of pottery could be linked to a centralised administrative body responsible for a commodity distribution or redistribution network possibly connected with funerary practices (van den Brink 1992: 274).[17] It has also been suggested that some marks may represent a pre-mortuary administrative function and would have been used to denote the origin or destination of the original contents of the jar in its first stage of use (Mawdsley 2006: 44).

Attempting to unravel the meaning of the marks is a more difficult task. Visually many incised marks bear a similarity to hieroglyphic signs but the connection between the two remains unclear (van den Brink 1992: 276, 278; Baines 2004: 159-160). It is possible that the practice of marking pottery represented a system of commodity control and identification that eventually developed into an alternate script for administrative purposes. The marks may represent shorthand versions of the names of estates, domains, places, gods, temples and symbols associated with royalty or those with a funerary significance. The marks were designed to convey information relevant to the origins, distribution or destination of the product contained within the vessel and their interpretation was based upon an understanding of context and of the role these marked vessels played within the administrative system.[18]

Interpreting the mark

In van den Brink's (1992: 286) corpus the mark has been allocated to sign-group II, which includes 136 published examples of square or rectangular frames containing either one or two vertical lines or a combination of vertical and horizontal lines. The vertical lines within the frame incised on the Institute's vessel suggests that the sign may be a form of plain *serekh*. *Serekhs* were marks used to denote Late Predynastic and First Dynasty rulers and are believed to represent the architectural design of a panelled or niched palace façade.[19] Square or rectangular frames with between three to six vertical lines have been identified as plain *serekhs* and have a wide chronological range appearing on wine jars from the early Naqada III period to the mid-First Dynasty (van den Brink 2001a: 26). The frame incised on the Institute's vessel falls outside van den Brink's (2001a: 26) criteria for a plain *serekh* as it contains two lines; however, there are examples of plain

serekhs containing single and double lines from el-Beda and Turah (van den Brink 2001a: 34, 38).

One plain *serekh* containing three vertical lines has been identified at Tarkhan (van den Brink 2001a: 29). This mark was illustrated as mark number 78 in *Tarkhan II* and probably dates to S.D. 80-81 or the mid-First Dynasty (Petrie 1914: 12, pl. XXI). There are also a further five marks from Tarkhan with between one to three lines within a frame that could be considered forms of the plain *serekh*.[20] These marks were dated to S.D. 80-81 by Petrie (Petrie *et al.* 1913: pl. XXXI; Petrie 1914: 12). It is also interesting to note that secondary signs, frequently in the form of tree or plant-like signs, do accompany plain and named *serekh* marks (van den Brink 2001a: 34, 38). The inverted U or V sign has been found in association with one plain and two named *serekh* marked vessels from Abu Roash, Turah and Abydos (van den Brink 2001a: 28, 37, 43).[21]

If the frame is a form of plain *serekh* it may have been intended to represent the king, or an estate of the king, while the inverted U sign represented the origin or destination of the goods contained within the vessel. If the frame is not a plain *serekh,* it may still represent a First Dynasty royal estate. Even though the sign combination appears to be unique to Tarkhan it does not mean that the marked vessel was manufactured at the currently unlocated settlement associated with the cemetery. It is possible that the marked vessel originated from another centre and was sent to the site for some specific administrative purpose, such as payment for work undertaken on behalf of the king. Once the product contained within the vessel was used, the jar itself may have been kept and later became a burial item or offering for one of the tombs excavated by Petrie during his second season at Tarkhan.

Conclusion

While the unique composition of the mark suggests that the vessel may have originated from Tarkhan, it must be emphasised that without supporting documentation this proposed provenance remains speculative. Research undertaken on the potmarks of Tarkhan (Mawdsley 2006) and Abydos (Adams and Porat 1996: 100; Gilroy *et al.* 2001: 40) has demonstrated that Petrie did not record or illustrate all of the marked fragments and vessels discovered during his excavations.[22] Given this information it is possible that the incised mark on the Institute's jar represents a second example of the mark illustrated in *Tarkhan II*.

Lisa Mawdsley
Centre for Archaeology and Ancient History
Monash University

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Endnotes

1 There are 101 Predynastic-Early Dynastic vessels accessioned in the registers with a further 10-15 vessels that have not been accessioned. See also Hope (1982: 29, 33).

2 Sequence Date refers to a relative chronological sequence devised for the Predynastic and Early Dynastic periods by Petrie (see Petrie 1901: 4-12; Petrie *et al.* 1913: 1-5).

3. Although the Institute was not founded until 22 September 1949, Beasley had corresponded with Hilda Petrie from late 1935 to early 1936. The first letter received from Hilda Petrie is dated 5 March 1936. In return for a contribution to the British School of Egyptian Archaeology Beasley acquired Egyptian antiquities in 1936 and 1937 (Crocker 1990: 65-66). On W. J. Beasley and the collection of the Institute see Crocker (1990: 65-70).

4 Institute Correspondence file numbers 740 and 741. Letters from Hilda Petrie (Lady Petrie) to Mr McKay dated 27 and 30 June 1949.

5 Institute Correspondence file number 738. Letter from Hilda Petrie (Lady Petrie) to Mr Beasley dated 22 October 1949.

6 The corpus produced by van den Brink (1992, 265-266) assigned the 2474 marks into 77 sign groups based upon similarity in design The marks were obtained from 14 published sites, including Tarkhan, and one unpublished site. The corpus also included the total number of times each sign or combination of signs had been used at the sites under investigation.

7 Mark 42 (Petrie 1914: pl. XX) (UC28625); mark 35 (Petrie 1914: pl. XX) (UC28637); new mark (UC28647) (Mawdsley 2006: table 1.11).

8 This observation may not be as significant as originally thought as a chance reading of Petrie's (1904) treatise on archaeological methods came across a reference to the practice of photographing artefacts, the comments are particularly relevant. " Any sunk carving or inscription of small size should generally be filled in with whiting…so as to give a strong contrast…Only rather course powders should be used, in order to avoid staining the object" (Petrie 1904: 76). If the application of pigment is a modern one, this finding is still of interest as it would lend support to the idea that the vessel originated from a Petrie excavation. Further analysis of the pigment is required before any firm conclusions can be drawn.

9 The site was later re-used and contains a small number of burials from the Old Kingdom, First Intermediate Period-Middle Kingdom, Late Period, Ptolemaic and Roman periods (Grajetzki 2004: 44-51). Apart from Grajetzki (2004) these burials have not been studied in any detail.

10 See Ellis (1992; 1996) and Grajetzki (2004). Wolfram Grajetzki worked on the Tarkhan material at the Petrie Museum, University College London as part of the Museum's Digitial Egypt for Universities project and the writer is currently undertaking doctoral research on the site at the Centre for Archaeology and Ancient History, Monash University.

11 Marks 3-6 were found in tomb 1756, mark 7 in tomb 846, mark 8 in tomb 1115 and mark 91 in tomb 1981 (Petrie 1914: pls. XX and XXI). Tomb 1233 was identified as the location of mark 36 (Mawdsley 2006: 18). Two fragments, mark 12 (UC28624) and mark 17 (UC28619) were marked in pencil with the tomb number 2050.

12 The lack of detail in the report and on the tomb cards regarding the marks highlights the fact that the second season of excavation was rushed. Petrie and his two assistants mapped and excavated over 1000 tombs from December 1912 to the end of February 1913. The famous T.E Lawrence spent a short time at Tarkhan during the first season before returning to Carchemish (Petrie *et al.* 1913: 1) and his description of work at the site is particularly revealing, "in

our first week have dug out about 100 graves…so twice as many graves are found as we can recover properly; with plenty of time it would be delightful, whereas now we are swamped with the multitude" (Drower 1985: 320).

13 The vessel has been assigned a Museum of Ancient Cultures catalogue number of MU 1000.

14 The third vessel has recently been accessioned as 1A1.2110. The jar has one horizontal ridge at the base and corresponds to type 75o (Petrie *et al.* 1913: pl. LV). Unfortunately it has been broken since shipment.

15 Based on a description for the Museum of Ancient Cultures kindly provided by Colin Hope. The entry in the Institute's accession register also identifies the tomb of origin as 1973 but with a question mark.

16 This interest has resulted in the establishment of the International Potmark Workshop by Edwin van den Brink of which the writer is a member.

17 For a chronological listing of the major explanations regarding the meaning and function of First Dynasty potmarks quoted from an unpublished manuscript by Tom van den Berg see van den Brink (1992: 276).

18 Baines (2004, 165) has suggested that early writing found on tags and jar inscriptions may have been context-dependent and that an understanding of the inscriptions "relied on the association of context and content." This statement is particularly relevant to the study of potmarks. Clearly the problem of understanding and interpreting the marks is a modern one.

19 For a more detailed discussion on *serekhs* and the origins of the palace-façade see Hendrickx 2001: 90; Jiménez Serrano 2001: 73-78; 2003: 93-142; van den Brink 2001a: 100; 2001b: 103-106.

20 Marks 10, 12, 70, 79 (Petrie 1914: pl. XX-XXI) and mark 120 (Petrie *et al.* 1913: pl. XXXI).

21 The inverted U has been allocated to sign-group VIII in van den Brink's (1992: 288) corpus. It appears to have been most frequently combined with a plain square or rectangle (van den Brink 1992: 288).

22 It is amazing to note that over 1000 marked fragments from Petrie's excavations at Abydos were never recorded and are stored at the Petrie Museum, University College London (Adams and Porat 1996: 100).

Reconstructing Ancient Kellis Part II

G. E Bowen, T. Chandler, C. A. Hope and D. Martin

Abstract: This is an investigation of an online interactive application that allows visitors to navigate their way through models of domestic architecture and see it as a citizen of Kellis would have seen it in historical times. The goal is to communicate a richer representation of domestic life at Kellis where excavated artefacts are given context through their inclusion within the reconstructed three-dimensional (3D) architecture. The digital recreation is reinforced by adding 'soundscapes' that subtly evoke the agrarian village environment of the period. The creation of an 'immersive' environment using computer game technology expands the possibilities for archaeological interpretation within a reconstructed space. While these digital technologies may benefit researchers in communicating archaeological sites in a cohesive visual form, their educational potential for high schools and the general public (museum exhibitions) is more immediately applicable. This publication is accompanied by an online website (see above link) where readers can explore and experience first-hand the virtual images and models that are discussed in the following pages.

Introduction

This paper extends the research into the digital reconstruction of architecture at the Roman period village of Ismant el-Kharab (ancient Kellis) published in *Buried History* Volume 41. The purpose is to present the results of ongoing research into the virtual reconstruction of Ismant el-Kharab, ancient Kellis, in Egypt's Dakhleh Oasis, through a detailed study of Houses 1-3, the buildings being reconstructed by the 3D process.

To place this project within its context, an archaeological overview of Houses 1-3 is provided by Colin Hope, while Gillian Bowen reviews the evidence for textile manufacture within the houses. The discussion of the Virtual Archaeology project and the work undertaken to date is provided by Tom Chandler and Derrick Martin, Faculty of Information Technology, Monash University.

Whereas the previous paper was primarily concerned with the digital reconstruction of excavated architecture, here we introduce readers to more advanced applications of virtual technology; specifically, the *interactive* reconstruction of Houses 1-3 and the excavated artefacts found within them. The following pages include images that depict the working online application in action. However, the images printed here are merely snapshots of the virtual reconstruction and readers are encouraged to visit the website to experience the application to full effect.

Domestic Architecture at Kellis

The site of ancient Kellis lies in the south centre of Dakhleh Oasis within Egypt's Western Desert. Occupying approximately three-quarters of a square kilometre, the site witnessed occupation from the late first century BCE until the end of the fourth century CE, and throughout this period underwent a series of major architectural developments. Within each phase significant areas of the site were devoted, quite naturally, to residential activity. Within the earliest phase of occupation, from the late first century BCE to early third century CE, the major residential areas were on the north and east of the site. On the north a series of imposing buildings was erected that included substantial residences painted with a variety of classical-style wall paintings (Hope and Whitehouse 2006) surrounded by less formal buildings, including two pigeon-lofts (Hope et al. 2006: 27-9). On the east the buildings are less pretentious but include courtyard houses arranged along alleys and areas that attest industrial activity: pottery making, metalworking etc (Hope at al. 2005: 35-7). While work has been conducted within these buildings for several years, further exploration will undoubtedly yield invaluable evidence for the early development of Kellis.

Within the next major phase of activity, throughout the mid to late third century until the end of the fourth century CE, the central part of the site was developed into an extensive residential sector, termed, for ease of reference, Area A. This was the first part of the site to be explored, and between 1986 and 2001 five house complexes were excavated. Three of these, Houses 1-3 (Fig. 1), form a contiguous block and appear to have been planned as such; they were constructed from east to west, but excavated in reverse order. The features of the houses are similar: the rooms mostly have barrel-vaulted roofs, though some are flat and supported on wooden beams; cooking areas are either within the courtyards (House 3) or in additions to the original core (House 1-2); white-washed areas frame significant features within the spaces, such as cupboards, lamp recesses, and roofs; light is admitted either through doors or small angled windows set at roof level; and many spaces appear to have been multi-functional. Much activity took place upon the roofs. Only House 2 preserved a dining area: in room 7 a horseshoe-shaped construction at the south end permitted diners to recline in good Roman fashion around a table; this structure is typical of various features within the domestic architecture at Kellis that
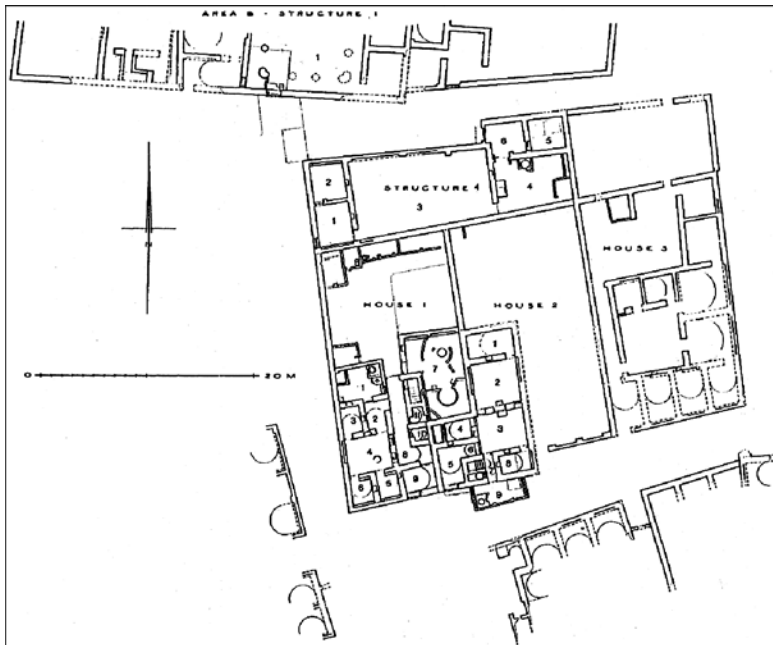
Figure 1: Plan of Houses 1-3 in Area A.

betray Roman influence on domestic architecture at the site. Courtyards were used for raising and stabling animals (donkeys, probably pigs and goats/sheep, chickens and ducks) in addition to other domestic activity. Throughout the excavation of these structures vast quantities of pottery, basketry, cordage, textiles, woven matting and inscribed material were found that enable life within the houses, and the wider village environment, to be reconstructed in detail.

The process of such reconstruction is very time consuming and often does not enable the non-archaeologist to gain a clear picture of ancient life. It is to overcome this problem, and to test various hypotheses concerning specific details of the ancient buildings, that 3D reconstruction work was commenced on the structures from Kellis, and now the more elaborate techniques described below extend greatly the range of possibilities. Not only can the buildings themselves be reconstructed, but objects can be placed within the virtual houses, people can be represented undertaking their daily tasks, animals can be inserted and sound introduced. These reconstructions are firmly based upon the archaeological record, as for example the suggested manufacture of textiles discussed by Gillian Bowen in the next section, and thus have wide potential for understanding the use of ancient space. One of the most immediate results of this task has been the realization that domestic architecture within Dakhleh has not changed dramatically until relatively recently, indicating its suitability to the harsh environment of this part of Egypt.

Textile Production within a Domestic Context: Digital Reconstructions and Archaeological Evidence

Numerous artefacts that have been recovered from all of the houses excavated at Kellis indicate that the occupants were involved in spinning and weaving. These include spindles, spindle whorls, loom weights, shuttles, unspun yarn and sections of warp that have been removed from the loom prior to completion of the fabric (Bowen 2001: 19-20). In many cases it can be assumed that the items produced were simply to cater for family needs. Textual evidence, however, has confirmed that a small-scale weaving and tailoring business was conducted from House 3 under the direction of a woman, Tehat, in conjunction with her husband, Hatres (Gardner et al 1999: 46; Bowen 2001: 24). The documents indicate that some of these garments were sent to the Nile Valley (P. Kellis I. Gr. 51.3-6; Worp 1995, 147-49)**.** Items produced in House 3 include garments, such as cowls, headscarfs and tunics; larger items, which would have required more sizeable looms, include blankets (P. Kellis V. Copt. 44.24-5; Gardner et al 1999, 254-59; Bowen 2001: 24-5). Although no corresponding documents survive from House 1 to indicate that a similar business might have been conducted there, it has been tentatively suggested that gouges in the walls of Room 4, into which wooden beams were set (fragments of which remain *in situ*) may have been used to stabilise loom frames (Hope 1985: 118). These beams, along with most timber fittings, were removed when the occupants abandoned the premises, a practice discernable in all of the structures excavated at Ismant el-Kharab. Other material evidence for the production of cloth found in House 1 includes spindle whorls, loom weights, combs, and what appear to be heddles and shed bars. Quantities of worked wood from frames were retrieved from the house; some may have formed part of the looms. Peg holes in the walls could well have been used for measuring out the warp yarn, which was wound around such pegs as indicated in a model from the tomb of Meketre (Barber 1991: 85 figure 3.6; 89; Robins 1993: figure 28). Barber (1991: 89) notes that many hand-weavers use the same technique today.

Figure 2: View from a rooftop in the Bashendi Village.

Figure 3: A narrow lane in the Village of Balat.

The discovery of loom weights of various sizes and made of both sandstone and mud indicates that the villagers of Kellis used warp-weighted, vertical looms on which bundles of warp were tied together with weights in order to maintain the tension. This follows Greek practice and is in contrast to the traditional floor and non-warp weighted vertical looms used by the Egyptians in pharaonic times and which are illustrated in tomb paintings, such as that in the tomb of Djehuty-nefer at Thebes (Carroll 1988: figure 2) and the model of textile manufacturing in the tomb of Meketre. Heavy, dense fabric required a heavy loom weight whereas the fine and loose-woven cloth required a small, light weight loom (Barber 1991: 92). The looms comprised a wooden frame, which could be dismantled when not in use (Barber 1991: 270). No such ancient looms have been found intact and there is considerable debate on just how upright the looms were: vertical or on an angle (Barber 1991, 103). Both positions were possible as long as those on a vertical alignment were far enough away from the wall to allow the arm of the weaver to pass behind. If the beams in the wall of House 1 functioned as loom supports this would indicate that these looms were indeed vertical. There is every possibility that the traditional floor loom was also in use at Kellis for weaving smaller and more delicate fabrics.

The reconstructed looms used in the virtual reconstruction of House 1 follow a diagram in Barber (1991: figure 3.27), which is based upon Greek vase paintings. Some indication of the width of the looms used at Kellis may be determined by the depressions in the wall, the largest of which is just over one metre; the maximum width of fabric found at the site is 1.07 m (a shroud, which is fringed at the top and bottom where the warp was removed from the top beam; it is 1.85 m long). Tunics with *clavi* were woven sideways (personal communication, Rosanne Livingstone) and therefore a loom width at around 1.60 m could be expected for an adult's garment. The latter is based upon surviving garments found at Kellis.

Colours, Sounds and the Living Past

Because the teaching of Ancient History must necessarily deal with fragments and vast uncertainties, the virtual reconstruction of ancient history for education can reveal new opportunities for its interpretation. Traditionally, educational texts explaining ancient cultures are augmented with maps, photographs and diagrams of excavated artefacts, ruined temples and damaged statues. While these isolated visual representations are accurate and 'speculation-free', envisaging how they were used and the context in which they existed often presupposes a studied familiarity with the historic culture from which they derive. By placing artefacts within their reconstructed domestic environments, we are able to examine the contextualisation of the excavated material culture. For example, tentative reconstructions of weaving looms were placed in the areas where loom weights were uncovered in House 1 and pottery assemblages were reconstructed and placed close to the areas where nearly complete vessels were discovered. Similarly, doors, lintels and the shelves found in the niches were reconstructed and replaced with the fittings which had been removed.

The similarities which Houses 1-3 at Kellis share with modern villages in Dakhleh meant that modern photographic references could provide lighting and material references for simulated representations of historic domestic spaces. Photographs taken of the rooftops in the modern villages in Dahkleh (Balat, Bashendi and the Islamic town of el-Qasr) were the source for the reconstructed placement of palm fronds, palm rib boxes and varied debris on the roofs of Houses 1-3 (Figs 2, 3 and 4). Photographs of the dim corridors, covered streets and narrow lanes at el-Qasr and Balat were useful in reconstructing realistic virtual lighting schemes for the interactive walk through of Houses 1-3 as many of the roofs had long since collapsed. Another useful comparative study for visual references and artefacts

Figure 4: Courtyard at el-Qasr.

Figure 5: A representative selection of pottery from the excavation of Houses 2.

could be found in the documentation of the University of Michigan's excavations at Karanis (Gazda 1983).

In a previous paper the authors introduced advanced digital graphic experiments such as being able to 'cut through' virtual structures to see the inside and outside of architectural structures simultaneously (Bowen et al. 2005). There are no such 'special features' in this reconstruction. Rather, the virtual visitor shares the viewpoint of an inhabitant of the houses in that they steer their way through the reconstructed architecture at eyelevel.

In as close a way as possible, the visitor to the virtual reconstruction should experience a sense of actually journeying back in time and this is often referred to as 'presence' or a sense of 'being there'. In endeavouring to maintain this illusion, a great deal of time must be taken in ensuring the graphics are as realistic as possible, but a consideration for the sounds of historical spaces is often overlooked. Sound in fact constitutes an extra dimension in the virtual world and, when integrated properly into virtual applications, adds a depth and realism that graphics can never achieve alone. Where moving photorealistic or almost photorealistic visual imagery is employed, similarly realistic sonic elements are required to fully engage the observer in order to avoid any 'cognitive dissonance associated with sonic elements that mismatch the fidelity of the image' (Doornbusch 2004:1)

In keeping with this consideration, an atmospheric 'soundscape' was assembled from a wide range of sound recordings sourced from modern villages at Dahkleh and the archaeological site at Ismant el-Kharab. Animals such as dogs, chickens and goats can be heard among the distant sounds of playing children and a woodcutter's axe. As the visitor moves from open courtyards to gloomy corridors, the soundscape muffles and echoes subtly to simulate moving from an interior to an exterior space.

Virtual Museum Exhibits and Interactive Virtual Heritage

In the previous article the authors pointed to the valuable role Virtual Archaeology has for the preservation of the Kellis archaeological site (Bowen et al. 2005). The fragile nature of the structures renders Ismant el-Kharab a dangerous site for tourists to visit. Numerous buildings are preserved beneath the sand; the tops of some vaults and stairwells are visible from the surface, others are hidden and can collapse should the unwary tourist venture across the site. Moreover, tourists walking upon the walls and roofs of such structures pose a threat to the monuments themselves. Virtual Archaeology can address this problem and make Kellis widely accessible to the general public in a comprehensible form.

The recurrent problem of tourists wandering around the site of Kellis raises an interesting point, as the ability to (virtually) walk through the reconstructed buildings of Kellis that this study hopes to address. Whether this virtual substitute would assist in discouraging tourists from walking around the actual site is unclear and is worthy of further research.[1] What is also less clear at this stage is how and where an exhibition of a virtual Kellis might be communicated to visitors. A small touch screen kiosk in a covered area at the site is a possibility, but a more sophisticated and engaging option for a museum exhibition would require large screens and a dedicated viewing area not unlike a small cinema. For the interim, making a virtual walkthrough accessible online has its own advantages. Though an online walkthrough is physically divorced from the location of the archaeological site it remains available to visitors prior to or after their visit, or indeed tourists who are interested in Egypt but who may never visit Dahkleh Oasis.

In placing an interactive vision of Kellis on the internet certain considerations were paramount. Online content has certain advantages; in a purely graphic sense, it can display animations and many layers of detail through interactive menus. Online content is also easy to update and archive and it reaches a far wider audience than print media. However, 'broadcasting' digital content in the form of three dimensional (3D) walkthroughs has its attendant problems. While visitors who have grown up with computer games can comprehend and adapt quickly to the medium, many others will experience difficulties in running the program and figuring out how to interact with the simulated environment. In creating the virtual environment in this study the authors endeavoured to make things as uncomplicated as

Figure 6: A tentative reconstruction of the weaving area in House 1.

Figure 7: A virtual rendering of the courtyard in House 3 at eye level.

possible. The visitor to the site does not have to contend with pop up dialogue boxes, drop down menus or special 'keyboard shortcuts'. All that is required is to move backward, forward or sideways with the arrow keys on the keyboard while using the mouse to look around.

It is hoped that by simplifying the controls and dispensing with additional information the primary content is limited to the reconstruction itself. However, the way in which these controls are used and understood cannot be predicted until the online prototype is subjected to rigorous user testing. It is hoped that this testing will be of benefit in informing interactive design decisions before a more costly application is developed.

From Rendered Images to Immersive Worlds

Generating the virtual environment begins with the construction of 3D representations of the buildings and their associated contents and features (doors, steps, shelves, etc). This process relies on interpretation of archaeological data as described in the previous edition of Buried History (Bowen et al. 2005). Building the 3D environment typically requires a specialised 3D construction program and *Autodesk Maya* was chosen for the recreation of the models featured here. There are a wide variety of possible 3D creation tools available, most capable of creating (approximately) similar results. The choice of programme is largely dictated by the software available to the research team and does not reflect any study done to assess whether *Autodesk Maya* is superior to any other programme in this field.

During the 3D reconstruction process, the constructed 3D environment remains non-interactive within the 3D modelling program. Although changes may be made by the designer, non-technologically oriented users would only be able to view the construction through pre-generated images (Figs 6-12) These pre-generated images are called *renders*; they could be a single image (for example, a jpeg image), or an animated movie (a series of hundreds or thousands of sequential images compressed together).

In order to allow a user to experience the environment intuitively, the 3D data needs to be placed inside a program where interaction can occur. The most common program that displays 3D objects in an interactive environment requires 3D game editors or *game engines*. Publicly licensed versions of these game engines are relatively easy to obtain and use and many derive from the gratuitously violent computer games know as 'first person shooters' [2] where the player runs, jumps and stalks though increasingly challenging game levels while dispatching scores of adversaries with various lethal weapons. These games are remarkable in that they allow real-life understanding of distance, speed, size and relative motion to be translated to a computer screen. While on the one hand it is inspiring to realise that game technologies that were developed primarily to facilitate shoot outs with monsters and villains can be usefully applied to communicate archaeological research, it should be pointed out that 3D games do not necessarily need to be based around violence to be successful. Games such as *Myst* allow the player to wander around a 3D environment, solving puzzles to advance in the game narrative. The popularity of the first person format in these games indicates that a 3D environment is as important as the interaction for the immersion of the player in the virtual world.

Once the 3D objects have been created, the models can be transferred into the game engine, though each model requires reformatting to be correctly interpreted in the virtual environment. For the interactive reconstruction of the houses at Kellis, the *Unreal Engine* and *Virtools* were the game engines of choice. Each of these programs was useful in specific circumstances.

Our analysis of the separate programs indicated the *Unreal Engine* was preferable for reconstructions that have limited interactivity and would be available from a single computer or a network of computers. In these circumstances,

Program	Advantages	Disadvantages
Unreal Engine	• Free version available • Mature, stable software • Easy to use • Many in-built features	• Final project size very large • Requires Unreal Engine to be installed • Limitations to possible interactivity
Virtools	• Allows wide range of complex interactivity • Can be viewed on Internet Explorer	• Problems occur when not using Internet Explorer • Expensive • Complicated to use

Table 1: A list of advantages and disadvantages of Unreal Engine and Virtools.
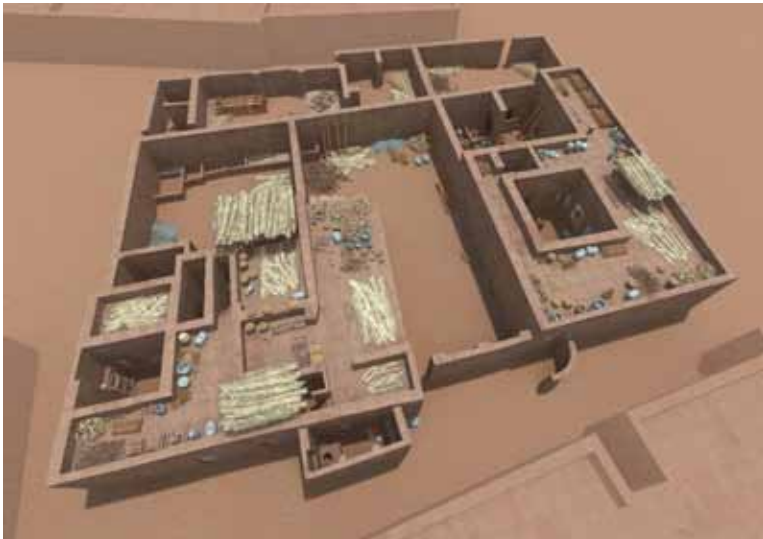
Figure 8: A rendered aerial view of Houses 1-3.

large file sizes would be less problematic. For access to the visualisation via the internet, Virtools was deemed a better solution. A browser (such as Internet Explorer) first loads a small add-in program and the 3D data is loaded onto the user's computer and experienced in the browser window. The speed of the loading depends on the user's internet speed.

Ancient Kellis in the Classroom: Future Developments and 'Game Learning'

We all recall the vivid illustrations of ancient events and daily life in the books we read when we were young. In many ways the small and modest italic captions '*An artists impression of...*' underneath these images belied their interpretive power in visualising a living past. With modern computer graphic technology, these 'impressions' are no longer a static artworks. Recent digital visions of ancient cultures not only retain the colours and detail of printed illustrations; they also *move* and allow students to *play* the part of historical personality and converse with or compete against other players or computer-generated agents. The increasing sophistication of these imagined historic worlds

raises important issues. While the accuracy of such a virtual environment will rely upon archaeological and historical evidence, its appeal and playability might rely upon entirely different considerations, such as the cinematic 'suspension of disbelief'.

Much mention has been made of today's teenagers growing up in a world where computers and the Internet are taken for granted (Oblinger and Obliger, 2005), but less attention has been given to their specific expectations of virtual worlds and three-dimensional (3D) graphics. Whether they view seamlessly integrated digital scenes in the latest movies or play the part of interactive characters in an online game, teenagers today have grown up in a world where 3D graphics are ever present. These digital technologies have matured considerably since the computer game *Doom* and the movie *Jurassic Park* were released in 1993, and the hyped promises of 'Cyberspace' and 'Virtual Reality' made in the mid 90s are quietly becoming realised in forms quite unlike early conceptions.

Over the last decade, three-dimensional (3D) and Interactive technologies have matured to the point where the educational multimedia industry finds itself in a process of massive change. While the costs required to create and animate 3D worlds have decreased considerably, the average teenager's expectations for high impact visuals and complex interactivity in educational multimedia applications have risen significantly and will only continue to do so.

Foreman (2003) sees immersive interactive 3D spaces as the inheritors of the 'passivity and the visual monotony that are the norm in large lectures' because the student engaged in an immersive world has to achieve a set of complex actions to achieve desired learning goals.

Scholars such as Champion (2002) and Forte (2000) have pointed to the hermeneutic and narrative possibilities of

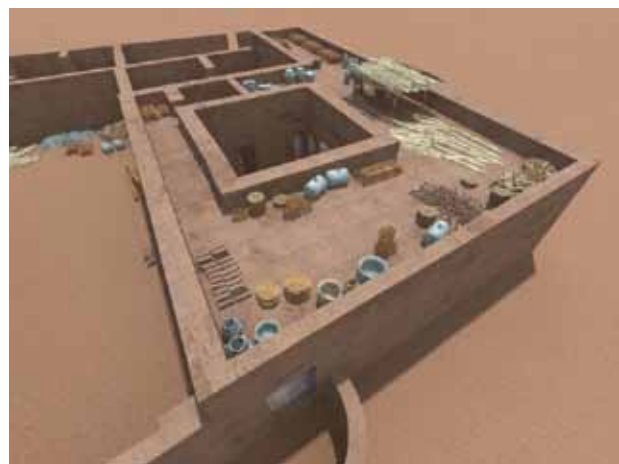*Figure 9: A rendered view of the roofs of Houses 1 and 2.*

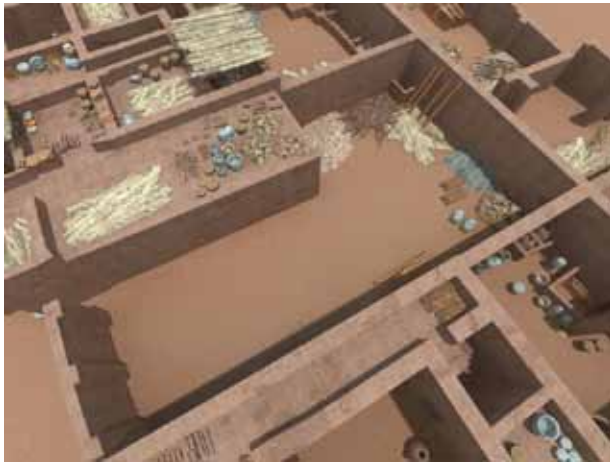*Figure 10: A rendering of the roof of House 3.*

Figure 11: *A rendering of the courtyard of House 2*

Figure 12: *A rendering of the kitchen area in the courtyard of House 3, as from the roof .*

highly graphical, interactive virtual spaces in communicating historic cultures. Their studies represent a small sample of the wider academic debate emerging over the educational potential of 3D interactive spaces in the communication and interpretation of ancient cultures. Certainly the intersection of the virtual archaeology of Ancient Kellis with educational multimedia entails many avenues of ongoing investigation and research. Future applications of this technology may be explored as 'game learning' applications for secondary schools or augmented with GIS databases and detailed photographic and textual descriptions for first year tertiary studies.

However, these further developments depend upon sound foundations. In creating an interactive 3D model of an archaeological site, the groundwork is being laid for more sophisticated applications where layers of information and much more complex interactive features can be realised. It follows that the process of virtual reconstruction is in many senses never complete, for in addition to its translation into a virtual space, each step of digital development must necessarily be followed by reviews from experts in the field. Visitors to the interactive site of Kellis currently online will no doubt note the absence of the people themselves. Because they are heard and not seen and their existence is implied by the presence of their material goods, household industries and storage of food, fuels and animal fodder, these people are experienced by one degree of separation. Certainly the reconstruction and animation of the people at Kellis into a virtual environment constitutes ample material for further research in the coming year.

Colin A. Hope & Gillian E. Bowen
Centre for Archaeology & Ancient History
School of Historical Studies
Monash University

Thomas Chandler & Derrick Martin
Faculty of Information Technology
Monash University

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Endnotes

1   It is also possible that a virtual walkthrough of Kellis may encourage more interest in examining the physical site and further tourist traffic.

2   So called because the player views the world from a first person perspective and usually behind a gun barrel

Public and Private—
Second- and Third-Century Gospel Manuscripts

S.D. Charlesworth

Abstract: Remarkable uniformity in the size of early gospel codices provides evidence for conventional approaches to manuscript production in the second and third centuries. Christians favoured a size approximating the Turner Group 9.1 format in the second century, and the Group 8.2 format in the third century. When combined with other conventional approaches to MS production – semi-literary to literary hands and the use of readers' aids to facilitate public reading – there is much support for the idea that most codices dated up to the early third century were produced in controlled settings (i.e., in small copy centres or scriptoria comprised of at least two trained scribes) for *public* or liturgical use. In contrast, many third-century gospel manuscripts (e.g., 𝔓[45]) bear the hallmarks of uncontrolled production for *private* use.

Early gospel manuscripts (MSS) were used in two general settings—publicly in corporate worship, and privately by individuals. It will be shown that the majority of *second-century* gospel MSS can be designated 'public', in the sense that they were intentionally produced to be read aloud by lectors in Christian meetings. Rightly dividing the continuous lines of letters in ancient texts (*scriptio continua*) in order to break through to the underlying meaning was not easy.[1] In a public setting where immediacy was called for, text division, punctuation and lectional aids could greatly assist the task of the lector (ἀναγνώϲτηϲ). That is why these kinds of readers' aids are found in most second-century gospel MSS. In the *third century*, the number of 'private' gospel MSS increased. In private settings (involving individual use or small 'public' readings for family or friends) where there was leisurely interaction with the text, the need for reader's aids was less pressing. Consequently, text division, punctuation and lectional aids are not present in many third-century gospel MSS.

It will be argued that a correlation can often be discerned between use and production. Again in general terms, early gospel MSS intended for public use were produced in controlled settings (scriptoria), while MSS intended for private use were copied in casual settings where production controls were lacking. That is to say, it is often possible to make a distinction between controlled production for public use and uncontrolled production for private use when it comes to the second- and third-century gospel MSS. But the categories of 'public/controlled' and 'private/uncontrolled' should not be seen as inflexible classifications to be imposed on the evidence. A MS could potentially be used in both public and private settings, or an individual might make or obtain a copy of a 'public' MS for 'private' use or vice versa. Nonetheless, the documentary evidence clearly sustains the notion that gospel MSS were used and produced in broad 'public/controlled' and 'private/uncontrolled' settings.

Scribal Method

Text Division and Lectional Aids

One of the features of Christian MSS in comparison with Ptolemaic and Roman literary texts is the frequent use of text division. The enlargement of the first letter of the first word in a text, new section or clause, the (sometimes unconscious) practice of 'leaving spaces between words or more often groups of words', and the projection into the margin (*ekthesis*) of the first and sometimes second letter of a line following a break in sense or meaning, were all scribal practices borrowed from documentary texts (see Figure 1).[2] Spaces were not used in Ptolemaic and

Figure 1: *Vacant line ends and* ekthesis *in* 𝔓[66] *(P.Bodmer 2) John 2.20-3.*
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Roman literary papyri, and *ekthesis* is generally limited to commentaries and lists of the Roman period.[3] Not of documentary origin are the punctuation and lectional aids (diaeresis, apostrophe, breathings) found in early Christian papyri.[4] These also occur in literary papyri, but less commonly or at least not in the same proportions as in some Christian texts.[5] It should also be noted that punctuation, in the form of the medial or high point (·), dicolon (:), diastole (,), and dash (–), can be seen as both lectional aid and text division marker.[6]

Early Christian scribes also seem to have been influenced by Jewish practices. In the Qumran scrolls the Hebrew text was divided into sections (paragraphs) by spaces in general accordance with a system called *parashiyyot*, which was later used in the Masoretic Text (MT).[7] A vacant line end corresponds to a major sub-division ('open section' in MT) and a space in the middle of a line to a minor sub-division ('closed section' in MT) within the paragraph.[8] Space division into smaller sense (verse) units occurs in only a few Hebrew biblical MSS because these sense breaks were part of the oral tradition of Torah reading in the synagogues (perhaps dating from the second century BC).[9] But verse divisions are marked in the early Aramaic and Greek translations where they were supplemented according to the syntax and conventions of the translation language itself.[10] On the Greek side, the use of spaces for verse division is attested in a number of Jewish Septuagint (LXX) MSS dated to the first century BC,[11] and in many cases smaller groups of words are also indicated.[12]

The *paragraphos* (a horizontal stroke drawn between lines projecting slightly into the margin) marks divisions in four early Jewish LXX MSS,[13] and is also found in other Greek and Aramaic texts and in biblical and non-biblical texts written according to Qumran scribal practice.[14] *Paragraphoi* mark text divisions in the Christian MSS P.Beatty 10 (Daniel and Esther), P.Bodmer 24 (Psalms), Pap. W (Freer) of the Minor Prophets, and occasionally in tandem with vacant line ends in P.Beatty 6 (Numbers and Deuteronomy).[15] Although the *paragraphos* was also used to mark the change of persons in a dialogue or the parts of the chorus in Greek literary texts,[16] whether it is of Greek origin is unclear.[17] At any rate, the degree of Jewish influence on text division in Christian MSS should not be underestimated.[18] It would be remarkable if Jewish scribal conventions used in the production of LXX MSS were wholly ignored by Christian scribes, particularly if gospels were being copied in settings where LXX MSS were also being produced.[19]

Should a lack or paucity of text division, punctuation and lectional aids be attributed to the scribe or his exemplar?[20] Turner reached the general conclusion 'that if punctuation was present in the exemplar it was the first scribe's duty to copy it'.[21] In his important work on the literary roll Johnson found reason to agree with this assessment: 'Substantial portions of details like adscript and punctuation seem to be part of what was traditionally copied, part of the

paradosis'.[22] 'The scribe attempted to copy the "original" punctuation, that is, the sort of bare-bones punctuation existing before reader intervention', but also incorporated 'corrections or additions as he saw fit'.[23] Lectional aids may also have been part of the paradosis, and were copied 'when they appeared to be part of the original copy'.[24]

As regards scribal tendencies in the production of literary rolls, the evidence demonstrates the 'dominance, indeed near uniformity, of professionalism'.[25] But when copying a gospel exemplar, Christian scribes were not copying a literary text into a roll, but something like a 'paraliterary' text into a codex.[26] Nevertheless, a professional scribe trained in copying texts of various kinds and working in a Christian scriptorium, should understand his task involved copying the text division, punctuation and lectional aids in his exemplar. Therefore, paucity or irregularity of text division, punctuation and lectional aids will be taken as an indication that a MS was produced for private rather than public (i.e., liturgical) use, especially when coupled with a documentary or scholarly rather than a literary or semi-literary hand. (We can visualize broad but non-exclusive categories of second- and third-century hands ranging from literary and semi-literary through informal to documentary and scholarly.[27]) Furthermore, rather than just being illustrative of the intent of the scribe, the lack of such features will often be traceable to an uncontrolled production setting.

**The Earliest Gospels:
Representative and Conventional**

It was previously assumed that New Testament (NT) MSS found in Egypt had originated there.[28] But the papyri
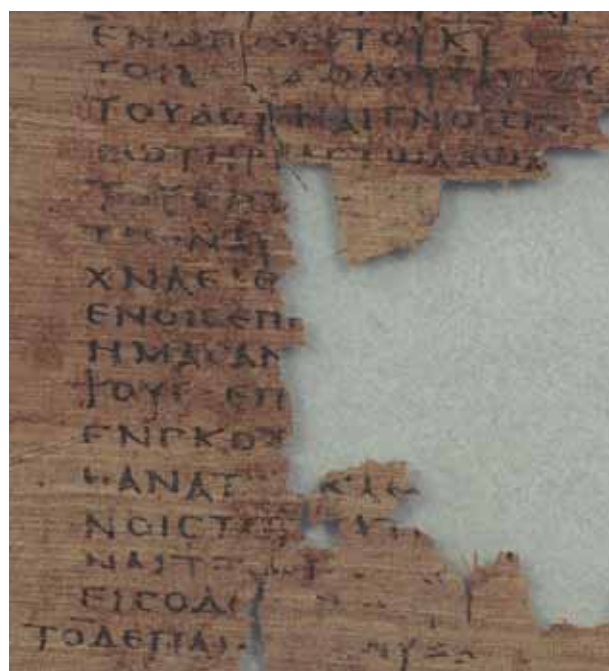

Figure 2: *Formative biblical majuscule on a fragmentary leaf of 𝔓⁴ (Suppl. Gr. 1120 [2]). Lk. 1:74-2:7.*
Reproduced by permission of the Bibliothèque Nationale, France.

in general indicate there was a regular two-way flow of people, letters and literature between Alexandria and the Graeco-Roman world in the early centuries of our era. Non-Christian written material was carried into Egypt from all over the empire.[29] The state postal service in the Hellenistic and Roman periods was reserved for official and military purposes.[30] But the Hellenistic evidence shows that despite potential difficulties (delivery times might increase exponentially if a letter carrier was unreliable or a boat unavailable), private senders were able to find carriers and letters frequently moved with relative ease.[31] In the same way, gospel MSS might easily have found their way to Egypt from elsewhere, the inference being that the early gospel papyri could well be representative of early gospels in general.[32]

It is self-evident that the 'coherence of the early Church must have depended' to some extent on the efficient movement of communications and literature.[33] When pervasive use of the nomina sacra convention[34] and the remarkable Christian preference for the codex as against the roll (particularly for writings regarded as scripture)[35] are added to the equation, there is a strong case for there having been 'a degree of organization, of conscious planning, and uniformity of practice' in the early church.[36] This is further verified by codicological features common to gospel MSS.

In the table below, listed by column for each gospel MS are the size (W × H cm),[37] lines per column,[38] Turner grouping (related to codex size),[39] gospels held (M = Mt., m = Mk., L = Lk., etc.), type of hand (with arrows indicating whether it is closer to a literary/book [bk] or documentary/cursive [doc.] hand; an informal [inf.] hand is in between [↔] these hands), presence of text division, and intended use (public/liturgical or private) and kind of production (c = controlled; u = uncontrolled). The following abbreviations are used: pg. = paragraphos; vac. = vacant line ends; ek. = ekthesis; sp. = space; · = medial/high point; : = dicolon; ' = apostrophe or line filler; > = diple line filler; and / = text division marker or miscellaneous stroke.

Ms.	Size	Lines	T.Gr.	Gospel	Hand	Text Division	Use/Prod.
Second century							
𝔓103	10 × 13-14.5	19/20	10	M	semi-literary, bk←	·	public/c?
𝔓77	11 × 13.5-15	21	10	M	semi-literary, bk←	· pg. vac. ek.?	public/c
𝔓90	12.5 × 15-16.5	22/24	9.1	J	semi-literary, bk←	ek. en. sp.?	public/c
𝔓104	13 × 17-18.5	c. 30	9.1	M	formal round	sp.?	public?/c?
𝔓64+67	13.5 × 17-18.5	36/39	9.1	M	bibl. majuscule	· : ek.	public/c
𝔓52	18 × 22.5	18	5Ab	J	semi-literary, bk←	sp.?	private?/?
Second/third century							
𝔓4	13.5 × 17	36	9.1	L	bibl. majuscule	· : ek. pg.	public/c[40]
𝔓66	14.2 × 16.2	14/25	9	J	decorated round	· : ' > - , vac. ek. sp.	public/c
Third century							
𝔓53	10.8 × 16.5-18	24/25	9.1	M	near doc./cursive	en.	private/u
𝔓108	14.5 × 18.6	23/24	9.1	J	semi-literary, bk←	?	public?/c?
𝔓75	13 × 26	38/45	8	LJ	elegant majuscule	· : > sp. ek. pg.	public/c
𝔓39	13.5 × 26	25	8	J	bibl. majuscule	sp.	public/c
𝔓101	12 × 24.5-26	32/33	8	M	non-literary, →doc.	nil	?/?
𝔓69	12-14 × 30.5-32	45	8.1	L	inf., bk↔doc.	?	private/u
𝔓95	12 × 20-21.5	35/36	8.2	J	bibl. majuscule	nil	private?/u?
𝔓107	12 × 22.5-24	33/34	8.2	J	semi-cursive, doc.	?	private/u
𝔓106	12 × 24	35/36	8.2	J	non-literary, →doc.	nil	private/u
𝔓70	13 × 23-24.5	26	8.2	M	semi-literary, bk←	?	private?/u
𝔓109	13 × 23.5-25	25/26	8.2	J	non-literary, unprof.	nil	private/u
𝔓1	13 × 24-25.5	37/38	8.2	M	inf., bk↔doc.	·	private?/u?
𝔓5	13 × 24-25.5	27	8.2	J	semi-literary, →doc.	sp.	public/c
𝔓28	14 × 22.5-24	25/26	8.2	J	→doc./cursive	nil	private/u
𝔓111	15.5 × 22.5-24	22	7	L	semi-doc.	nil	private?/u?
𝔓45	20 × 25	39/40	4	M-J	elegant majuscule	· /	private/u
0171	11-12 × 15	24	X15-12	ML	careful majuscule	/ sp.? vac.? ek.	private/u?[41]
𝔓22	ROLL c. 30 H	47/48	-	J	→doc./cursive	nil	private/u
Third/fourth century							
𝔓37	16 × 25.5-27	33	7	M	doc./cursive	sp.? /	private/u
𝔓102	12 × 26.5-27	34/35	8	M	semi-literary, bk←	·	public/c
𝔓7?	15 × 22	18	7.1	L[42]			

If we focus for a moment on the first dozen or so papyri, the first thing to be noted is the small size of second-century gospels. This appears to support the proposition that portability and hence transportability played a significant part in *earliest* (i.e., first and second century) Christian preference for the codex. Second, if the Turner Group 10 is considered a sub-group of Group 9,[43] there is very remarkable uniformity in the sizes of gospel codices in each century. Based on the extant evidence, there is no question that Christians favoured a size approximating the Group 9.1 format (B13-15 × H at least 3 cm higher than B) in the second century, and the 8.2 Group format (B12-14 × H not quite twice B) in the third century. Third, conventional Christian approaches to MS production – uniformity in size, hands in the semi-literary to (formative) biblical majuscule range (see Figure 2),[44] and the use of text division to facilitate easy public reading – support the idea that most of the first dozen or so codices were produced in controlled settings, i.e., in small copy centres or scriptoria comprised of at least two scribes.[45] Where these factors are present *as a group* (as in 𝔓[77], 𝔓[90], 𝔓[64+67], 𝔓[4], 𝔓[66] and 𝔓[75]) controlled production is certainly taking place. There is every reason to believe such scriptoria existed in the second century in important Christian centres such as Antioch, Alexandria, Caesarea, Jerusalem and Rome, especially in those cities with libraries.[46] Fourth, although certainty is difficult, the aberrant sizes of 𝔓[52] and 𝔓[45] (the latter is discussed below) suggest production in private/uncontrolled settings. The remaining third-century gospel codices also seem to fall into the same category. Paradoxically, standard sizes were still preferred suggesting that in most cases Christian fashion was strong enough to dictate size even as the number of private copies of the gospels proliferated. This in turn supports the argument that there were conventional textual practices at an early time, at least in the East.[47]

Scribal Milieu

A Public/Liturgical MS: 𝔓[75] (P.Bodmer 14-15)

Turner argues that some Christian MSS were written with larger characters to make public reading easier. Comparable codices of Greek prose literature contain significantly more letters per line than both 𝔓[66] and 𝔓[75]. Such MSS, he says, are 'the work of practiced scribes writing an ordinary type of hand, but writing it larger than usual'.[48] Thus, the spacious script of 𝔓[66] appears to be stretched horizontally (see Figure 1).[49] As well, no traces of any *kollesis* (the join of two pages) are visible in the Bodmer photographs of the MS, suggesting that the final physical form or appearance of the codex was an important consideration.[50] So in 𝔓[66] we have a codex designed to take a central place in public worship.

Although they are not as pronounced, the same features can be seen in 𝔓[75] which preserves in good condition significant parts of Luke and John.[51] The page measures 13 × 26 cm, so the open codex had a square shape. According to Turner, a Group 8 book of these dimensions was intentionally manufactured (B = ½ H).[52] The hand

of 𝔓[75] is an elegant, careful, upright majuscule.[53] Some letters, such as o and ω, are much smaller than average. There are 38-45 lines to the page (only 3 pages have under 40 lines and the average is 42[54]) and 25-36 letters to the line.[55] Since this is a single-quire codex, as he proceeded the scribe wrote progressively smaller apparently in an effort to fit everything in. Martin and Kasser note that the number of lines is considerably more in the second half of the codex.[56] Nonetheless, Turner still regards 𝔓[75] as another example of a Christian MS written in a larger script for reading aloud.[57] The margins are quite generous and the occasional *kolleseis* can be seen on the photographs, but their relative paucity is another indication that this codex was for use in public worship.

Punctuation takes the form of high, medial and low points, but if any rationale governs the different heights it is difficult to discern.[58] The diaeresis or trema[59] over initial ι and υ is used frequently but not systematically, and heavy breathings are often used over pronouns to differentiate them from homonyms.[60] Semitic names are marked with an apostrophe or point,[61] and the former is also used after ουκ and between double consonants,[62] again probably 'in the interests of clarity of pronunciation' in public reading.[63]

The point followed by one or more vacant spaces and one-letter *ekthesis* on the following line is the usual method of chapter and paragraph division.[64] However, the dicolon and *paragraphos* are used very occasionally in lieu of or with other markers. In comparison with the Nestle-Aland *Novum Testamentum Graece* (NA[27]), about two-thirds of chapter breaks and one-third of paragraph breaks are marked in the non-fragmentary pages of the MS. More noteworthy is the consistently high rate of verse division corresponding to NA[27]. The rounded percentages of marked as against unmarked verse breaks per chapter are as follows: (Lk. 10) 82 : 18; (11) 93 : 7; (12) 98 : 2; (13) 94 : 6; (14) 94 : 6; (15) 72 : 28; (16) 71 : 29; (22) 72 : 28; (23) 82 : 18; (Jn. 1) 70 : 30; (2) 72 : 28; (3) 75 : 25; (4) 81 :19; (5) 64 : 36; (8) 86.5 : 13:5; (9) 77.5 : 22.5; (10) 86 : 14.[65] On average, therefore, the verse breaks in 𝔓[75] agree with those in NA[27] about 80 percent of the time.[66] We are therefore more than justified in seeing the text divisions in 𝔓[75] as ancestors of those found in the great codices Vaticanus (B 03; Rome, Vatican Library, Gr. 1209) and Sinaiticus (א 01; London, British Library, Add. 43725).[67]

A Private/Non-Liturgical MS: 𝔓[37] (P.Mich. 3.137)

If we were to imagine a range of hands starting at the literary end with the formative biblical majuscule of 𝔓[4], at the opposite extreme we would find the documentary hand of 𝔓[37] (see Figure 3).[68] The papyrus is comprised of two fragments which 'have been joined to make a single leaf written on both sides' which measures 13.5 × 22.4 cm and preserves Mt. 26:19-37 (↓) and 26:37-52 (→).[69] There were originally 33 lines per page and based on the extant text the column measured about 13 × 23 cm and the page 16 × 25.5-27 cm (Turner's Group 7).[70]

Figure 3: 𝔓³⁷ *(P.Mich. 3.137↓). Mt. 26:19-37.*
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University of Michigan, Ann Arbor..

The hand is a very informal cursive, and according to Sanders 'every letter seems to present most of its conceivable forms'. He concluded that the writer was educated but 'not a practised scribe' and found parallel hands in documentary papyri.[71] There is only one rough breathing (↓*l* 8), but the trema is used regularly over initial ι (and once over a medial ι, ↓*l* 11). There is a correction at ↓*l* 12 where εκαλαϲεν was written, then the whole word except for the augment was crudely crossed out and κλαϲεν written by the same hand[72] above the crossed out letters (see Figure 4). This gives an impression of haste, as though the whole document was written very quickly for personal use.

The writer used no punctuation, but at times seems to have left spaces between words or letters that coincide with NA²⁷ verse breaks (vv. 21, 23, 27, 30, 31, 42, 44, 46, 50, 51), or that appear to introduce speech (↓*l* 25, →*l* 5) or function like commas (→*ll* 12, 20). However, other verse breaks are not so marked (vv. 22, 24, 25, 26, 29, 32, 33, 36, 38, 40, 41, 43, 45, 49), and two vacant spaces in the text appear not to serve any function (↓*ll* 6, 8). So while some vacant spaces appear to function as punctuation, that may often be more by accident than design, the chance result of a rapidly written hand.

Sanders thought a second hand added the short raised strokes where spaces had been left at the end of phrases.[73] Certainly, a space and stroke sometimes occur together where the text corresponds to a paragraph (v. 31) or verse (vv. 23, 27, 30, 42, 46, 51) break in NA²⁷, but strokes are not present in a number of places where spaces have been left (↓*ll* 6, 8, 25; →*l* 12), and both 'markers' are also lacking in two places (vv. 38, 45). Moreover, although strokes often correspond to paragraph and verse breaks (vv. 22, 23, 27, 29, 32, 33, 36, 40, 41, 42, 43, 44, 46, 49, 51) or verse sub-divisions (vv. 22, 25, 26, 27, 39², 40, 41, 42, 44², 45, 50) in NA²⁷, just as often there is no verse sub-division correspondence (vv. 21², 22², 24, 25, 26², 27², 31, 32, 33, 36, 39, 40², 45³, 46, 47²), or apparent sense divisions are nonsensical (vv. 24², 42², 43).

It is the last category in particular that calls into question the idea that the strokes may have assisted with reading in public.[74] However, if the MS was altered by a second hand for liturgical usage, it was a private MS produced in an uncontrolled setting that was subsequently modified. The first hand is undoubtedly documentary and by no means bilinear, and for both reasons far from suitable for public reading. The second hand has attempted to insert, or perhaps to clarify or supplement, text division in the MS,[75] but a number of the strokes appear to be study aids that mark something of interest in the text. So the modified MS was probably also for private use.

𝔓⁴⁵ (P.Beatty 1[76] and P.Vindob. G. 31974[77]): Public or Private?

Preserving the four gospels and Acts, 𝔓⁴⁵ is comprised of 30 fragmentary leaves of a codex dated *c*. 250. Not one complete page survives; the top of the single column is intact in most cases, but the column bottom is missing on every page. In Luke and John the whole column or one side of it survives, but in Matthew and Mark both sides of the column are damaged.[78] Each page measured *c*. 20 × 25 cm (Turner's Group 4).[79] Judging from leaves 25-30 the upper margin was around 3.2 cm and the lower probably more; the inner margin where it is twice preserved is 1.9 cm, and Kenyon estimates that the outer margin was about 2.5 cm.[80] This means the written area was about 15.5 × 19.5 cm. On

Figure 4: Rapid correction in 𝔓³⁷ *(P.Mich. 3.137↓).*
Portion of Mt. 26:19-37.
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University of Michigan, Ann Arbor.

reconstructed figures there were 39/40 lines per page and 50 characters per line.[81]

Skeat calculates the codex would have contained 56 sheets or 224 pages (Mt. 49, Jn. 38, Lk. 48, Mk. 32, Acts 55).[82] The scribe managed to fit the gospels and Acts into a codex of this size only by using a small script and a larger page and written area.[83] Kenyon describes the script as 'small and very clear', approximately square (in height and width), 'very correct, and though without calligraphic pretensions, … the work of a competent scribe'. Although 'characteristic of good Roman hands', it has a marked slope to the right.[84] In fact, the hand is more impressive in person than the photographs in his edition can manage to convey. It is an attractive and very competent hand that is certainly not bereft of literary style. Zuntz observes that the scribe's hand is 'on the whole amazingly even, and his practice with regard to orthography [and] punctuation … astonishingly consistent'.[85]

Colwell concluded that the editorial activity in this MS is indicative of an uncontrolled tradition.[86] The scribe feels no need to reproduce exactly his exemplar and freely omits words and recasts the text in the interests of conciseness, clarity and style. Clarification also motivates the scribe of $\mathfrak{P}^{75}$, but most of the time is overcome by the desire to make an exact copy.[87] In contrast, the copying in $\mathfrak{P}^{66}$ is careless, but numerous corrections against a second exemplar are indicative of conscientious efforts to produce a good final copy.[88] Therefore, it is fairly certain the scribe of $\mathfrak{P}^{45}$ rather

Figure 5: Intrusive strokes in $\mathfrak{P}^{45}$ (P.Beatty 1). Portion of fol. 5ᵛ (Mk. 7:3-15)

than the exemplar is responsible for the contents of the MS. This conclusion is supported by the unfashionable page size, the small script and compressed layout, the small number of corrections,[89] and the absence of *ekthesis*, spaces and the *paragraphos*. This lack of the kinds of text division characteristic of controlled settings seems to mark the MS as an individualistic early witness.

Rough breathing is sometimes used with the article and relative pronouns, and the trema is used regularly over initial ι and υ (sometimes appearing as a small line over υ).[90] The text is divided by inconsistently employed medial points and acute-like raised strokes of variable length which appear more regularly.[91] The latter are often thick, intrusive and rough, and in marked contrast to the elegant hand (see Figure 5). The only strokes that approach the size of this division marker in Mark are the downward strokes on α and δ, but they are not as thick. There is no doubt that the markers were produced by a different reed and probably a different hand at another time and place.[92] If the markers were made during production, they would have spoiled the efforts of the first scribe to produce an attractive MS. This goes a long way towards ruling out contemporaneity.

The probable reason they were added is inconsistency in the usage of the medial point by the first scribe. In the few small fragments of Matthew that are preserved, medial points have been inserted quite regularly[93] to mark verse breaks or verse sub-divisions (many of which correspond to those found in NA²⁷). Apparently because this was the case the second hand did not add any raised strokes. This is, however, no guarantee that the same situation pertained in the rest of Matthew. In contrast, in the early fragmentary folios of Mark the first copyist neglected to mark text division with points, so a second hand added strokes to indicate verse breaks or sub-divisions.[94] From Mark 7:36 points begin to appear occasionally but not consistently at the end of verses, so it seems the second editor decided to continue the use of strokes (see Figure 6 which shows the stroke being added, sometimes where medial points had already been placed). In Luke and John points were used with moderate consistency by the first copyist, and for this reason strokes were probably not entered by the second hand.[95] But once again, there is no way of knowing if this was the case throughout both of these books.

In Acts the first copyist again ceased using medial points and raised strokes are reintroduced by the second hand. From the end of 6:9 the strokes become small, dark oval blobs and then dots which Kenyon records as high points in his edition.[96] The scribe apparently decided to decrease the size of the division marker while continuing to use the same reed.[97] There is little doubt, however, that the same second hand is again at work, because although the strokes are generally shorter and thinner from this point (than in Mark), small raised ovals or blobs also occur along with the occasional longer stroke (of Mark) from fol. 27ʳ onwards.[98]

The irregular text division in $\mathfrak{P}^{45}$ is more indicative of a MS made for private use,[99] than one 'intended for the edification
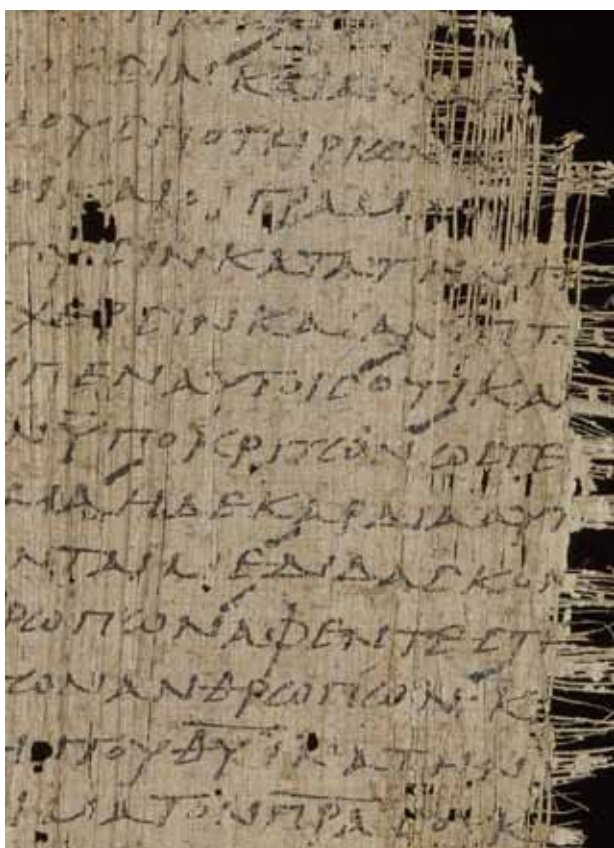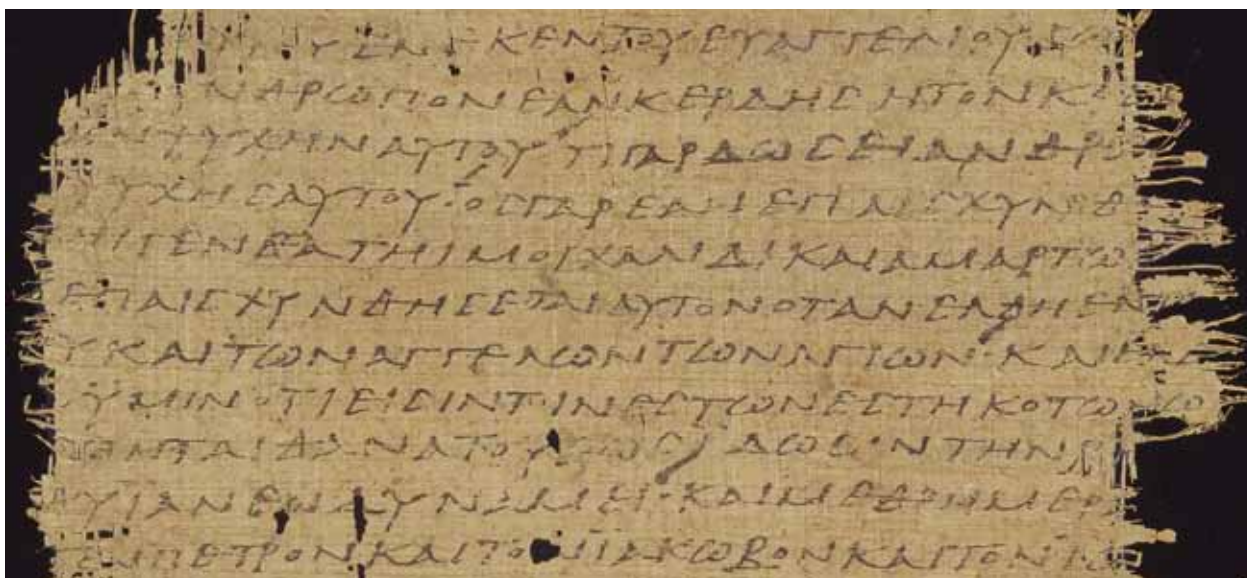
Figure 6: *Strokes added above points in 𝔓⁴⁵ (P.Beatty 1). Portion of fol. 7ʳ (Mk. 8:35-9:8).*

of an ecclesiastical readership' as has been suggested.[100] Certainly, the paucity of the original punctuation/text division along with the small hand, compressed layout, and the odd size of the codex (when pressure to conform to third-century fashion or expectations in terms of size must have been significant[101]), appear to rule out an intended liturgical use. As far as text division or punctuation is concerned, at times the scribe is completely indifferent to the needs of any prospective lector. In stark contrast, the later addition of the intrusive strokes in Mark underlines the importance of reading aids if MSS were to be read publicly. Despite the fine hand, all of these factors when combined with the very paraphrastic modus operandi of the scribe and the lack of correction against the exemplar or another MS in order to ensure accuracy, suggest production in an uncontrolled setting. Although the text division in 𝔓⁶⁶ can be almost as inconsistent at times, none of these other factors comes into play.

Elaborating on Public and Private Production Settings

Ancient literary works were distributed as individuals borrowed and copied texts owned by their friends.[102] Copies might be made by hired scribes or by the one borrowing. This was probably also the case when individual Christians wanted copies of gospels for *private* use. However, the third-century evidence supports the proposition that when private borrowing and casual copying took place, the gospels borrowed and copied generally had private characteristics; i.e., they lacked text division, punctuation and lectional aids. In other words, private/uncontrolled production usually involved the copying of private rather than public MSS. Indeed, the MS evidence demonstrates that by the third century the majority of copying was private and uncontrolled and probably took place at a distance from major Christian centres.

In contrast, Christian scriptoria in major centres would have maintained master copies of *public* gospel MSS. Though several different copies of each gospel may have been held, greater consistency in the transmission of public features (text division, punctuation and lectional aids) characterised controlled production in Christian scriptoria. This would apply regardless of who was doing the copying in uncontrolled or casual settings. Clergy, educated church members, slaves or freedmen of wealthy Christian estates, or Christian public officials or business people accustomed to writing, might undertake private production.[103] There may have been scribes trained to a level consistent with guild membership[104] among these groups, and non-Christian scribes might also be commissioned to do the work,[105] but in all likelihood they would have been copying private MSS.

Early Christian texts were not products of the book trade,[106] but the idea that there were not private texts among them[107] cannot stand up to scrutiny. As far as casual copying is concerned, there is no reason to think that writing or access to writing tools[108] was limited to scribes.[109] When students at school progressed from the first two levels of letters and alphabet to syllabaries, lists of words and writing exercises, papyrus and its requisite tools were needed.[110] Though expensive for ordinary villagers or farmers, papyrus was quite affordable in higher social contexts.[111] The school papyri from villages and towns as against *metropoleis* come from the social level represented by 'landowners, soldiers, businessmen and so on'.[112] So a limited number of individuals went to school, and most did not stay 'long enough to develop firm habits of writing'.[113] But three years was long enough to learn to read and write slowly, and a range of abilities should be envisioned even at this stage of literacy.[114] Some pupils in the larger cities and also in the larger villages reached 'rather high levels' of instruction.[115]

Although many probably came from the middle class,[116] private writers of modest ability and income certainly existed. Apollonios and his brother Ptolemaios, who lived in the Memphite Serapeum in the mid-second century BC, were able to copy Greek literature with different levels of ability.[117] Apollonios, the younger and more proficient writer with an education extending 'somewhat beyond the primary level', was capable of writing letters to officials. He joined the army and eventually became assistant to the chief of police on the necropolis.[118] In a similar vein, Apion, a new recruit to the Roman army in the second century AD, wrote to his father at Philadelphia in large, round capable letters that resemble a teacher's hand. All of the indications are that he had 'at least some grammatical' or secondary education.[119]

Though early Christian papyri are few in number,[120] in the early third century a certain 'Antonius Dioskoros, son of Horigenes from Alexandria', was considered suitable for minor public office in his home town of Arsinoe. Like the other applicants he was 'an urban shopkeeper or craftsman of moderate means', but he was also a Christian. His double name 'after the Roman fashion, with a Roman *gentilicium* and Greek *cognomen*', and the Alexandrian connection suggest a social position somewhat above the other candidates.[121] Generally speaking, administrative officials had duties requiring literacy, and Antonius Dioskoros should not be seen as an isolated example.[122] He might also have been among those who attended a church conference held at Arsinoe in the third century.[123] At the conference the bishop of Alexandria called together the presbyters and teachers of the surrounding villages to examine a book containing the millenarian teachings of a former local bishop. Clearly, 'Egyptian priests were not the only ones assiduously reading and interpreting [and *copying*] religious texts in the villages of the Fayum'.[124] Moreover, despite its privileged Greek constituency and large bureaucracy, the situation in Roman Egypt may not have been so atypical,[125] and is probably comparable with areas of limited hellenization (e.g., Thrace, Galatia, Cappadocia, Syria, Judaea, Arabia) where literacy was generally confined to specific 'social and geographic milieus'.[126]

When working from a provided exemplar rather than an in-house master copy, trained scribes working in Christian scriptoria would understand their task involved copying text division, punctuation and lectional aids where they were original to the exemplar. If they were lacking in the exemplar, they could be inserted at sense breaks or from a second MS (an in-house master copy).[127] In contrast, in a private/uncontrolled setting untrained copyists would not attach the same importance to reproducing readers' aids and would be more likely to overlook or reproduce them only some of the time. The same could probably not be said of Christian scribes working in secular public settings, of commissioned non-Christian scribes, or indeed of *trained* copyists among the clergy, church or public officials, educated Christians, or slaves and freedmen of wealthy Christians. That is why it is not possible to insist-

ently equate the public/controlled and private/uncontrolled categories with professional/trained scribes and untrained copyists respectively. When gospel MSS were produced in private/uncontrolled settings, trained scribes with apprenticed training sufficient for guild membership could be involved.[128] But the evidence strongly suggests that in most cases such scribes would be working from gospel exemplars with private characteristics. The needs of the customer in terms of projected non-liturgical use might also 'govern the presence or absence of lectional signs'.[129]

It should also be said that in both public/controlled and private/uncontrolled production settings there were different levels of trained copying ability.[130] Some scribes were capable of calligraphy or shorthand (*tachygraphy*), while others were limited to documentary work.[131] So in the event that a public gospel MS was copied in a private/uncontrolled setting, it is certainly possible that transmission of readers' aids could be adversely affected. MSS like $\mathfrak{P}^{103}$, $\mathfrak{P}^{104}$ and $\mathfrak{P}^{108}$ could fall into this category. In addition, in some areas churches might have had no option but to use gospel MSS with predominantly private characteristics in public worship. In such cases lectors would need to have become very familiar with the contents of the text. But the evidence shows that this level of familiarity must have been the exception rather than the rule. The use and consolidation of text division, punctuation and lectional aids in second- to fourth-century public MSS, the adding of stroke division markers to $\mathfrak{P}^{37}$ and $\mathfrak{P}^{45}$, and even the much later shift to minuscule script, all demonstrate that a gospel text with private characteristics was difficult to read and/or memorize. When nothing better could be obtained, MSS with private characteristics were no doubt used in rural churches. Indeed, the steep increase in private copying in the third century was probably linked to an increase in the number of churches. Nevertheless, reading of private gospels in public settings would have been compromised by the inherent deficiencies of the MSS themselves. This is underscored by the text division, punctuation and lectional aids that facilitated the liturgical use of second- and second/third-century gospel MSS (with the exception of $\mathfrak{P}^{52}$ and possible exception of $\mathfrak{P}^{104}$).

But in many cases churches must have been able to obtain gospel MSS for liturgical use from Christian scriptoria in major urban centres. Most of the earliest gospels were copied within broad conventional parameters, and control was present in the form of checking and correction.

> The churches in Rome, Antioch, Caesarea, and Alexandria (to name only the most obvious) were probably centers almost from the beginning for the composition of Christian writings and also for the confluence of Christian writings composed elsewhere. By virtue of possessing both texts and regional influence, these communities would have been instrumental in the further circulation of Christian literature.[132]

Gamble adduces as evidence the rapid reproduction and distribution of the letters of Ignatius, bishop of Antioch, at

the beginning of the second century, and of *Hermas* which circulated in Alexandria and provincial Egypt and at the same time in Gaul and North Africa 'well before the end of the second century'.[133] Thus, 'larger Christian communities, such as Antioch or Rome, may have already have had scriptoria [where two or more scribes operated] in the early second century'.[134] The role of Polycarp, bishop of Smyrna, in distributing Christian literature, also leads him to suggest that minimalist scriptoria may also have existed at Smyrna and Oxyrhynchus towards the end of the second century. 'If so, that is all the more reason to postulate scriptoria in Alexandria and other Christian centers at an earlier time'.[135] That such a reasonable picture of an inter-connected early church should occasion controversy is due in large degree to the disproportionate influence of perspectives that over-draw the amount of diversity in early Christianity.[136] Much early Christian literature is clearly written with a wide readership in mind, e.g., the Apocalypse and the catholic and pseudonymous epistles.[137]

Conclusion

It seems as the number of churches and the demand for gospel MSS increased, so did the number of gospels produced in private/uncontrolled settings. Space does not allow examination of other MSS that have been designated private. But 𝔓[45] has demonstrated that there are sometimes a number of complicated factors to be weighed against each other when deciding whether a particular MS is 'public' or 'private'. Although there was clearly variation in the use of lectional aids and text division markers in particular,[138] conventional textual and codicological features when considered as a group are important indicators of the setting in and purpose for which gospel MSS were produced. Such knowledge also provides an additional way of weighing the reliability of textual witnesses. The same controls were not in place when gospel MSS were copied privately in casual settings.

The influence of convention on production of the four gospels in the second and third centuries can be seen in preference for the codex in certain sizes, the ubiquitous presence of the *nomina sacra* convention, and the use of text division, punctuation and lectional aids.[139] Thus, when third-century gospel MSS lack reading aids and text division, it is likely that private/uncontrolled copying and/or production for non-liturgical use are responsible. As the canonical status of the four gospels was cemented in the third century, it was to be expected that uncontrolled copying of gospel MSS for private use would increase. Uncontrolled copying can be discerned in poor quality hands, an absence of collation, correction, or similar quality control, and in scribal approaches that take excessive liberties with the text. Thus, even an impressive MS like 𝔓[45] can be designated private.

S.D. Charlesworth
University of New England
Armidale NSW 2351

Endnotes

1   See H.Y. Gamble, *Books and Readers in the Early Church* (New Haven and London: Yale University Press, 1995) on the private use of Christian books (231-7) and the difficulties of reading *scriptio continua* (203-4, 228-30). On the latter see also R. Cribiore, *Writing, Teachers and Students in Graeco-Roman Egypt* (*American Studies in Papyrology* 36; Atlanta: Scholars Press, 1996) 148-9; and id., *Gymnastics of the Mind: Greek Education in Hellenistic and Roman Egypt* (Princeton: Princeton University Press, 2001) 190, 203, where it is noted that teachers used syllable and word division, enlarged initial letters and other aids to make texts 'user-friendly' for beginner students, and presented the same texts in *scriptio continua* to more advanced students.

2   C.H. Roberts, *Manuscript, Society and Belief in Early Christian Egypt* (Schweich Lectures, 1977; London: Oxford University Press, 1979) 14-18. Enlargement of initial letters also accentuates lines in some school texts written by teachers: see Cribiore, *Writing*, 99.

3   See Roberts, *Manuscript*, 16-8, for examples, and see n. 19 below. Cf. E.G. Turner, *Greek Manuscripts of the Ancient World* (Oxford: Clarendon Press, 1971) 9-10.

4   Roberts, *Manuscript*, 21 and n. 4. The use of accents is rare.

5   The following details are taken from Roberts, *Manuscript*, 21-2.

6   For discussion of the various punctuation and lectional signs see Turner, *Greek Manuscripts*, 9-14; and L. Threatte, *The Grammar of Attic Inscriptions*, vol. 1: *Phonology* (Berlin: de Gruyter, 1980) 73-98. For a dated survey of the use of text division markers and punctuation in John 13:31-16:33 in NT MSS up to the fourth century AD see P. Gächter, 'Zur Textabteilung von Evangelienhandschriften', *Biblica* 15 (1934) 301-20.

7   E. Tov, *Textual Criticism of the Hebrew Bible* (2nd ed.; Fortress: Minneapolis, 1992) 210-11; cf. 51-4.

8   E. Tov, *Scribal Practices and Approaches Reflected in the Texts Found in the Judean Desert* (*Studies on the Texts of the Desert of Judah* 54; Leiden: Brill, 2004) 143-9.

9   Tov, *Scribal Practices*, 135-40, 159-62.

10 Tov, *Scribal Practices*, 135-40, 159-62.

11 P.Ryl. 3.458, P.Fouad inv. 266a-c, 4QPapLXXLev[b], 4QLXXNum, 8HevXIIgr, P.Oxy. 50.3522, and P.Yale 1.1: see Tov, *Scribal Practices*, 299-315, esp. 304-5, 311.

12 Tov, *Scribal Practices*, 304-5. The point is also found in P.Ryl. 3.458 and P.Yale 1.1 and may have been added later (311). In 8HevXII gr and P.Fouad inv. 266 a small vacant space followed by an enlarged letter marks a new phrase, while verses are denoted by larger spaces (Roberts, *Manuscript*, 18 and n. 3). Cf. A. Millard, 'Ancient Abbreviations and the *Nomina Sacra*', in C. Eyre *et al.* (eds.), *The Unbroken Reed: Studies in the Culture and Heritage of Ancient Egypt in Honour of A.F. Shore* (London: Egypt Exploration Society, 1994) 224.

13 4QLXXLev[a], P.Fouad inv. 266b, 4QPapLXXLev[b], 8HevXIIgr: Tov, *Scribal Practices*, 304.

14 Tov, *Textual Criticism*, 216; cf. 108-11.

15 Tov, *Scribal Practices*, 305-6.

16 Turner, *Greek Manuscripts*, 10.

17 According to Millard ('Ancient Abbreviations', 224) the use of the *paragraphos* 'in the fifth century BC Aramaic papyrus of Ahiqar casts doubt on the opinion that it is probably Greek in origin'. Cf.

C.H. Roberts, 'Books in the Graeco-Roman World and the New Testament', in P.R. Ackroyd *et al.* (eds.), *The Cambridge History of the Bible* (3 vols.; Cambridge: Cambridge University Press, 1963-70) 1.49.

18 Though used in only a small number of early LXX MSS, *ekthesis* is also attested: 8ḤevXIIgr, P.Oxy. 54.4443, P.Scheide + P.Beatty 9 (Tov, *Scribal Practices*, 161). Cf. the palaeographical analysis of 8ḤevXII gr by P. Parsons in E. Tov in collaboration with R.A. Kraft, *The Greek Minor Prophets Scroll from Naḥal Ḥever (8ḤevXIIgr) (The Seiyal Collection I)* (*DJD* 8; Oxford: Clarendon, 1990; reprinted with corrections 1995) 19-26, esp. 23-4.

19 Cf. Gamble (*Books and Readers*, 224-31) where the influence of synagogue practice on public reading in early Christian worship is discussed. R.A. Kraft, 'From Jewish Scribes to Christian Scriptoria: Issues of Continuity and Discontinuity in Their Greek Literary Worlds' (paper presented at the Society of Biblical Literature annual meeting, San Antonio, Nov. 2004; see http://ccat.sas.upenn.edu/rs/rak/earlylxx/ SBL2004.htm, accessed 27 Feb. 2007) suggests that Jewish scribes may have been influenced by the text division markers used in Graeco-Roman commentaries and paraliterary texts (cf. the discussion accompanying n. 3 above), and then in turn influenced Christian scribes.

20 Cf. the small amount of evidence for female scribes prior to the fourth century in K. Haines-Eitzen, *Guardians of Letters: Literacy, Power, and the Transmitters of Early Christian Literature* (New York: Oxford University Press, 2000) 41-52.

21 Turner, *Greek Manuscripts*, 12.

22 W.A. Johnson, *Bookrolls and Scribes in Oxyrhynchus* (Toronto: University of Toronto Press, 2004) 8 (cf. 15-37, esp. 35).

23 Johnson, *Bookrolls*, 58-9. Cf. "As a rule, scribes copied the divisions between section units from their *Vorlagen*, but they sometimes deviated from them, and it is difficult to determine under which conditions they did so.... Beyond this description, scribes must have felt free to change the section divisions of their *Vorlage* and to add new ones in accord with their understanding of the context' (Tov, *Scribal Practices*, 150; regarding section divisions in Hebrew MSS).

24 Johnson, *Bookrolls*, 36. Later readers often added 'breathings, accents and adscripts, just as they added punctuation', so 'in the case of lectional aids it seems the scribe copied from his model the essentials, but remained attentive to the need to reproduce a clean, unencumbered text' (36).

25 Johnson, *Bookrolls*, 160.

26 The similarities to Graeco-Roman commentaries have been alluded to above. On commentaries see Turner, *Greek Papyri*, 112-24.

27 Cf. Johnson (*Bookrolls*, 102; cf. 161), whose three categories parallel those listed here: '(1) formal, semi-formal, or pretentious, (2) informal and unexceptional (but for the most part probably professional), (3) substandard or cursive'. The vast majority of literary rolls in his samples fall into the first and second categories. On the 'rapid, informal hand' of scholars and other identifying marks of scholarly texts see Roberts (*Manuscript*, 15, 25, 66) and Turner (*Greek Papyri*, 92-4).

28 See, for example, K.W. Clark, *The Gentile Bias and Other Essays* (Leiden: Brill, 1980) 127: 'All the manuscripts so far discovered, including the most sensational of recent discoveries, may enable us to recover no more than the early text in Egypt'.

29 E.G. Turner, *Greek Papyri: An Introduction* (rev. ed.; Oxford: Oxford University Press, 1980) 50-1, 96.

30 See S.R. Llewelyn with R.A. Kearsley, *New Documents Illustrating Early Christianity* (Macquarie University, Sydney: Ancient History Documentary Research Centre, 1994) 7.1-25.

31 See E.J. Epp, 'New Testament Papyrus Manuscripts and Letter Carrying in Greco-Roman Times', in B.A. Pearson *et al.* (eds.), *The Future of Early Christianity: Essays in Honor of Helmut Koester* (Minneapolis: Fortress, 1991) 35-56, esp. 43-51. See also Llewelyn, *New Documents*, 7.26-57; and id., 'Sending letters in the ancient world', *Tyndale Bulletin* 46 (1995) 337-56.

32 Cf. Roberts, *Manuscript*, 18. Chance preservation also applies in the case of Christian MSS that escaped deliberate destruction. This adds weight to the possibility that the gospel papyri are representative.

33 Roberts, 'Books in the Graeco-Roman World', 64.

34 Of around 300 Christian MSS earlier than AD 300 the number without *nomina sacra* 'can be counted on the fingers of our two hands': L.W. Hurtado, '𝔓52 (P. Rylands Gk. 457) and the *Nomina Sacra*: Method and Probability', *Tyndale Bulletin* 54 (2003) 5 (1-14). By convention, the Greek words for the divine names and/or titles, 'God' (θεός), 'Lord' (κύριος), 'Jesus' ('Ιησοῦς), and 'Christ' (Χριστός), were contracted by retaining only the first and last letters and overstroked with a supralinear line. For example, 'Ιησοῦς in its various case endings was usually contracted as ͞ι͞ς, ͞ι͞ν, ͞ι͞υ, and ͞ι͞υ (dative), but there are also instances in which the first, second and last

letters are overstroked (long contraction), as well as some cases of the suspension ͞ι͞η. Words like 'spirit', 'cross', 'father', 'man', 'son', and a number of others, also had short or long contracted forms. Overstroked *nomina sacra* can be clearly seen in Figures 1, 2 and 5. See L.W. Hurtado, *The Earliest Christian Artifacts: Manuscripts and Christian Origins* (Grand Rapids: Eerdmans, 2006) 95-134, for an informative discussion of the *nomina sacra*.

35 See the recent statistical analysis of Hurtado, *Earliest Christian Artifacts*, 43-61 esp. 57-60. See also C.H. Roberts and T.C. Skeat, *The Birth of the Codex* (London: Oxford University Press for the British Academy, 1985) and Gamble, *Books and Readers*.

36 Roberts, *Manuscript*, 41.

37 E.G. Turner's rule of thumb that 2:3 is generally the proportion of upper to lower margins is followed here (*The Typology of the Early Codex* [Philadelphia: University of Pennsylvania, 1977] 25). Thus, a 1 cm upper margin should have a 1.5 cm lower margin (total 2.5 cm), and a 1.6 cm upper margin should have a 2.4 cm lower margin (total 4 cm). So in the absence of physical evidence, 2.5 cm (the hypothetical lower limit) and 4 cm (the hypothetical upper limit) are added to estimates of column height, while side margins are assumed to be 1.5 cm wide (total 3 cm).

38 In the majority of cases, codex size and line count figures are based on my own calculations (working from scaled images). Generally, my figures approximate those found in: K. Aland, *Repertorium der griechischen christlichen Papyri*, vol. 1: *Biblische Papyri: Altes Testament, Neues Testament, Varia, Apokryphen* (*PTS* 18; Berlin and New York: de Gruyter, 1976); J. van Haelst, *Catalogue des papyrus littéraires juifs et chrétiens* (Série 'Papyrologie' 1; Paris: Université de Paris IV Paris-Sorbonne, 1976); Turner, *Typology*; and the various *P. Oxy.* editions.

39 For details see Turner, *Typology*, 13-34.

40 There are a number of problems with the effort of T.C. Skeat, 'The oldest manuscript of the four Gospels?' *NTS* 43 (1997) 1-34 (repr. in J.K. Elliott [ed.], *The Collected Biblical Writings of T.C. Skeat* [*NT.S* 113; Leiden: Brill, 2004] 158-92,) to show that 𝔓64+67 and 𝔓4 come from the same four-gospel, single-quire codex. See my article 'T. C. Skeat, 𝔓64+67 and 𝔓4, and the problem of fibre orientation in codicological reconstruction', forthcoming in *NTS*.

41 0171 is a parchment codex designated NT Parch. 51 by Turner. Many of the examples in this category are early (*Typology*, 28-9). Parchment codices generally favour 6:7 or 7:8 (W:H) formats and for that reason there is little correspondence with papyrus formats (31-2).

42 Petrov 553, Kiev, Ukrainian National Library, F. 301 (KDA), preserving Lk. 4:1-2: see K. Aland *et al.* (eds.), *Kurzgefasste Liste der griechischen Handschriften des Neuen Testaments* (2nd ed.; Berlin: de Gruyter, 1994) 3, who dates the MS III/IV(?). For an edition based on that of C.R. Gregory (*ed. pr.*) see id., 'Neue neutestamentliche Papyri', *New Testament Studies* 3 (1957) 261-5. Gregory dated the manuscript IV-VI, but it was never photographed and has been lost, so the dating cannot be checked or the original format (roll or codex) determined. Cf. Aland, *Repertorium*, 225; van Haelst, *Catalogue*, nos. 1224, 1225.

43 'Group 10 is only a special case in a slightly smaller format of Group 9' (Turner, *Typology*, 25).

44 Turner (*Greek Manuscripts*, 25) gives biblical majuscule (which had developed by the fourth century) as one example of three types of formal, round, bilinear (written between two notional lines) hands: 'each letter (ι only excepted) occupies the space of a square (ε θ ο ϲ being broad circles) and only φ and ψ reach above and below the two lines' while 'υ regularly and ρ often reach below the line'. For a succinct but more detailed description see G. Cavallo and H. Maehler, *Greek Bookhands of the Early Byzantine Period A.D. 300-800* (*University of London Institute of Classical Studies Bulletin Supplement* 47; London, Institute of Classical Studies, 1987) v.

45 Gamble, *Books and Readers*, 120-1. It is reasonable to assume that early scriptoria could not be compared with the number of assistants used by Origen early in the third century (see Eusebius, *H.E.* 6.23.2).

46 See G. Zuntz, 'Réflexions sur l'histoire du texte paulinien', *Revue Biblique* 59 (1952) 5-22, repr. as 'The Text of the Epistles', in his *Opuscula Selecta: Classica, Hellenistica, Christiana* (Manchester: Manchester University Press, 1972) 252-68, esp. 266-8; id., *The Text of the Epistles: A Disquisition upon the* Corpus Paulinum (Schweich Lectures, 1946; New York: Oxford University Press for the British Academy, 1953) 271-5; Roberts, *Manuscript*, 24; Gamble, *Books and Readers*, 121. 'There is, however, no direct evidence for a library in Alexandria, and its existence in the second and third centuries can only be inferred' (Gamble, *Books and Readers*, 161).

47 See E.J. Epp, 'The Significance of the Papyri for Determining the Nature of the New Testament Text in the Second Century: A Dynamic View of Textual Transmission', in W.L. Petersen (ed.), *Gospel Traditions in the Second Century: Origins, Recensions, Text,*

48   Turner, *Typology*, 85-6.

49   Turner, *Greek Manuscripts*, 108, no. 63. The scribe would not have been worried about running out of space in a codex made up of multiple quires to which another quire could easily be attached (Turner, *Typology*, 73).

50   Turner (*Typology*, 49-50) is making the point that when the sheets used to make 𝔓⁶⁶ and 𝔓⁷⁵ were cut from rolls, the makers tried to keep the sheets join-free. On methods of cutting sheets from a roll minus the joins see *Typology*, 52. Although he had not personally inspected this manuscript, from the photographs Turner's conclusions appear sound. However, it can be 'particularly difficult' to detect joins in photographs because the photographer is focussed on producing 'maximum contrast between the writing and its background': E.G. Turner, *The Terms Recto and Verso: The Anatomy of the Papyrus Roll* (*Papyrologica Bruxellensia* 16; Actes de XVᵉ Congrès International de Papyrologie, Première Partie; Bruxelles: Fondation Égyptologique Reine Élisabeth, 1978) 15.

51   See V. Martin and R. Kasser, *Papyrus Bodmer XIV: Evangile de Luc chap. 3-24* (Cologny-Genève: Bibliotheca Bodmeriana, 1961); V. Martin and R. Kasser, *Papyrus Bodmer XV: Evangile de Jean chap. 1-15* (Cologny-Genève: Bibliotheca Bodmeriana, 1961).

52   Turner, *Typology*, 23.

53   Cf. Aland, *Repertorium*, 309-11; Martin and Kasser, *Papyrus Bodmer XIV*, 13.

54   Martin and Kasser, *Papyrus Bodmer XIV*, 10.

55   Van Haelst, *Catalogue*, no. 406.

56   Comparison is made with the 1961 edition of Nestle-Aland, *Novum Testamentum Graece*. In the beginning of the codex one page corresponds to about 30 lines of Nestle, while the second half goes up to 41 lines of Nestle. See the figures of Martin and Kasser, *Papyrus Bodmer XIV*, 10.

57   'Page 3 (modern pagination) contains 39 lines to a page, averaging 24/25 letters to the line; p. 26 has 44 lines, but still averaging 24/25 letters; p. 98 has 43 lines, with an average of well over 30 letters to the line': Turner, *Typology*, 74; cf. 86.

58   Cf. Martin and Kasser, *Papyrus Bodmer XIV*, 16, who think that high and low points correspond to non-final (our commas and colons) and final stops respectively.

59   On the 'organic' (to indicate the separate phonetic quality of a vowel in a cluster) and 'inorganic' (to mark an initial or emphasize a final vowel) uses of the trema see Turner, *Greek Manuscripts*, 12.

60   Martin and Kasser, *Papyrus Bodmer XIV*, 17.

61   Martin and Kasser, *Papyrus Bodmer XIV*, 17.

62   Metzger, *Greek Manuscripts*, 68.

63   B.M. Metzger, 'The Bodmer Papyrus of Luke and John', *Expository Times* 73 (1962) 201 (201-3).

64   See the plates in Martin and Kasser, *Papyrus Bodmer XIV* and *Papyrus Bodmer XV*.

65   The actual figures in the extant text are: (Lk. 10) 28, 6; (11) 50, 4; (12) 58, 1; (13) 33, 2; (14) 33, 2; (15) 23, 9; (16) 22, 9; (22) 23, 9; (23) 45, 10; (Jn. 1) 35, 15; (2) 18, 7; (3) 27, 9; (4) 43, 10; (5) 14, 8; (8) 32, 5; (9) 31, 9; (10) 12, 2.

66   The averaged agreement in Luke and John is 84.2 and 76.4 percent respectively.

67   According to the editors of NA²⁶, its text divisions correspond to the divisions found in ancient manuscripts, and with rare exceptions NA²⁷ reproduces the system of punctuation and paragraphing used in its predecessor: K. Aland *et al.* (eds.), *Novum Testamentum Graece* (Stuttgart: Deutsche Bibelgesellschaft, ²⁶1979) 44*; B. and K. Aland *et al.* (eds.), *Novum Testamentum Graece* (Stuttgart: Deutsche Bibelgesellschaft, ²⁷2001) 46*.

68   Cf. Turner, *Greek Papyri*, 88-96.

69   H.A. Sanders, 'An Early Papyrus Fragment of the Gospel of Matthew in the Michigan Collection', *Harvard Theological Review* 19 (1926) 215-26; id., in J.G. Winter (ed.), *Papyri in the University of Michigan Collection*, vol. 3: *Miscellaneous Papyri* (Ann Arbor: University of Michigan Press, 1936) 9-14, no. 137. The arrows indicate the direction of the fibres on each side of the papyrus leaf.

70   Cf. Sanders ('Early Papyrus Fragment', 215); van Haelst, *Catalogue*, no. 378; Aland, *Repertorium*, 259; and Turner, *Typology*, 147.

71   Sanders, 'Early Papyrus Fragment', 216-7.

72   Sanders, *Papyri in the University of Michigan Collection*, 3.12 n. 26.

73   Sanders, *Papyri in the University of Michigan Collection*, 3.10.

74   Sanders, 'Early Papyrus Fragment', 217.

75   The second hand has also made corrections above the line in three places.

76   F.G. Kenyon, *The Chester Beatty Biblical Papyri: Descriptions and Texts of Twelve Manuscripts on Papyrus in the Greek Bible*, Fasc. 2: *The Gospels and Acts, Text* (London: Emery Walker, 1933), *The Gospels and Acts, Plates* (London: Emery Walker, 1934). For recent editions of fragments see T.C. Skeat and B.C. McGing, 'Notes on the Chester Beatty Biblical Papyrus I (Gospels and Acts)', *Hermathena* 150 (1991) 21-5 and pll.; and W.J. Elliott and D.C. Parker (eds.), *The New Testament in Greek*, vol. 4.1: *The Gospel According to St. John: The Papyri* (International Greek New Testament Project; NTTS 20; Leiden: Brill, 1995) 52-67.

77   H. Gerstinger, 'Ein Fragment des Chester-Beatty Evangelienkodex in der Papyrussammlung der Nationalbibliothek in Wien', *Aegyptus* 13 (1933) 67-73; G. Zuntz, 'Reconstruction of the Leaf of the Chester Beatty Papyrus of the Gospels and Acts (Mt. XXV, 41-XXVI, 39)', *Chronique d'Égypte* 52 (1951) 191-211 and pll.

78   Kenyon, *The Chester Beatty Biblical Papyri*, Fasc. 2, *Text*, v-vi.

79   Van Haelst, *Catalogue*, no. 371.

80   Kenyon, *The Chester Beatty Biblical Papyri*, Fasc. 2, *Text*, vi.

81   Aland, *Repertorium*, 269-72; van Haelst, *Catalogue*, no. 371.

82   T.C. Skeat, 'A Codicological Analysis of the Chester Beatty Papyrus Codex of Gospels and Acts (P45)', *Hermathena* 155 (1993) 27-43, repr. in Elliott, *The Collected Biblical Writings of T.C. Skeat*, 141-57.

83   Roberts and Skeat, *Birth of the Codex*, 66.

84   *The Chester Beatty Biblical Papyri*, Fasc. 2, *Text*, viii-ix. Kenyon provides descriptions of all of the letters, while Zuntz notes the letters generally fill an 'identical space each, with the slight variations tending to cancel out each other throughout the long lines' ('Reconstruction', 193).

85   Zuntz, 'Reconstruction', 192.

86   E.C. Colwell, 'Scribal Habits in Early Papyri: A Study in the Corruption of the Text', in J.P. Hyatt (ed.), *The Bible in Modern Scholarship: Papers Read at the 100th Meeting of the Society of Biblical Literature, December 28-30, 1964* (Nashville: Abingdon, 1965) 370-89; repr. as 'Method in Evaluating Scribal Habits: A Study of P⁴⁵, P⁶⁶, P⁷⁵', in *Studies in Methodology in Textual Criticism of the New Testament* (NTTS 9; Leiden: Brill, 1969) 106-24.

87   'In P⁷⁵ the text that is produced can be explained in all its variants as the result of a single force, namely the disciplined scribe who writes with the intention of being careful and accurate' (Colwell, 'Scribal Habits in Early Papyri', 381). J.R. Royse ('Scribal Habits in Early Greek New Testament Papyri', Th.D. dissertation, Graduate Theological Union, 1981, 538-9; cf. 684-93) identifies 116 corrections (with only 5 by other hands), the vast majority of which correct 'scribal blunders' to the reading in B, which suggests that no second exemplar was involved.

88   G.D. Fee, 'The Corrections of Papyrus Bodmer II and Early Textual Transmission', *Novum Testamentum* 7 (1964/65) 247-57.

89   See Royse, *Scribal Habits*, 133-5.

90   Kenyon (*The Chester Beatty Biblical Papyri*, Fasc. 2, *Text*, ix) notes that when 'two letters occur together, as in υιοϲ, three dots are placed above them'. See the comments of Zuntz ('Reconstruction', 192 n. 5) on the scribe's use of *iota* adscript which consistently appears after η and ω (but not α).

91   Kenyon, *The Chester Beatty Biblical Papyri*, Fasc. 2, *Text*, ix.

92   Cf. Kenyon was of the opinion that a later hand had added more punctuation 'in heavy dots of strokes above the line at the end of a clause' (*The Chester Beatty Biblical Papyri*, Fasc. 2, ix).

93   Although several verse breaks are not marked in fol. 2ᵛ of the P.Beatty fragments and on the → of P.Vindob. G. 31974, there is consistency elsewhere. But it should be noted that many verse breaks in Matthew coincide with lacunae in the papyrus.

94   Because Mark and Acts were next to each other in the lump of papyrus that arrived in England, Kenyon thought that the gospels may have been in the so-called Western order (*The Chester Beatty Biblical Papyri*, Fasc. 2, viii). However, I proceed here in the order of the gospels in Kenyon's edition.

95   If the gospels were in the Western order (Matthew, John, Luke, Mark), the use of medial points must have been quite inconsistent in John and Luke before grinding to a halt early in Mark.

96   See fol. 19ᵛ (Acts 6:7-7:2). Note also that throughout the transcription Kenyon records medial points as high points.

97   This was anticipated at the ends of Mk. 9:26 and 12:27 where a blob of ink was written instead of a stroke. Short raised strokes are missing in fol. 23ᵛ, but they resume in the next folio (24ᵛ) where a thinner pen begins to be used.

98   Again blobs are inaccurately marked as high points in Kenyon's edition.

99   See G.N. Stanton, *Jesus and Gospel* (Cambridge: Cambridge University Press, 2004) 198, 73 n. 38, citing T.C. Skeat; and Hurtado,

Earliest Christian Artifacts, 174-7, who favours public use.

100 L.W. Hurtado, 'P[45] and the Textual History of the Gospel of Mark', in C. Horton (ed.), *The Earliest Gospels: The Origins and Transmission of the Earliest Christian Gospels: The Contribution of the Chester Beatty Gospel Codex P[45]* (*Journal for the Study of the New Testament Supplements* 30; London: T. & T. Clark International, 2004) 146-7 (132-48).

101 As seen above, other third-century gospel MSS designated private nevertheless conform to third-century fashion or expectations concerning the size of gospel codices.

102 R.L. Starr, 'The Circulation of Literary Texts in the Roman world', *Classical Quarterly* 37 (1987) 213 (213-23), envisions texts circulating 'in a series of widening concentric circles determined primarily by friendship'. Cf. the discussions of Gamble, *Books and Readers*, 83-93, esp. 88; and Johnson, *Bookrolls*, 158-9.

103 Gamble, *Books and Readers*, 90-1.

104 Johnson, *Bookrolls*, 159-60.

105 Cf. G.H.R. Horsley, 'Classical Manuscripts in Australia and New Zealand, and the Early History of the Codex', *Antichthon* 27 (1993) 60-85, who argues that initially Christian groups commissioned copies of their texts 'from established scriptoria', and that it was only as demand increased that they set up their own 'scriptoria which produced serviceable, "in-house" copies with growing proficiency'. By the fourth century these had become 'highly professional scriptoria which set great store not only by accuracy but also by aesthetic appeal' (74-5). If this schema is generally allowed, there are grounds for placing the 'growing proficiency' of the second phase (well advanced by *c.* 175 as this study has demonstrated) at an earlier time than Horsley seems to have envisaged. However, Christian private copying was probably a factor from the very beginning. The very early and almost universal practice of contracting *nomina sacra* is a strong argument in favour of Christian scribes and copyists (Gamble, *Books and Readers*, 78).

106 By the end of the first century, the book trade 'had secured a role in the circulation of literature' (Gamble, *Books and Readers*, 91).

107 So Gamble, *Books and Readers*, 78.

108 For a discussion of writing tools see Turner, *Greek Manuscripts*, 8.

109 Cf. Cribiore, *Writing*, 3-11.

110 Cribiore, *Writing*, 69-72; Turner, *Greek Papyri*, 89 and n. 44.

111 T.C. Skeat, 'Was Papyrus Regarded as "Cheap" or "Expensive" in the Ancient World?' *Aegyptus* 75 (1995) 75-93, concludes that a roll of *c.* 11 m would cost about 2 dr, so a single sheet suitable for writing a letter 'would cost one-fifth of an obol – surely not an excessive expense' (90).

112 T. Morgan, *Literate Education in the Hellenistic and Roman Worlds* (Cambridge: Cambridge University Press, 1998) 46. In Graeco-Roman Egypt 'the elite were concentrated in the cities': P. van Minnen, 'Boorish or Bookish? Literature in Egyptian Villages in the Fayum in the Graeco-Roman Period', *Journal of Juristic Papyrology* 28 (1998) 100 (99-184).

113 H.C. Youtie, *Scriptiunculae* (Amsterdam: Hakkert, 1973) 1.642, quoted by Cribiore, *Writing*, 19 n. 48.

114 H.C. Youtie, 'βραδέως γράφων: Between Literacy and Illiteracy', *Greek Roman and Byzantine Studies* 12 (1971) 239-61; repr. with addenda in id., *Scriptiunculae* [Amsterdam: Hakkert, 1973] 2.629-51; cf. Cribiore, *Writing*, 104, 151-2. Slow writers ranged from the illiterate feigning ability to write to those who could write with difficulty in poor hands a short subscription under a text written on their behalf. On possible alternatives routes to literacy other than schooling see N. Horsfall, 'Statistics or States of Mind', in M. Beard *et al.*, *Literacy in the Roman World* (*Journal of Roman Archaeology Supplementary Series* 3; Ann Arbor: University of Michigan, 1991) 59-76.

115 Cribiore, *Writing*, 20; cf. 132-5. At a slight remove from the slow writer were those who could write 'an epistle in quivering but somewhat empowering characters' (id., *Gymnastics*, 159), and then those who could more easily write at length, and so on.

116 See E.A. Judge and S.R. Pickering, 'Papyrus Documentation of Church and Community in Egypt to the Mid-Fourth Century', *Jahrbuch für Antike und Christentum* 20 (1977) 69-70 (47-71). Cf. Turner, *Greek Papyri*, 82-8; and W. Clarysse, 'Literary Papyri in Documentary "Archives"', in E. Van 't Dack *et al.* (eds.), *Egypt and the Hellenistic World, Proceedings of the International Colloquium, Leuven, 24-26 May 1982* (*Studia Hellenistica* 27; Leuven: Peeters, 1983) 43-61 (I am grateful to W. Clarysse for this reference and the following).

117 See D.J. Thompson, 'Ptolemaios and the "Lighthouse": Greek Culture in the Memphite Serapeum', *Proceedings of the Cambridge Philological Society* n.s. 33 (1987) 105-21. Apollonios left the village of Psichis in the Herakleapolite nome to join his brother Ptolemaios (a detainee in the Serapeum at Memphis) after the death of their father Glaukias in 164 BC (106).

118 Cribiore, *Gymnastics*, 188-9. On writing of letters see 215-19.

119 Cribiore, *Gymnastics*, 245-6 (BGU 2.423).

120 See the Conspectus of Texts concerning the rise of Christianity in Egypt at http://www.anchist.mq.edu.au/doccentre/PCE homepage.htm (accessed 30 March 2007). Papyri from the Rise of Christianity in Egypt is a project of the Ancient History Documentary Research Centre, Macquarie University.

121 P. van Minnen, 'The Roots of Egyptian Christianity', *Archiv für Papyrusforschung* 40 (1994) 71-85, esp. 75-7.

122 See P.Col. 8.230 (early third century? Karanis), the deacons Anchophis and Sansneus are nominated as *sitologoi*; P.Oxy. 10.1254 (260, Oxyryhchus), Petrus is appointed to an expensive public office; and P.Cair.Isid. 114 (304, Karanis), Johannes, a former gymnasiarch. For other papyri containing Christian names (some involving activities requiring literacy) and letters see M. Naldini, *Il Cristianesimo in Egitto: lettere private nei papiri dei secoli II-IV* (*Studi e testi di Papyrologia* 3, Firenze: Le Monnier, 1968), Judge and Pickering, and the Conspectus of Texts at the Papyri from the Rise of Christianity in Egypt website (see n. 119).

123 See Eusebius, *H.E.* 7.24.

124 Van Minnen, 'Boorish or Bookish?' 184. He argues that Christians must have comprised at least 25% of the population of Egypt in the early fourth century ('The Roots of Egyptian Christianity' 73).

125 Morgan notes that the 'atypicality of Egypt' has been challenged by a number of comparative studies and concludes that the socio-cultural implications of this would vary from place to place and between social groups (*Literate Education*, 45).

126 W.V. Harris, 'Literacy and Epigraphy, I', *Zeitschrift für Papyrologie und Epigraphik* 52 (1983) 97 (87-111), contrasts such areas with 'thoroughly hellenised areas' like mainland Greece, Macedon, the Aegean, coastal areas of varying depth and character in Asia Minor'.

127 This was more likely to occur in controlled settings. Tov's observations probably hold good here: 'Since we do not believe that scribes were so actively involved in content analysis, it appears that scribal decisions on the type of relation between section units should often, but definitely not always, be considered *ad hoc*, made upon the completion of one unit and before embarking on the next' (*Scribal Practices*, 144; cf. 150).

128 Johnson, *Bookrolls*, 159-60.

129 Johnson, *Bookrolls*, 17.

130 Cf. the brief discussion of P[66] in comparison with P[75] above.

131 Documentary work could also involve the use of shorthand.

132 Gamble, *Books and Readers*, 109.

133 Gamble, *Books and Readers*, 109-12. Cf. the discussion on Hippolytus and Cyprian (127-30).

134 Gamble, *Books and Readers*, 121-2.

135 Gamble, *Books and Readers*, 122.

136 On the movement of written communications and manuscripts between early Christian groups see also M.B. Thompson, 'The Holy Internet: Communication between Churches in the First Christian Generation' (49-70), and L. Alexander, 'Ancient Book Production and Circulation of the Gospels' (71-105), in R.J. Bauckham (ed.), *The Gospels for all Christians: Rethinking the Gospel Audiences* (Grand Rapids: Eerdmans, 1998).

137 Gamble, *Books and Readers*, 104-7.

138 In comparing text division in P[66] and P[75] Martin and Kasser (*Papyrus Bodmer XIV-XV*, 1.15) noted agreement and disagreement and concluded that the practice was still in its developmental phase. By the time of the great fourth- and fifth-century codices, the primary markers of text division (*ekthesis* and vacant line ends) are virtually settled, but there are still individual differences. My own examination of quality facsimiles found that Codex Sinaiticus has *ekthesis*, vacant line ends, the occasional medial point or dicolon, but not the *paragraphos*. Likewise, Codex Vaticanus contains *ekthesis*, vacant line ends, and very occasionally a high point, but also vacant spaces in the text, the *paragraphos*, and dicola at the end of Matthew, Mark and John, but not Luke. While Codex Alexandrinus has *ekthesis*, vacant line ends, vacant spaces in the text and medial points, but not the *paragraphos*.

139 The second-century evidence itself vitiates any perceived circularity in the argument.

A Preliminary Analysis of the Cartonnage on the Child Mummy in the collection of the Australian Institute of Archaeology

Rupert-Angus Mann

Abstract: This is a preliminary analysis of the style and iconography of three cartonnage fragments found on the front of a Graeco-Roman Period child mummy in the collection of the Australian Institute of Archaeology. The iconography is closely associated with Osiris and is consistent with much Egyptian funerary art. Limited comparative analysis suggests that the mask belongs to a group of mummies from Akhmim, near Abydos and dates from the mid-first century BC to the mid-first century AD while the lower fragment belongs to a group from the Kharga Oasis and dates from around the birth of Christ to the mid-first century AD. Stylistic analysis of the upper fragment was limited by its poor state of repair and recent touching up.

Introduction

The child's mummy forming the basis of this study is said to date from the Graeco-Roman Period, is of unknown provenance and was purchased by the Australian Institute of Archaeology in London in 1965 (Sotheby & Co 1965: 26). It measures about 80cm in length and is 24cm wide from shoulder to shoulder (Figure 2).

The mummy is decorated with three separate fragments of painted cartonnage. The first is the mask, parts of which have been cut away in fitting it to this small mummy. Some time after 1965 the nose was added, areas of the gilding reapplied and a line painted down the cheeks and under the mouth.

The large piece of cartonnage over the chest and stomach area forms the upper fragment which has been separated into five registers I, II, III, IV and V, for the purposes of this study (Figure 1). Register III and the upper section of register II has been repainted some time after 1965.

The lower fragment covers the hips and legs and is arranged in three areas. The central area consists of registers X, XI and XII. Registers VI, VII, VIII and IX constitute the left area. While the right area contains registers XIII, XIV, XV and XVI.

The field of Graeco-Roman funerary archaeology has only recently been studied with serious academic vigour. As Riggs (2005: 36) points out, before the 1960s, Graeco-Roman Period funerary art, other than the famous Fayum portraits, received little attention. Many early scholars regarded Graeco-Roman period art as being somewhere between the Greek and the Egyptian spheres, without legitimacy and even "degenerate" (Needler cited in Riggs 2005: 5). However with scholars such as Smith (1997), Riggs (2005), Walker (2000), Corbelli (2006) and Parlasca (Parlasca

and Seeman 1999; Parlasca and Frenz 2003) contributing important recent studies in the field, Graeco-Roman funerary art is finally taking its rightful place, as a challenging and legitimate assemblage.
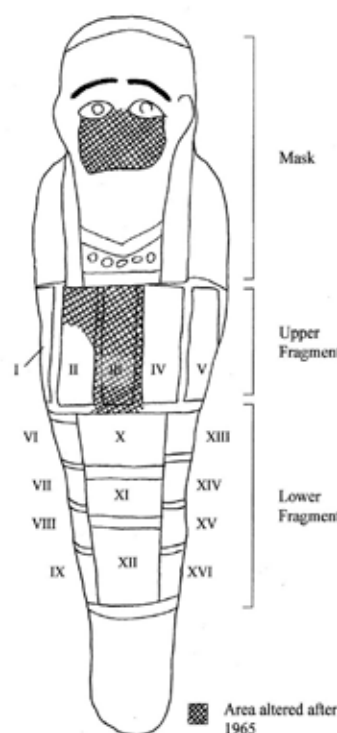

Figure 1: *The register nomenclature adopted for the cartonnage.*

Figure 2: *A recent photograph of the mummy. (Photo: R.Frank)*

Figure 3: Two photographs of the Mummy from soon after it was acquired. It had no nose at that time.

Iconography

Mask

The "broad fillet or headband" decorated with "brown stripes on a white background" over the brow of the mask identified by Davey et al (2003: 31) is a row of nine rearing cobras (Figure 4). The brown areas are what remain of the background behind what was a row of protruding stucco cobras. British Museum mummies BM 29584, BM 29590, BM 29588 (cited in Walker 2000: 31-35) and an example in the Allard Pierson Museum in Amsterdam (cited in Riggs 2005: 86) have very similar arrangements on their fore-heads. These four examples date from the first to second century AD and come from Akhmim in Upper Egypt. The outline of the cobra's bodies and the sun discs they wear on their heads can be seen in the brown paint.

The rearing cobra was identified with the Lower Egyptian sanctuary of Buto and when shown with the vulture (Upper Egyptian god of Nekhen) represented, in pharaonic times, the unification of Egypt (Johnson 1990: 5). As a symbol of unification the uraeus became a powerful pharaonic insignium and was often depicted on the forehead of roy-alty (Johnson 1990: 5). However, by the Late Period the uraeus was no longer associated with royalty when placed on the forehead (Goff 1979: 108) and by Graeco-Roman times the symbol had become a common piece of funerary iconography (Corbelli 2006: 56).

Upper Fragment

Because the face of Qebesenuef in register II and the whole of register III have been re-painted in recent times, these

areas, as they now stand, cannot be considered in parts of this study (Figures 1 & 5). Therefore images of this section taken some time around 1965, before the section was tampered with, have been used (Figure 3).

Register III depicts a slender *Djed* pillar. The four sons of Horus who, as mummies, stand facing the central register III, occupy the four remaining registers. The sons can be identified by their mummiform dress with the customary cross over their sides and horizontal stripes over their shoulders. Each figure holds two unidentified objects, possibly ankh symbols or sceptres. Register IV contains Imsety, the human son of Horus who was the guardian of the liver of the dead person (Shorter 1985:135). Register V contains the Jackal headed Duamutef who guarded the Stomach (Wilkinson 2003: 88). Register II contains the hawk headed Qebesenuef (Wilkinson 2003: 88), who guarded the intestines while the final register contains an image of the baboon headed Hapy (Hart 1986: 204), who was responsible for the lungs of the deceased. A very similar example to the AIA mummy is found in the British museum, BM 6694, where a panel of similar size displays an identical scene except that the figures are in a different order. Here it is clear that they hold ankhs (Dawson and Gray 1968: 23, plate a. 43).

Figure 4: The mask of the mummy. (Photo: R Frank)

Figure 5: The Upper Fragment. Comparison with Figure 3 reveals the alterations made to the central register. (Photo: R. Frank)

Not only were these four figures associated with the internal organs of the dead but they also signified the cardinal points of the compass (Morenz 1973: 263) and in this way came to represent all the regions of Egypt (Wilkinson 2003: 88). Imsety was associated with the south, Duamutef with the east, Hapy with the north and Qebesenuef represented the west (Wilkinson 2003: 88).

Register III depicted a tall slender *Djed* pillar wearing an *Atef* crown consisting of two feathers, a solar disc and the horns of a cow (Figure 5). Several other examples exist showing a *Djed* pillar depicted as a person wearing crowns or holding regalia. These include the wall of chamber 4 in the Theban tomb of Wendjebauendjed where a *Djed* pillar wearing an *Atef* crown is seen between two goddesses (Goff 1979: 129) and the mid-late first century mask of a female from Meir which depicts a winged *Djed* pillar wearing an *Atef* crown very similar to the AIA example.

The origins of the *Djed* pillar are poorly understood and what it depicts exactly is unknown (Lurker 1980: 46). At the beginning of the New Kingdom the pillar became closely associated with Osiris (Lurker 1980: 47) and grew to be one of the most sacred symbols in ancient Egypt (Ermann 1977: 16). The pillar symbolises not only Osiris himself but also stability and strength (Clark 1959: 235).

Furthermore, the *Atef* crown was closely associated with Osiris. The Osiris myth is concerned with resurrection and revival (Clark 1959: 256) and it appears that the artist wished to convey these elements in depicting the *Djed* here. The invocation of Osiris on a mummy through the powerful symbolism of the *Djed* must have been potent imagery.

Lower Fragment

The lower fragment is the most iconographically rich of the three. It contains eleven individual registers arranged into a central area and two side areas. The central area has three registers depicting various funerary elements closely associated with Osiris (Figure 6). The two side areas, each containing four registers, display various gods who are almost all associated with the Osiris myth (Figures 7 & 8.).

Register X shows a mummy lying on a lion-headed funerary bier with four Canopic jars lined up beneath (Figure 6). The mummy lying on the bier not only represents the deceased but is also symbolic of Osiris who was embalmed on a similar table (Goff 1979: 139). In this way the dead person was associated with Osiris.

The bier scene is one of the most common elements of Graeco-Roman funerary iconography (Corbelli 2006: 51) and is found in many forms. For instance, a Roman Period shroud from Akhmim (see D'Auria et al 1988: 203) shows the deceased lying alone on the bier while on the mummy of Artemidorus the deceased is in the presence of a priest dressed as Anubis (see Vassilika 1997: 489).

The only accompanying images in the AIA bier scene are the four Canopic jars sitting beneath the table. These jars were intended to contain the internal organs of the deceased and after the eighteenth dynasty were made with the heads of the four sons of Horus as stoppers (Hart 1986: 204). In this way the protective power of these deities could be invoked over each of the organs stored in the jars.

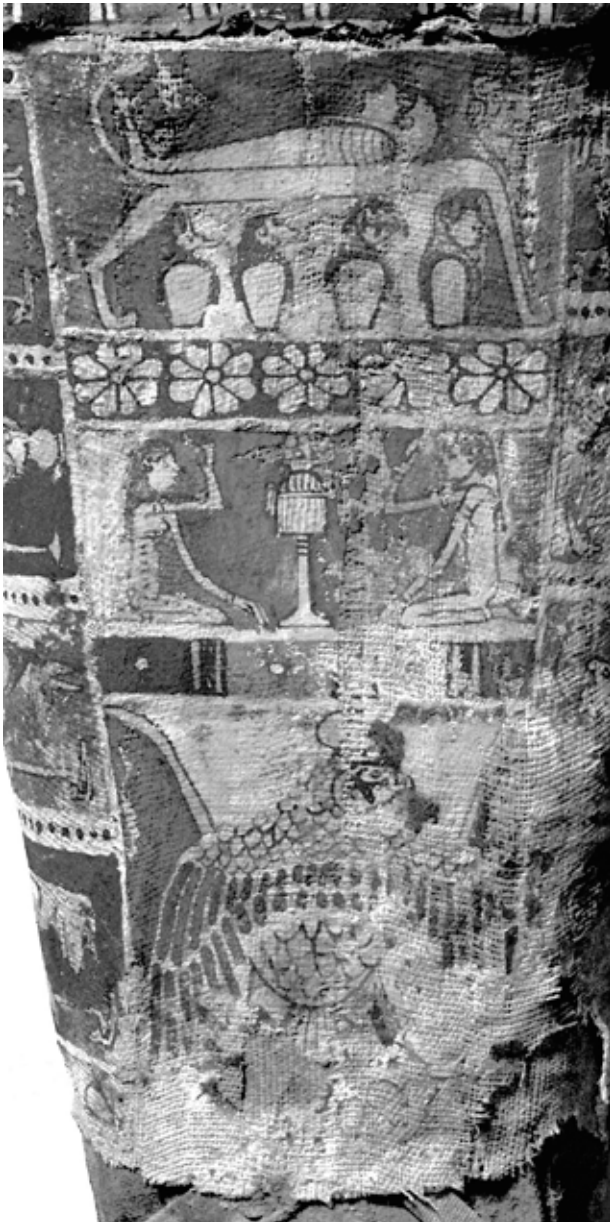By the Third Intermediate Period mummification practices

Figure 6: The Lower Fragment central registers. (Photo: R. Frank)

sisters of Osiris (Isis is also his wife) and, as part of the Osirian legend, they mourned him before searching for his dismembered body and restoring him to life,

> *Ah Sister!*
> *This is our brother,*
> *Come, let us lift up his head,*
> *Come, let us rejoin his bones,*
> *Come, let us reassemble his limbs,*
> *Come, let us put an end to all his woes.*

Spell 74 of the Coffin Texts (Clark 1959: 125)

The rectangular, canister-like object with a rounded top sitting between the two sisters is an obscure symbol known as the fetish of Abydos or the fetish of Osiris (Goff 1979: 100). Several Late Period examples exist where it is shown wearing two feathers and a uraeus (see for example Goff 1979: 53; and a Twenty-First Dynasty example on the papyrus of the lady Henuttawy in the British Museum, Hare 1999: 86). What the fetish actually represents is unclear. However, a convincing interpretation is that it is a reliquary containing the head of Osiris (Wilkinson 2003: 122; Riggs 2005: 49; Lurker 1980: 94).

The fetish is symbolic of Osiris (Clark 1959: 259; Lurker 1980: 94) and is often shown being worshipped or mourned by Isis and Nephthys. In the case of the AIA mummy, the fetish is further personified, like the *Djed* symbol in the upper fragment, through its adornment of the *Atef* crown. Goff (1979: 253) suggests that the fetish not only represents Osiris but is also identified with the deceased and expressed a desire for continued life after death. Thus the mourning figures of Isis and Nephthys are pouring out their sorrow not only for Osiris but also for the deceased.

Several examples of the fetish of Abydos similar to the AIA example are found in the Graeco-Roman Period. For instance, see an example in the British museum, BM 21810, which shows Thoth and Horus in the position of Isis and Nephthys with the fetish wearing an identical *Atef* crown (Zaloscer 1961: 17). Another very similar example is found on a mummy shroud in the Brussels Museum of Art History, probably from Thebes, E 7621, in which two mourning figures sit either side of the fetish (see Parlasca and Frenz 2003: 199).

Register XII depicts a large falcon with down-turned wings and wearing a solar disc. This figure could represent Horus, Sokar or even Osiris (Figure 6). Sokar and Horus are found in funerary art represented in this way and Osiris is praised as a divine falcon in some funerary texts. However it is likely, because of its adherence to the iconographic themes of the fragment, that the figure is Sokar rather than Horus. Horus' symbolism tends to be affiliated with kingship, political unity and divine justification of rulership rather than funerary iconography (Hart 1986: 89).

The underlying theme in the iconography of this fragment is based around Osiris and for this reason it seems that the falcon represents Sokar. Clark (1959: 179) suggests that Sokar in his falcon form is a symbol of the revival of Osiris

had changed and the organs were replaced into the body cavity (Wilkinson 2003: 88). By the Graeco-Roman Period the practice of including the jars in the funerary assemblage had died out completely (Ikram and Dodson 1998: 50). Yet they were still popular as symbols during the period and were often painted onto funerary shrouds or mummies (Corbelli 2006: 51).

Register XI depicts a mourning scene in which two women, representing Isis and Nephthys (Bleeker 1958: 10), sit either side of a fetish of Abydos which wears an *Atef* crown (Figure 6). It is clear that the figures are mourning the fetish because their arms are raised in the traditional gesture, a very similar example of which is found in the top panel of a Roman Period funerary shroud dating to the mid-second century (see Parlasca 1963: 265). These two gods are the

Figure 7: Lower Fragment, Registers VI-IX. The gods from left to right are Sobek, Nut, Duamutef and Hapy (Photo: R. Frank)

and therefore reinforces the symbolism introduced by the *Djed* pillar. As with many of the major ancient Egyptian gods, Sokar and Osiris were closely identified with each other. An inscription found in the tomb of Wendjebauend-jed at Thebes refers to a god "Osiris-Sokaris". In the same tomb another inscription reads,

> *Homage to you, Osiris, Lord of Abydos, divine falcon, variegated of feathers*

(Goff 1979:224)

Clearly the god Sokar and his zoomorphic form, the falcon, were closely identified with Osiris.

In addition to this, Sokar was an extremely important funerary god whose cult centre was at Memphis (Hart 1986: 203; Wilkinson 2003: 210). It was here that Sokar's temple Ro-setau ("gate of corridors") was identified as the entrance to the underworld where the *henu* bark would descend with the dead into the afterlife (Wilkinson 2003: 209-210). A similar example to the Sokar figure found on the AIA mummy appears on a mummy mask from Meir in a private collection (see Parlasca and Seeman 1999: 312)

The two side areas of this fragment consist of four registers (VI, VII, VIII and IX are on the left side while XIII, XIV, XV and XVI are on the right) each containing the images of seated divinities facing towards the feet of the mummy in a very similar fashion to a mummy in the Heidelberg University Institute of Archaeology from the Kharga Oasis

(see Haslover 1998: 67). Registers VIII, IX, XV and XVI depict the four sons of Horus (Figures 7 & 8). Register XVI shows Qebehsenuef, XV shows Imsety, IX shows Hapy and the final register VIII shows Duamutef. It is clear that these four figures represent the sons of Horus because, consistent with other representations of the four sons, they do not wear crowns and they fit the morphological criteria for being the four sons.

On the right side, register XIII contains Nephthys and register XIV contains Thoth (Figure 8). The first figure is identified as Nephthys through her characteristic headdress, the hieroglyph for mansion topped by a bowl (Wilkinson 2003: 159). The presence of Nephthys on this fragment not only continues the Osirian theme in the work but also invokes her role as tutelary goddess to Hapy (Hart 1986: 204). Nephthys was a funerary goddess who was coupled with Seth, the evil slayer of Osiris, in order to balance the marriage of Osiris and Isis (Hart 1986: 136).

The figure of Thoth is identifiable through his characteristic ibis head (Wilkinson 2003: 215). Thoth is shown in this panel wearing a highly stylised and elaborate *Atef* crown which he wears in several other Graeco-Roman funerary examples (see for instance the mask of a woman from Meir dating to the first century AD in the Metropolitan Museum of Art, in Walker 2000: 131). Thoth was the god of writing and wisdom (Wilkinson 2003: 215). However, it is his role as the vizier of Osiris (Morenz 1973: 270) in the Osirian

Figure 8: Lower Fragment Registers from right to left XIII - XVI. The gods from right to left are Nephthys, Thoth, Imsety and Qebehsenuef. (Photo: R. Frank)

myth that makes him significant in funerary iconography, where he records Osiris' verdict in the judgement of the deceased's soul (Wilkinson 2003: 216).

On the left side, register VI shows Sobek wearing an *Atef* crown while register VII depicts Nut (Figure 7). Sobek is identifiable through his crocodilian form (Morenz 1973: 269). Although other gods also took this form, Sobek was popular in the Graeco-Roman Period, has a tentative link to Osiris and is often shown wearing the *Atef* crown. Sobek wears a similar *Atef* crown on the AIA mummy as he does in a Ptolemaic wall relief in the temple of Kom Ombo (see Lurker 1980: 117). It was during the Ptolemaic and Roman Periods that Sobek was particularly popular in the Fayum (Shorter 1985: 139). As well as his popularity during the Graeco-Roman Period, it is perhaps his tentative association with the Osirian cult (Wilkinson 2003: 219) that explains why he is included on the AIA mummy.

Register VII contains a seated female figure representing the goddess Nut. Although it is unclear from her physiology that she is female, the shape of her staff, unlike the *was* sceptres which are visible in the other figures' hands, is a papyrus reed sceptre indicating she is a goddess (Ermann 1977: 6; Wilkinson 2003: 148). An identical figure to this is found on the mummy of a child from the Kharga Oasis in the Heidelberg University Institute of Archaeology (see Haslover 1998: 67), except that this example wears a sun disc. The figure is identifiable as Nut through the small round pot that she wears upon her head (Mercatante 1995: 110; Lurker 1980: 90; Vassilika 1987: 94). Nut was an important funerary goddess who was thought to give birth to the sun every morning (Hollis 1987: 496) and in this sense was responsible for the resurrection of the deceased in the afterlife (Hollis 1987: 496; Wilkinson 2003: 161). Her funerary role also extended to providing nourishment for the dead in the afterlife and she would pour out water for the dead,

> *Hail Sycamore tree of the goddess Nut!*
> *Grant to me the air and the water which are in thee.*
> *I embrace thy throne…*
>
> Chapter LIX of the Book of The Dead (Budge 1967: 315)

It is in these roles of provider and of nourisher that Nut appears on the AIA mummy.

Style

Comparison of the Three Fragments

This section will compare the three fragments to each other in an attempt to determine how stylistically similar they are in five areas- facial features, composition, style of line used, the way clothing is represented and finally the style of decoration used.

Facial Features

The facial features of figures in the upper fragment are of a poorer standard than those in the lower fragment. For instance the face of Imsety in the upper fragment (Figure 5) has been executed in a style quite different from Imsety as depicted in register XV (Figure 8). Firstly the outline shape of the face of the upper fragment version is far more simplistic and impressionistic than that of the lower fragment Imsety which displays a greater concern with conveying the shape of the face. This can clearly be seen in the upper face where no attempt to differentiate the nose from the forehead or eyes is made in the upper Imsety, a single slope covers the area giving the face a barely human appearance. The nose of the lower Imsety has been distinguished from the brow of the face through changing the angle of the incline and a small impression indicates the location of the brow ridge above the eyes.

Facial features, such as the eyes, mouth and ears, are conveyed very differently in the upper and lower fragments. This is seen when comparing the facial features of the upper Duamutef to the lower version. The lower Duamutef in register VIII is illustrated with fine lines delineating the mouth neck and eyes (Figure 7). In contrast, the upper version in register V shows nothing more than an outline of the head (Figure 5). Similarly, the face of Imsety in the upper fragment is just a silhouette. The eyes and mouth have been omitted.

This lack of detail in the upper fragment is in stark contrast to the detail of the facial features seen in the lower fragment. See for instance the face of Qebesenuef in register XVI displaying detailed and quite delicate facial markings arranged around a large glaring eye (Figure 8). Similarly, the face of the lower fragment Imsety displays very fine attempts to illustrate the ears, nose and eye, lending the face a human touch lacking in the blank face of the upper Imsety in register IV (Figure 5).

Composition

The composition of the lower fragment is far more busy and compacted than that of the upper fragment, which contains larger, more widely spaced figures. The bier panel in the lower fragment register X is particularly busy (Figure 6). Here the four Canopic jars are tightly packed into the space beneath the funerary bier. All the other available space is occupied in some way either by iconographic elements or areas of bright colouring.

In contrast, the spaciously composed upper fragment is far less dense. The figures comfortably occupy their panels, which have generous areas of white behind each figure. Unlike the bier scene, the figures in the upper fragment occupy their space with an authoritative and ceremonial presence.

Line

The heavy uncompromising black lines used in areas of the upper fragment are not at all similar to the fine, nuanced lines used in the lower fragment. This is evident when comparing the thick uncontrolled lines illustrating the objects held by Duamutef in register V (Figure 5) to the delicate lines used to illustrate the details in the fetish of Abydos in the lower fragment, register XI (Figure 6). Here the very fine vertical lines in the body of the fetish convey a sense of softness, perhaps indicating that this is a drape while the more heavy lines in the domed part of the symbol are able to suggest a more solid texture. The delicate lines used in the lower fragment are in contrast to the heavy lines of the upper fragment.

Clothing

The mummy wrappings worn by the four sons in the upper fragment are depicted very differently from those sitting in the lower fragment. The figure of Imsety in the upper fragment register IV (Figure 5) has five horizontal lines across his shoulder with seven small dashes running perpendicular to the lowermost line just above a large cross that occupies the torso area of the figure. This way of representing the mummy wrappings is quite different from that used by the artist of the lower fragment who has painted very fine horizontal lines running from the shoulder right down to the chest and over the upper arms of the figures (Figure 7). Similarly the mummy lying on the funerary bier in the lower fragment lacks the small dashes running perpendicular to the shoulder lines and the large cross across the torso.

Decorative Elements

Flowers are used as a decorative element on both the mask and the lower fragment. The way that they are painted and their level of detail varies between the two fragments. The flowers appearing on the collar of the mask have been painted carelessly with little attention to detail or to uniformity (Figure 4). They are roughly round but the second from the right is almost rectangular. The petals have been painted using straight lines varying in length and thickness radiating from a roughly central dot not always in the middle of the flower. The number of petals found on these flowers varies between eight and five. Very little care has been taken in painting these flowers.

In contrast the flowers found on the front area of the lower fragment are painted carefully with a competent hand (Figure 6). They are uniformly round and of the same size. The petals are all of the same shape and size and the central dot in each is perfectly round and centrally placed. Each flower has eight petals and the radial spacing and placement of the petals is uniform. These flowers are highly uniform in all respects.

The block and line decoration seen on the lower edge of the upper fragment (Figure 5) is subtly different from the decorative band above the Sokar figure on the lower

fragment (Figure 6). For instance, the lines between the coloured block areas of this motif in the upper fragment consist of two thick white lines next to each other, separated by a single black line.

This motif in the lower fragment consists of coloured blocks with a small white dot in the centre, while the line element is made up of three lines, two parallel yellow coloured lines separated not by a thin line as in the upper section but by a thick black line.

It is clear that the mask, the upper fragment and the lower fragment have all been painted using different techniques, different representational modes and different levels of skill. Therefore, it would appear that the fragments were executed at different times, at different places or by different artists.

Comparison of the AIA Mummy to Other Mummies

Mummies stylistically similar to the AIA mummy were identified after a search which included the major Graeco-Roman mummy groups from the Fayum, Meir, Akhmim, Kharga Oasis, Deir el-Medina, Deir el-Bahri, Bahariya Oasis, Hawara, Tuna el-Gabel, Saqqara, Maghaba and Sheikh Abd el-Gurna.

Fayum and Hawara were subsequently excluded because the Hawara mummy group displays inlaid glass eyes and uses plaster rather than cartonnage. The Fayum was excluded because of the use of panel portraits.

The Theban groups, Deir el-Medina, Deir el-Bahri and Sheikh Abd el-Gurna as well as the Saqqara and Bahariya Oasis groups could all be discounted on style. The way they are painted and the way that facial features especially, are shown (see for instance the mask of Pebos from Deir el-Medina in the Luvre, Riggs 2005: 151) are very different from the way the AIA fragments are painted.

The Tuna el-Gabel and Meir groups have several similarities to the AIA mummy however they could also be excluded on grounds of form. They both displayed quite different shapes in the mask and also very different decorative elements from the AIA mummy.

The Maghaba group was found to be very similar to the lower fragment of the AIA mummy however it was discounted because the decorative elements used and the style of representation of the human form were both quite different.

The Mask

Analysis of the mask is limited by the fact that it is incomplete (Figure 4). What is visible today is likely to be a small part of a larger mask, the sides, top and bottom of which have been cut away to fit it to this small mummy. Most of the gilding of the mask and the line which separates the gilding from the dark area has been repainted since 1965. However, the features which can be identified indicate that

the mask is stylistically similar to those found on some of the Akhmim mummies from the mid first century BC or early first century AD.

The eyes of the AIA mummy mask are very similar to other Graeco-Roman mummies in that they are very large and the black dots representing the iris are not cut away by the upper or lower eyelid. Nor does the lower lid touch the bottom of the iris. The wide staring look this gives the AIA mummy is very similar to that found in the mask of a male from Meir dating to the mid-late first century AD in the Walters Art Museum, Baltimore (Riggs 2005: 114) and also to two mummies from Akhmim, which date from the mid first century BC to mid first century AD from the Myers Collection at Eton College and the British Museum (see Walker 2000: 33-34 plates 5 and 7).

The composition and way the face of the AIA mummy has been rendered is almost identical to that of a child mummy from Akhmim in the British Museum, EA 29590, which dates from the mid first century BC to the mid first century AD (see Walker 2000: 34 plate 7). The lips of this mummy have the same small puckered look and the eyes have an identical shape to the AIA mummy mask. Similarly, the eyebrows have been painted using the same thick black lines with a small gap between each other above the bridge of the nose. The British Museum child mummy also has a similar rounded chin and jaw line to the AIA mummy.

While mummies from other areas show similar stylistic features to the AIA mummy (see the mid first century Kharga Oasis group in the Cleveland Museum of Art, in Riggs 2005: 50 figure 13. Also see the Meir masks dating to the first century AD, in Walker 2000: 129-135), the Akhmim group is the only one I have seen which shows all the same features in the same mummy executed in painted line on cartonnage rather than inlayed glass on plaster.

The Akhmim child mummy mentioned above is the only example to my knowledge, which displays the same chequering on the lower side panels of the wig as is seen in the AIA example. Both the AIA and this British Museum examples display similar colouration and patterning while the position of the chequered panel is the same in both.

This child mummy is also the only other example I have found which displays the highly idiosyncratic method of painting flowers mentioned in the stylistic analysis above. This technique is also seen on British Museum mummy EA 29588 from Akhmim which dates from the mid first century BC to the mid first century AD (see Walker 2000: 35 plate 8).

Some of the Akhmim mummies display the same line of stucco uraei worn very low on the brow as the AIA mummy does. To my knowledge The Akhmim group constitutes the only comparable example of these uraei-laden headbands (see especially EA 29590, EA 29584 and EA 29588, in Walker 2000: 31-35 plates 2, 7 and 8).

The Upper Fragment

Comparison of this fragment to other groups has been avoided because much of it was repainted in recent times (Figure 5). The only surviving photograph of the mummy before it was repainted is in black and white and of poor quality (Figure 3).

However, the elongated *Djed* pillar is similar to that found on a mummy shroud from Saqqara dating to the mid first century in the Ägyptisches Museum in Berlin (see Riggs 2005: 168). It is also clear that the general composition and some elements of the clothing and paraphernalia held by the figures in the AIA fragment are similar to a panel on British Museum mummy 6694 (see Dawson and Gray 1968: 23 plate a. 43).

The Lower Fragment

This fragment is stylistically very similar to the Kharga Oasis mummy group which dates from the early decades of the Roman Period (around 1 AD), up to the mid-first century (Riggs 2005: 49). According to Riggs (2005: 49), certain stylistic elements in this fragment of the AIA mummy securely attribute it to the Kharga Oasis group.

This fragment is highly distinct in the way background colours are separated out (Figure 6). Any area of background that is entirely enclosed, either by a border or by a figure or element of a scene is given a single colour which is always different from the colour of the adjacent background area. In this way a highly distinct pattern of colouration is created where no two areas of the same colour abut each other. Riggs (2005: 49) suggests that this is indicative of either a single artist or a workshop at Akhmim and cites an example with similar colouration to the AIA mummy from the Louvre (see Riggs 2005: 54 figure 17). Another example from the Kharga Oasis with similar colouration comes from the Heidelberg University Institute of Archaeology (see Haslover 1998: 67) and is almost identical to the lower AIA fragment in its background colouration.

Another element which Riggs (2005: 49) suggests is diagnostic of the Kharga Oasis group is the presence of the Abydos reliquary (Figure 6). As was noted above, this piece of iconography is quite obscure and is not often used on mummies of the period. Its presence on the AIA mummy lends further weight to the conclusion that this fragment of cartonnage is from Akhmim, only 40km from Abydos.

Another similarity this fragment has with the Kharga Oasis mummies is the decorative elements used. The decorative design, both in composition and in the individual elements found on the Kharga Oasis mummy in the Heidelberg University Institute of Archaeology (see Haslover 1998: 67), is identical to that found on the lower fragment of the AIA mummy. In both cases the flowers used are white, have eight petals and round circles in the middle and are of the same shape. The block and line motif on the Heidelberg mummy displays the same small white circle in the middle of the coloured block and black line between the two light

coloured lines as the AIA mummy. Similarly, the lines of black dots on a light coloured background seen dividing the figures on the side areas of this fragment of the AIA cartonnage perform the same function in the Heidelberg mummy.

Also very similar in both the lower AIA fragment and the Kharga Oasis mummies is the style in which the sitting mummiform deities are represented. The second panel from the bottom of the right side of the Heidelberg mummy contains a seated figure who is identical to the figure identified as Nut in this study (Figure 7). The facial features, with the wide nostrils and naturalistic eyes as well as the form of the body and presence of the horizontal lines representing the mummy wrappings, are identical. Also identical is the sceptre held by the two figures.

Conclusion

Analysis of the decorated fragments of the AIA mummy suggests that they are stylistically different from each other. Two of the fragments can be dated and given a provenance. However, any attempt to apply the dates and provenances found in this study to the mummy as a whole should be avoided. Further work is needed before any such conclusion can be reached.

Demotic inscriptions are often used as criteria for dating Akhmim mummies (Smith 1997: 66), however none are evident on the AIA mummy. Based on style alone, it would seem that the mask is from Akhmim and dates from the mid first century BC to the mid first century AD, while the lower fragment can be securely dated from around the birth of Christ to the mid-first century AD and comes from the Kharga Oasis.

With regard to the upper fragment, it is unfortunate that it has been tampered with, however, if earlier images of reasonable quality can be found, further analysis will be possible.

The identities assigned to the deities in this study are not secure and much further work is needed on the iconography of the mummy. However, it appears that the overarching theme of the symbolism is associated with the Osirian legend.

It is of particular interest to note that two of the three cartonnage fragments are of a similar date and come from the same area. The significance of this, however, remains unclear. Finally it needs to be recorded that the mummy is in desperatate need of conservation.

Rupert-Angus Mann
LaTrobe University
RAMarchaeology@gmail.com

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Reviews

Magnus T. Bernhardsson, *Reclaiming A Plundered Past: Archaeology and Nation Building in Modern Iraq,* Austin: University of Texas Press, 2006, xi + 337 pp, 16 illus, USD 34.00, ISBN 0292709471.

Reviewed by Lamia al-Gailani Werr

In the first paragraph of the introduction Bernhardsson quotes from a 1933 Iraqi newspaper, which questioned whether Iraq had received a fair share of its antiquities, and sets himself to tell the story of archaeology in Iraq from the nineteenth to the twentieth centuries.

Whenever scholars and archaeologists want to know anything about the history of excavations or archaeological research or the decipherment of cuneiform script in Iraq, they turn mainly to Seton Lloyd's *Foundations in the Dust*, 1947, revised and enlarged in 1980, and the 1996 *The Conquest of Assyria*, Mogen Trolle Larse's book which is a detailed history of the excavations of Ancient Assyrian sites and the decipherment of the cuneiform script.

The book under review was written by a historian who is interested in modern Iraq and particularly the formation of a new country, thus he looks at archaeology from a different perspective. He considers the political, social and religious events that may have influenced the progress of archaeology in Iraq. He uses different sources for his book which he found primarily in the Public Records Office at Kew and the British Museum Archives so that he has given us a new perspective to the events that lead to the formation of the Iraq Museum and the Antiquities Department in Iraq.

The title of the first chapter: *Early Excavations in Mesopotamia* is self explanatory. It is an introductory chapter to the following four, particularly to chapter two, which discusses the western explorers/archaeologists' acquisitions of Iraqi antiquities to the benefit of the rising European Museums, that went hand in hand with the building of the empires whether British, French or German and later American. Seton Lloyd calls this *the Scramble for Antiquities* in chapter ten of his book.

Chapter two, entitled *World War I and the British Occupation*, follows the collapse of the Ottoman Empire with and the time when Iraq became the share of the British. The dilemma then facing the British was how to manage a balancing act between establishing institutions that work for the benefit of Iraq, while continuing to get the largest share of its antiquities. This is best illustrated by the Samarra Collection episode. About one hundred and twenty six boxes of antiquities excavated mainly from Samarra and other sites in Iraq were shipped by the Germans from Basra. World War I broke out when the ship was off Por-

tugal and as the Captain took refuge there Portugal seized the antiquities and declared it war booty.

There followed a diplomatic crisis of sorts, which involved nearly every major museum in Europe and America, each claiming the loot. The correspondence which Bernhardsson records, shows the prevailing imperial attitude, although some officials in the India Office and Foreign Office in London tried to return the collection to Baghdad. Eventually it was divided among the major museums and only a small sample collection was kept in the British Museum to be sent later when a museum was established in Baghdad. The Baghdad share languished in the BM until the 1930's by which time the Iraqi press started questioning the fate of their share, which according to Sydney Smith was of negligible importance. It eventually formed the nucleus of the Iraq Museum.

Gertrude Bell, who established the Antiquities Department and the Iraq Museum, is well documented in this chapter and chapter three. She devoted much of her time in the last few years before she died to running the Department. Bernhardsson highlights the disagreements between Bell and Sati' al-Husri especially with respect to Iraqi Antiquities Law and the division of antiquities with foreign expeditions. Husri became the Director of Antiquities in 1934 and the author rightly gives a lot of space to him; his legacy can still be attested in the Iraq Museum. In 1936 he amended Antiquities Law from the original of 1924. It was at this time that the present location of the Museum was chosen and the famous model of the Assyrian Gate was designed by Seton Lloyd; it was much seen on television during the looting of the Museum in 2003. Husri also contracted a German architect to design the Museum, a rather unique Art Deco Mesopotamian architecture plan.

The last chapter deals with the period of the Second World War and its aftermath. During this time the Iraqis had complete control of the management of the Antiquities Department with the return of Fuad Safar, Taha Baqir and Faraj Basmachi from Studying in Europe and the United States.

Bernhardsson's weakest section is the conclusion where he tries to discuss Iraqi policy towards the Antiquities in the last half of the twentieth Century. This is understandable as the British had lost control of Iraqi antiquities and so the official records in London do not cover the period. Most records are in Baghdad, but as his research was done in the 1990's, he was unable to obtain sufficient information.

This book is an important and essential reference to both archaeologists and modern historians as Bernhardsson has given a new window to the history of Iraq in the making.

Milbry Polk and Angela M.H. Schuster (eds), *The Looting of the Iraq Museum, Baghdad: The lost legacy of Ancient Mesopotamia,* New York: Abrams, 2005, xiii+242, plates, figures and tables, USD 35.00, ISBN 0810958724.

Reviewed by Christopher J. Davey

The history and archaeology of Iraq can not be studied at any Australian tertiary institution even though western civilisation can be traced from it. Sumer is included in the ancient history syllabus for years 7 and 8 in some States, but as it is not included in current text books, its study is falling by the way.

Recently Australia has taken up arms against Iraq and as a member of the invading coalition made possible many of the crimes involving Iraqi antiquities. While most people are aware of the looting of the Museum in Baghdad, not many understand the significance of the destruction of sites and antiquities in Iraq and the nature of the destruction. This book aims to remedy the situation and is a good introduction to the history of Iraq.

Although the text was written by a number of leading scholars, the audience is intended to be general. There are many plates of artefacts and sites that would not be out of place in a coffee table book. All contributions have maps but there is a dearth of drawings and plans leaving the text to describe architectural features.

The book begins by setting the scene as it was at the end of 2004. In the forward Donny George describes the looting during the Gulf War and its aftermath when many sites and regional museums were plundered. The recent events were therefore entirely expected. The first chapters continue the theme. Micah Garen and Marie-Hélène Carleton see looting as the product of poverty and a power vacuum, 'After the start of the 2003 war, with the complete collapse of the government, looting increased at an unprecedented rate.'(17) Of the eighteen Sumerian city-states, they claim that the sites of at least five, Isin, Adad, Zabalam, Shuruppak and Umma have nothing remaining in the top three metres.

The bulk of the book describes the history of the Museum and the history of Iraq with an emphasis on the material culture illustrated by specific objects. Usam Ghaidan, Anna Paolini and Lamia Al-Gailani Werr write about the museum and its history. All authors relate first hand accounts that bring their subjects to life, and it is the intimate involvement of the authors with their material that is a strength of the book.

Robert Biggs discusses writing and literature, Fiorella Ippolitoni Strika describes the significance of small finds in the Iraq Museum, and Diana McDonald covers a number of significant objects such as the Warka Vase and the Nimrud Ivories. Babylon and Baghdad are the subject of separate chapters by Zainab Bahrani and Vincenzo Strika

respectively, and Barbara Porter covers selected reading and resources.

The history of Iraq from the Palaeolithic is described by Ralph Solecki, Harriet Crawford, Paul Collins, Julian Reade, Elisabetta Valtz Fino and Alaister Northedge. This sweep of civilisation is good reading and given the speed with which the book was prepared, it is remarkably even. The Islamic period discussion lists the significant remaining buildings and I assume that the reason for treating the Abbasid period with brevity is that little remains in Baghdad from that time.

Anyone reading this history will come to understand the futility of the coalition attempts to stop regional influence in Iraq. Akkadians, Kassites, Hurrians, Persians, Parthians, Sasanians and so on all came from surrounding areas to hold sway in Iraq at one time or another and to add to its cultural tapestry. Until the Mongol invasion Iraq was a land of plenty and sought after by its neighbours; now oil seems to have the same lure to those further afield.

The book, unlike this review, is apolitical and not likely to offend those of any persuasion. The recurring theme is a sadness about the loss of material that would otherwise have yielded knowledge about the civilisation that we have inherited.

It may seem callous to be concerned about antiquities in the light of the human tragedy that has followed the invasion of Iraq. The book is silent on the culpability for the destruction of the world's heritage in Iraq because that is not its purpose. The aim is to educate the electorates of western countries about their heritage which has fallen on such hard times. 'As the looting continues, sadly we are still waiting for the catharsis that will make sense of this sorrow.' (19)

Raz Kletter, *Just Past? The making of Israeli Archaeology,* **London: Equinox, 2006, xix+362, figures and tables, USD 90.00, ISBN 1845530853.**

Reviewed by Christopher J Davey

Early Israeli archaeology was often suspected to be unprofessional and of doubtful integrity. The lack of stratigraphic excavation, the discarding of non-Iron Age levels, the looting of archaeological sites, the absence of comprehensive publication and the fostering of the antiquities trade were seen to set Israeli archaeology apart from that practiced elsewhere in the Middle East. Raz Kletter's book confirms much of this perspective and illustrates how this situation came about but leaves one with the view that we should be thankful that there was any Israeli archaeology at all.

Kletter provides a documented review of Israeli archaeology from 1948 until 1967. The book is arranged in chapters addressing particular facets of the subject and while this approach improves the readability, it does compromise a historical understanding. In many respects the work is a tribute to Shemuel Yeivin, the founder and first director of the Israeli Department of Antiquities and Museums (IDAM).

He tells us that in 1947 Eliezer Sukenik and Yeivin, two leading Israeli archaeologists, wanted archaeological supervision in Israel and Palestine to be united. Kletter does not discuss the reasons for their position, but it may have been related to their desire to remain associated with the Palestine Archaeological Museum, known as the Rockefeller Museum, and the Mandate heritage management system.

However as Israel set about a military campaign in March 1948 to expand its United Nations' allocated territory and expel the population, a separate administration became the only path. For Yeivin this meant starting from scratch and an on-going battle to get recognition for archaeological sites and artefacts from Israeli authorities, especially the military.

In a situation reminiscent of the recent US invasion of Iraq, Israel came into being without a government institution to supervise antiquities. Kletter documents the destruction and looting of many archaeological sites by the Israeli military and the general failure of Israeli leaders, with the exception of General Yadin the Chief of Staff (COS), to appreciate the importance of antiquities.

Kletter is aware of the works of some recent Israeli historians including Morris, Segev, and Pappe that have put paid to many of the heroic myths about the establishment of the Israeli state. He acknowledges the Israeli ethnic cleansing of the Palestinians, but he is not correct to see it as an after-thought as it actually began from the outset as a deliberate strategy (Pappe 2006). He acknowledges that most of the fighting was around historic Palestinian villages that he euphemistically calls 'settlements'. As most antiquities and historic sites were directly associated with Palestinian villages this was a concern for Yeivin.

Palestinian villages and urban dwellings were systematically destroyed after the inhabitants were driven out and denied any opportuniy to return. This according to Kletter was partly to promote the myth of a deserted land, a myth that Kletter believes Israel should now confront. Kletter describes how Yeivin who had been given a role to oversee antiquities by July 1948 tried to halt some of this destruction. Not mentioned by Kletter is the loss of historical geography that this represented. Many of the villages had histories extending back to the Bronze Age, or before, and they preserved names known from ancient texts including Scripture. We are now left with British topographic surveys done during the Mandate and Walid Khalidi's *All that remains,* a listing of the destroyed villages. If Pappe is right, the Israeli planning documents for the ethnic cleansing of the Palestinians may also be of use.

It is clear that Yeivan regarded the 1948 war as a disaster for antiquities because of the destruction of sites by the Israeli army. The destruction continued through the 1950's as the army continued to despoil sites and in some cases used them for target practice: the parallels with Iraq continue.

The description of the attempts to retain some historic areas is interesting. While most of Jaffa was destroyed some of it was kept along with Akko, ostensibly as tourist attractions, but other areas, such as the old city of Tiberius with its synagogues, were flattened. The story of Baram in northern Galilee is recounted; the military commander destroyed the village, however subsequently the remains of the synagogue were made a tourist site and the village area turned into its car park. Kletter is correct in saying that once Israel denied Palestinian refugees' right to return to their homes, destruction of them was inevitable. However there were other instances; the village of Kolonia near the western approach to Jerusalem was destroyed and its occupant expelled as late as 1959 so that tourists visiting Jerusalem would not ask awkward questions about it.

Israel today continues to be a centre of the antiquities trade. The section on what Israel called 'Abandoned Property' that is property including cultural heritage belonging to expelled Palestinians, is illuminating. In contravention of International Law much of this was sold by the custodian rather than held by the State as Yeivan would have preferred. Antiquities trading became illegal in Israel in 1978, but according to Kletter dealers still claim that their material was obtained before that time. There is also an intriguing chapter on US funds frozen by Israel and the attempts by Yeivan to get access to the money for the establishment of an Antiquities Authority.

The chapter about Moshe Dayan is most illuminating. Many international archaeologists considered Israel's tolerance of Dayan's unrestrained looting of sites to be evidence of the essential unprofessional and unethical nature of Israeli archaeology. Dayan was Israeli COS 1953-58, Minister of Defence 1967-74 and an insatiable looter of historic sites and nothing Yeivin and his colleagues did could address the situation. Kletter refers to the bizaare situation when the Israeli army was being defeated by Fatah in the battle

of Karameh as it attempted to invade Jordan in 1968, the Minister of Defence was injured looting a Bronze Age cave at Azor.

Kletter says that Dayan's most prolific looting period was after 1967 in the Occupied Territories. He passes over this without much comment, probably because it is beyond the chronological scope of the book. But the fact is that the looting of antiquities from occupied land is contrary to International Law which outlaws the sort of behaviour exhibited by many of Hitler's staff officers in Europe. Dayan was an Israeli hero and was untouchable; clearly where a state reveres such ruthlessness and lawlessness, professional and ethical antiquities management, amongst many other things, is impossible.

A chapter is devoted to the conflict between the IDAM and the Hebrew University together with the Israel Exploration Society and the founding of a body called by Kletter 'the new archaeological council'. Many of Israel's most well known archaeologists were associated with the university and some had previously been in conflict with the British Mandate Department of Archaeology. Kletter reveals that some of the University's excavations were carried on without excavation licences as if the University owned the sites. The IDAM for its part seemed to have its hands full conducting large numbers of 'salvage excavations'. It was deemed to be the successor to the Mandate and was therefore not respected by many Israeli archaeologists. There seems to have been little respect for the rule of law, and the attempt in Israel to regulate antiquities and archaeological sites by a competent government department largely ceased in 1955 when Yeivin lost out to the Hebrew University and the Israel Exploration Society.

Another chapter describes the difficult relationship Yeivin had with the Government Tourist Commission GTC. Yeivin tried to enforce IDAM's legal requirements for the oversight of antiquities, but was repeatedly ignored as the GTC excavated with gay abandon. Yeivin also wanted a say in GTC policy, but was overlooked. In 1959 Yeivin resigned over the issue and in 1962 became to founding Professor of Archaeology at Tel Aviv University.

Another interesting chapter follows describing the attempts of John Bowman to get permission to excavate *genizot* (places where disused manuscripts were kept) in Safad. Bowman recently died in Melbourne. He had been one of the first foreigners to excavate in Israel when he was at the University of Leeds. The attempt was unsuccessful, but the story illustrates the sensitivities that arise when dealing with religious issues in Israel.

Israel's early existence was uneasy as large numbers of Jewish immigrants languished in refugee camps without employment. Tom Segev *1949: The first Israelis,* has documented some of this period. Kletter describes how the unemployed were used on archaeological excavations in what we would now call 'work for the dole' schemes. Hazor is one such site excavated in this way.

Kletter is brutally honest about early Israeli archaeology

'Standards of excavation in early Israeli archaeology were not good' (305). The registration of finds was crude or not undertaken. The pictures of early excavations in the book look like poor backyard landscaping attempts and illustrate the point. Elsewhere in the world extreme care was being taken to acquire all possible information from excavated material using techniques such as the Wheeler-Kenyon method.

Eight hundred and forty excavations occurred in the first 19 years of Israel. As I cast my eyes along the shelves the only serious publication of these is that of Hazor and Beth She'arim and 'foreign' tomes still dominate the archaeological corpus of the archaeology of Palestine.

The book is not an easy read. There are lengthy quotations the salient points of which are often difficult to appreciate. It is hard to get a feel for the overall archaeological picture in Israel during the period; who dug where and when. It is not a history but a description of the relations that Yeivin and the IDAM had as illustrated by the documents, however the situation is often uncertain. A description of the 1950's IDAM licence system would help, as would a map.

Kletter is not complementary about post-1967 Israeli archaeology, possibly because it is harder to excuse the ongoing behaviour. Yeivin and his colleagues were not travelling uncharted territory, but they were operating in a time of great change. Yeivin based his approach on the professional systems he had seen adopted by the British under the mandate and taken up in neighbouring countries. By 1955 the approach was abandoned by the Israeli political and archaeological elite. The book is really about the attempt to establish the rule of law for antiquities in a country that from its establishment had flouted the rule of law. Failure was inevitable.

There are many platitudes excusing Israel's often inhumane and illegal behaviour. Kletter tries to defend the nationalistic use of archaeology in Israel by comparing European and Arab allusions to the past. This attempt is superficial and unconvincing. He also puts the view that the Palestinians should give up their right of return because to return would make them guilty, although it is not clear what they would be guilty of, however it is true that there is no easy solution to the problems created in 1948.

Non-Israelis who find comfort in ideas of modern Israel's connection with the Iron Age of Palestine may find it strange that scientific Israeli archaeology has had such a battle. The expediencies associated with establishing a state for colonists in a land already populated have been overriding. The recent forgery scandals in Israel can be traced to the freedom of the Israeli antiquities market and the belief that history is something to possess and control; scientific archaeology still has some way to go.

Khalidi, Walid 1992 *All that remains,* Washigton, DC: Institute of Palestine Studies.

Pappe, Ilan 2006 *The Ethnic Cleansing of Palestine,* Cambridge: Cambridge University Press.

Segev, Tom 1998 *1949: The first Israelis,* Owl Books.

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