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Replicating prehistoric Sudan: Anthony Arkell's object casts

Anna Garnett

At the time of writing (April 2023) intensive military and paramilitary clashes in Sudan mean that the lives of our colleagues at the Sudan National Museum and their families are at significant risk. I dedicate this paper to them in solidarity, in the hope that they remain safe and that our collaboration on this project may still take place in the future.

Introduction

Of the 80,600 objects in the Petrie Museum of Egyptian and Sudanese Archaeology, University College London (UCL), around 4000 are from Sudan. The Museum's collection was extended with finds from excavations in Sudan during the tenure of Anthony J. Arkell (1898-1980) as Lecturer in Egyptology and Honorary Curator from 1948-1963 (Garnett 2020, 67; Smith 1981, 146-147). Prior to this role, Arkell joined the Sudan Political Service and subsequently became the first holder of the new post for Commissioner for Archaeology and Anthropology in 1939 (Ille 2018, 179; Smith 1981, 143). As Commissioner, Arkell was tasked with setting up the Sudan National Museum (SNM) in Khartoum and documenting their extensive collection. This vast assignment included supervising the design of new wooden cupboards and storage drawers, the style of which Arkell later replicated at the Petrie Museum when setting up the new museum space after the Second World War (Garnett 2020, 67). At the SNM Arkell was supported in his work by Laurence Kirwan (1907-1999), his archaeological colleague in Sudan. His eventual successor as Commissioner was Peter Shinnie (1915-2007) (Janssen 1992, 58; Smith 1981, 144; Elseed 2004, 10; Garnett 2020, 66; Näser 2020, 33).

Arkell led the first official excavations of the Sudan Antiquities Service at a prehistoric site in the grounds of Khartoum Hospital in 1944-1945 (Arkell 1945; 1949a; Kantor 1951; Edwards 2004, 24-26). At this site, Arkell established the field of research in Sudanese prehistory through the identification of a pottery-using culture associated with bone and stone tools that he characterised as Mesolithic (Arkell 1949a, 111; Arkell 1975, 19-29; Smith 1981, 144; Mohammed-Ali and Khabir 2003).¹ From 1949-1950 he went on to lead excavations at Shaheinab, the site of an early Neolithic culture that he termed 'Khartoum Neolithic', which preserved evidence of sheep and goat domestication (Arkell 1953a; 1949b; 1961, 30-33; 1975, 19-29; Smith 1981, 145; Salvatori and Usai 2019, 184). Arkell's observations on the cultural signatures of these Mesolithic and Neolithic Sudanese peoples are still valued by prehistorians today (Usai 2015, 2; 2020, 101).

Finds from these pioneering excavations were shared between SNM and UCL to promote teaching and research on Sudanese antiquity (Garnett 2020, 67). In the 1950s, plaster cast sets of some of these objects were produced and distributed to museums across the world that wished to use them for teaching and display purposes. Arkell's handwritten distribution list, and related correspondence, are now kept in the Petrie Museum archives. This paper explores the histories of these object casts and their intended use as teaching aids at UCL and beyond, presenting past and present approaches to their curation and interpretation in the context of 'authenticity' and their perceived educational value in university and museum contexts.

¹ For a detailed assessment of further evidence of the Khartoum Mesolithic see Salvatori and Usai (2019, 174-182) and Usai (2014; 2020, 103-111).

Cast production and distribution

The object types presented to UCL by the Sudan Antiquities Service - i.e., those chosen by Arkell as Commissioner and his colleagues—illustrate a representative assemblage of object types from Arkell's excavations. This includes bone and ivory tools, microliths and other stone tools, reconstructed pottery vessels and sherds (mainly with 'dotted wavy line' and 'wavy line' decoration), beads, objects identified by Arkell as 'lip studs', shell specimens, and bone tools.

In 1953, these finds were transported to the UK from Sudan by Gellatly, Hankey & Co. Ltd. on the 'Staffordshire' cargo vessel and then couriered to the Petrie Museum.² Arkell notes that their transportation was successful though a small number of the shell fragments were shattered in transit.³ On their arrival at UCL several of these finds were chosen by Arkell to be replicated as plaster casts at a scale of 1:1. Following their casting a group of the objects were temporarily displayed in the Petrie Museum for the Flinders Petrie Centenary Exhibition in 1953, and then the group was returned to Khartoum (Arkell 1953b, 10).⁴ Objects chosen for casting included barbed bone harpoons, arrowheads, worked bone specimens (antelope metapodials), axeheads, bone celt, and fishing hooks cut from Nile bivalve shells (Arkell 1975, 26-27, Figures 1 and 2).⁵

Arkell describes these groups in a letter to the Ashmolean Museum's Donald B. Harden as being:

'[...] good plaster casts of bone spearheads frags. etc., from Early Khartoum, and bone harpoons, bone celts and shell fish hooks from Shaheinab.'⁶

The Petrie Museum collection contains a group of 36 plaster casts of these objects accessioned by Arkell into the permanent collection, and a secondary group which were kept as 'duplicates'.⁷ Each cast was labelled in ink with its archaeological context and the word 'CAST' to clearly distinguish them from the ancient objects. The casts were produced at UCL in 1955 by E. Martin Burgess, Petrie Museum Technician. Arkell describes Burgess' casting technique:

'The castings are impregnated with polyvinyl acetate to strengthen them, but naturally the casts of shell fish hooks are still very fragile. The castings were made in moulds of rubber latex [...]'⁸

Accession records of several of the casts in the Petrie Museum's collection note that an 'A. Rixon' also cleaned the ancient objects before they were replicated (for example, UC13939). In some cases, the casts are darkened which may suggest that they were retouched to better resemble the original object (e.g., UC13946). Future scientific analysis could be undertaken to determine the nature of any surviving pigment. Burgess identified a 'second quality' of cast which are still precise but lack the finer detail of the 'first quality' casts chosen to be accessioned (Figure 3). These 'second quality' casts may also indicate Burgess' production process and his gradual refinement of the casting technique.

Burgess produced nine further sets of casts to be distributed internationally to colleagues and institutions in Arkell's network of museums and university teaching staff in the field of Egyptian

² (1951) 'Back Matter', *Sudan Notes and Records* 32(1) [<http://www.jstor.org/stable/41724741>] (accessed 7 Apr. 2023).

³ Listed as 'shell fragments' numbers 5 (Sh I 60 10-40) and 6 (Sh K 66 10-30).

⁴ Arkell to Harden, 25 May 1955, 'The originals are now back in Khartoum' (Petrie Museum Archive PMA WFP1 6/ARK/02). The Petrie Museum archive contains manuscript and typescript copies of lists of objects chosen to be reproduced as plaster casts (Petrie Museum Archive PMA WFP1 6/ARK/03, 3a).

⁵ UC13939-13955, UC13998, UC14055-UC14059, UC14064-UC14076. Further information and images are held on the Petrie Museum's Online Catalogue [<http://petriecat.museums.ucl.ac.uk/>] (accessed 27 March 2023).

⁶ Arkell to Harnden, 25 May 1955 (Petrie Museum Archive PMA WFP1 6/ARK/01).

⁷ In 1996 a large group of the casts, identified as 'duplicates', were loaned permanently to the Carnegie Museum of Natural History, Pittsburgh, for the purposes of the comparative study of bone artefacts (Petrie Museum Loan Form Letter A647).

⁸ Arkell to 'The Director', presumed to be John Otis Brew (1906-1988), the then-Director of the Peabody Museum of Archaeology and Anthropology, Harvard University, 2 January 1955 (Petrie Museum Archive unaccessioned letter).

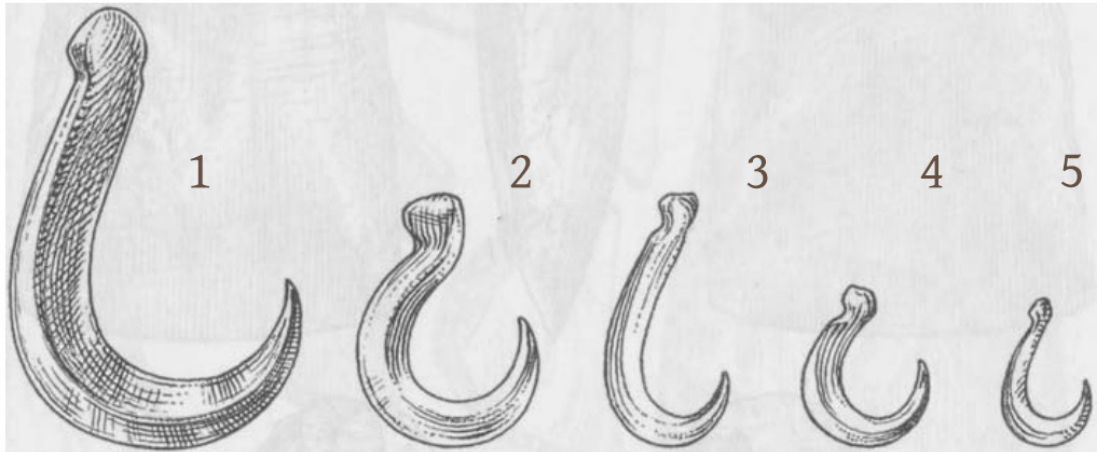


Figure 1. Shell fish hooks from Shaheinab (Sh. M81 5) dated by Arkell to the Khartoum Neolithic (after Arkell 1975, fig. 9).



Figure 2. Group of unaccessioned plaster casts of shell fish hooks from Shaheinab (Sh. M81 5) in the Petrie Museum.

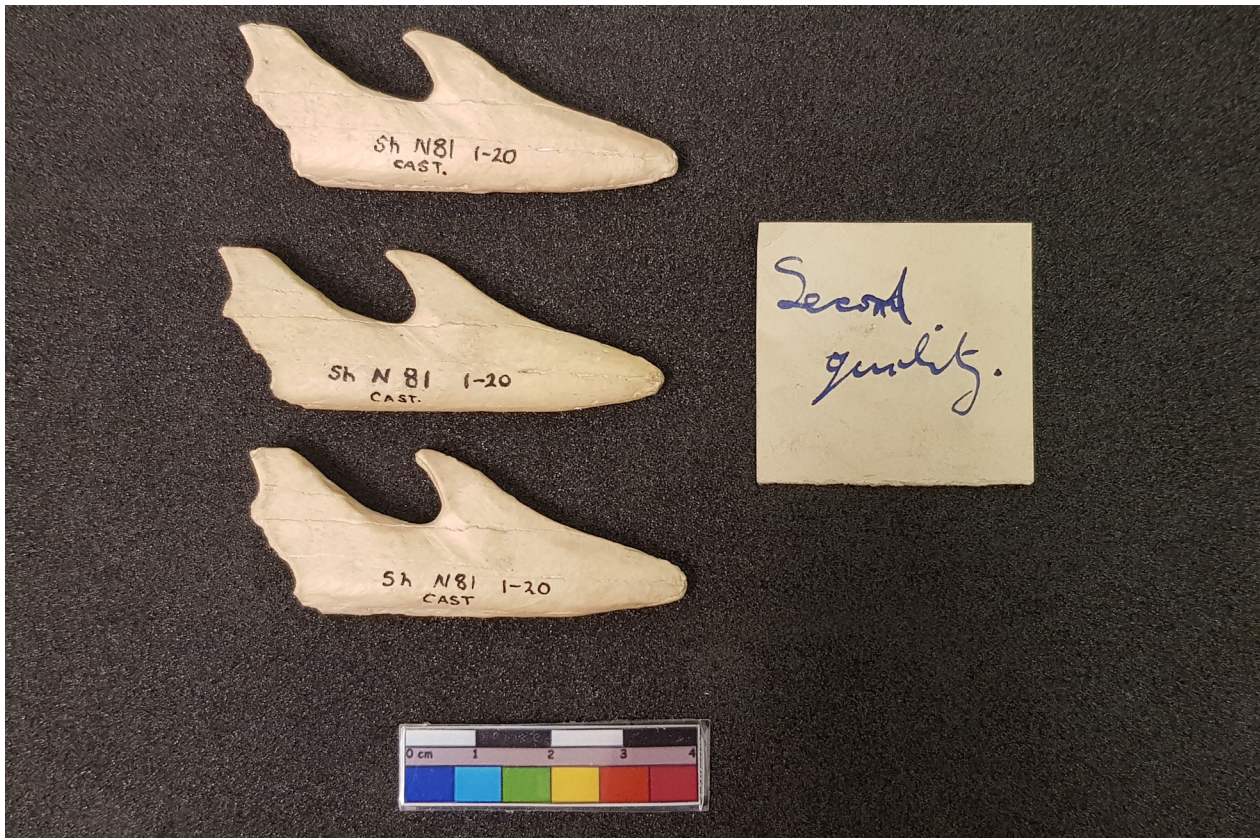


Figure 3. Three unaccessioned plaster casts of a bone harpoon from Shaheinab (Sh. N81 1-20) in the Petrie Museum 'duplicate' group labelled by E. Martin Burgess as being 'second quality'.

archaeology and African prehistory. The practice of producing and distributing plaster casts of finds from early excavations in Africa was also known elsewhere: the Petrie Museum collection contains a group of nine plaster casts of objects from the excavations at the site of Ishango, now part of the Democratic Republic of Congo, led by Belgian geologist J. de Heinzelin de Braucourt (1920–1988).⁹ This group, sent by de Heinzelin de Braucourt to Arkell in January 1960, includes a cast of the so-called 'Ishango Bone', argued to be one of the earliest representations of mathematical calculation, which held significant historical interest for Arkell (Arkell 1975, 11; de Heinzelin de Braucourt 1962; Pletser and Huylebrouck 1999).¹⁰ A plaster cast of a fragment of bone harpoon in the collection, originally found at the site of Gamble's Cave, Kenya, was also presented by Kenneth P. Oakley (1911–1981), palaeoanthropologist at the Natural History Museum, London, and remains on display in the same showcase as the Arkell casts (Oakley 1961, 86–87).¹¹

The Petrie Museum archive contains copies of letters sent by Arkell to educational institutions in the UK and internationally, inviting them to request a set of the casts so long as they covered the postage costs. This file includes some replies, and several copies of the 'master letter', written without a recipient, addressed from the Department of Egyptology, UCL, with Arkell's address 'for information' given as 'The Commissioner for Archaeology, PO Box 178, Khartoum'. A hand-written copy of the object list, and draft of the letter, preserves a note to his secretary, a 'Miss Cox', at the bottom by Arkell, asking for '11 or 12 copies' to be typed (Figure 4). In May and July 1955 Arkell wrote to the following individuals to offer their

⁹ Petrie Museum UC13514–UC13522.

¹⁰ Petrie Museum UC13519.

¹¹ Petrie Museum UC14289. The production of a set of plaster casts of a denticulated quartz biface from Arkell's work at Fashar near el-Fasher, Darfur, may also have been produced by Burgess using this technique; the original is now in the Pitt Rivers Museum, Oxford (Accession No. 1936.30.1; Arkell 1975, 11). These casts are kept with the Petrie Museum 'duplicate casts' detailed above.

1 box 13a
6/ARK/3a

✓ Keeper, Antiquities Dept, Ashmolean, Oxford. replied -
 ✓ Curator, University Museum of Archaeology & Ethnology, Cambridge. accepted
 ✓ Prof. H.W. Fairman, Liverpool. accepted - sent

refuse keep: Egypta Dept, Museum Fine Arts, Boston, 26/7/55 declined
 ? Peabody Museum of Archaeology, Harvard Univ, Cambridge 38. Mass 14/11/55
 ? Oriental Institute, Chicago.
 ? Sken. B.M.
 ? Edinburgh. Prof Stewart Piggott.
 Musée de l'Homme, Paris... (Mlle Hünner).
 Germany. (ask Stock. Munich.)
 Holland. ? Leiden. n. Rijksmuseum Amsterdam

accept Curator Congdon Memorial Museum, 26/7/55. Po Box 658 Nairobi.
 accept Institut d'Afrique Noire, 26/7/55. Dakar (many)

Dear Harden (Ashmolean), replied
Bushnell (Cambridge) sent June 1955. paid £7.7.0

We have made in this department ^{nine sets of} ~~some~~ good plaster casts
 of bone spearhead fragments from Galf Khartoum, and
 bone harpoons, bone celts and shell fish hooks from
 Shabekhat, as shown in the attached list.
 (The originals are now back in Khartoum).
 Would you like a set? The first nine acceptances
 secure. If so, let me know as soon as possible.
 Yours sincerely

15
L.S.
(9)

Copy to Commission for Archaeology, PO Box 178, Khartoum
 for a format.

~~Miss Cox~~
 Please type up to 10 or 12 copies of the letter and list, but
 for to preserve myself of the first 3

Figure 4. Handwritten list of Arkell's proposed distribution locations (Petrie Museum Archive PMA WFP1 6/ARK/3a).

Recipient	Institution
Louis Seymour Bazett Leakey (1903–1972), Curator	The Coryndon Memorial Museum, Nairobi (now Nairobi National Museum, Kenya) - accepted.
Donald Benjamin Harden (1901–1994), Keeper of Antiquities	Ashmolean Museum, Oxford - declined.
Geoffrey Hext Sutherland Bushnell (1903–1978), Curator	MAA Cambridge (then 'University Museum of Archaeology and Ethnology' - accepted, sent.
Herbert Walter Fairman (1907–1982), Brunner Professor of Egyptology	University of Liverpool (now the Garstang Museum of Archaeology) - accepted, sent.
Dows Dunham (1890–1984), Curator	Museum of Fine Arts, Boston - declined.
Raymond Mauny (1912–1994), Head of the Prehistoric Archaeology section	Institut d'Afrique Noir, Dakar, Senegal (now Institut Fondamental d'Afrique Noire) - accepted.
Addressed to 'The Director', presumed to be John Otis Brew	Peabody Museum of Archaeology and Anthropology, Harvard University - accepted.

Figure 5. List of institutions offered casts and the recipients.

institutions sets of the plaster casts, including a list of the items, indicating in his records whether they had accepted or declined (Figure 5):

Arkell listed other institutions as intended recipients, though does not note whether they were contacted and/or if they received a set of the casts, and a response is not present in the Petrie Museum Archive (Figure 6.

Arkell outlined his distribution process in his letter to H. W. Fairman in Liverpool:

'We are not a commercial concern, and though glad when those who can afford to do so can make us a financial return, having made the moulds in the first place for our own use, we shall be very happy to present your Department with the set of casts. We shall be sending them off by parcel post as soon as we can get them packed up. I hope you will like them, and will only ask you to return the packing material (boxes, etc.) to us, so that we can use them for another consignment to some other museum.'¹²

To cover the cost of postage of the sets of casts, Arkell outlines his proposed costs in his letter to G. W. Bushnell in Cambridge:

'It is kind of you to offer to pay for [the casts]. It is difficult to know what to charge. The moulds were made because we wanted casts for the Petrie Collection. If we were to cost the making of them according to the technician's hours, the price might seem prohibitive. Can you afford £7.7.0? If you can, we should buy with it a copy of *A History of Technology*, Vol. 1, by Singers and others, for use in this Department.'^{13;14}

The diversity of institutions approached by Arkell indicates his interest in sharing the casts widely; however, this also represents the strength of Arkell's position in Sudan's colonial administration and his professional and personal network connections. By arranging to send these sets around the world, Arkell was also sharing his archaeological interpretations and vision for the teaching of the history of the Nile Valley around the world, much as his predecessor William Matthew Flinders Petrie (1853–1942) had done before him (Stevenson 2015, 91). While academic institutions teaching Egyptology in the UK and beyond

¹² Arkell to Fairman, 28 June 1955 (Petrie Museum Archive PMA WFP1 6/ARK/04).

¹³ Arkell to Bushnell, 15 June 1955 (Petrie Museum Archive PMA WFP1 6/ARK/07).

¹⁴ Bushnell presented Arkell with the requested volume in exchange for the casts and returned the packing boxes as requested for future use (Bushnell to Arkell 22 June 1955, Petrie Museum Archive PMA 6/ARK/08; Arkell to Bushnell, 23 June 1955, Petrie Museum Archive PMA WFP1 6/ARK/08).

Person	Institution
Not named	Oriental Institute, Chicago
Stewart [sic Stuart] Piggott (1910–1996), Abercromby Chair of Archaeology	University of Edinburgh
Mme. Alinea?	Musée de l'Homme, Paris
Not named	Germany, Munich?
Not named	Holland, Leiden Rijksmuseum?

Figure 6. List of additional institutions and recipients of plaster casts.

were prioritised as recipients of these cast sets, museums of African history and global prehistory were also seen as appropriate destinations for these replicas. At least two instances are known where Arkell's offer of a cast set was declined: the Museum of Fine Arts Boston and the Ashmolean Museum, Oxford. At the latter, the then Assistant Keeper in the Department of Antiquities, Donald B. Harden, responded to Arkell to turn down his offer owing to the changing status and perception of plaster casts at the Ashmolean Museum in the 1950s:

'I hope you will not mind if we say no to your very kind offer. My experience is, that in a collection as large as ours the status of the plaster cast in general is very low, and that those that we do possess are gradually shouldered out into cupboards, if they do not get a worse fate. So many plaster casts for which good money has been paid in the past are in that state now that I rather hesitate to accept others.'¹⁵

Replicating archaeology and defining authenticity

While the value of replicas in contemporary museum practice has improved over recent years, the perceived educational and aesthetic value of casts and other copies of objects has been mixed over the past two centuries.¹⁶ During the 19th century, early casts acquired by private collectors and museums largely adhered to the canon of 'beautiful' classical sculpture, focusing mainly on ancient Greek works which had a major impact on artistic production and aesthetic tastes (Alexandridis and Winkler-Horaček 2022, 4; Payne 2019, 119).¹⁷ In the 1950s and 1960s, many art schools and museums marginalised, reduced and systematically destroyed these casts of classical and modern sculpture that had been collected and held in such high regard during the 19th century (Payne 2019, 113).¹⁸ Arkell's interest in the production of plaster casts represents a counterpoint to these prevailing views, such as those noted by Harden at the Ashmolean Museum: while replicas of small finds from excavations are of course different to large-scale sculpture, he recognised the inherent value of casts and replicas for educational purposes when other institutions were disposing of their cast collections. A growing interest in the production, use-lives and destruction of object casts and replicas over the past two decades has led to further appreciation of the Petrie Museum's diverse collection of modern replicas, including Arkell's plaster casts.

The 'primacy of the original' was considered paramount even from the early 20th century, owing in part to the increase in archaeological excavations (and therefore access to genuine finds) globally (Payne

¹⁵ Harden to Arkell, 3 June 1955 (Petrie Museum Archive PMA WFP1 6/HAR/01).

¹⁶ <https://www.museumsassociation.org/museums-journal/news/2020/08/museums-urged-to-rethink-their-treatment-of-replicas/> (accessed 12 April 2023).

¹⁷ Note for example the classical cast collections of the University of Cambridge's Museum of Classical Archaeology [<https://www.classics.cam.ac.uk/museum/about-us/why-casts>] (accessed 7 April 2023) and the British Museum cast collection (Payne 2022, 201–222).

¹⁸ https://www.nationalmuseums.org.uk/media/documents/publications/too_much_stuff.pdf (accessed 7th April 2023).

2022, 213). Payne (2022, 202-204) distinguishes between 'archaeological' and 'artistic' casts, noting that the former were commonly produced in the field as accurate copies of vulnerable original objects or sites perceived to be at imminent risk of decline, preserving evidence that may otherwise be lost. The changing value of casts is embedded in these general sector trends but is also linked with their individual biographies and educational potential, particularly where a cast is considered as a substitute for the prototype and its historically specific context (Bunce 2016, 230; Alexandridis 2022, 105). In the case of Arkell's plaster cast sets, the historical context of the archaeological finds is well documented and their importance to the history of prehistoric Sudan was clearly expressed through Arkell's publications (Arkell 1949a; 1949b; 1953a).

Hampp and Schwan (2014, 349) define 'authentic' objects as 'original objects that once served a real-world purpose and bear historical significance, are very important to the collections of museums, as they increase any museum's prestige, have high economic value, and allow for historical research'. The perceived lack of 'authenticity' of replicas often means that museums do not display casts next to the 'authentic' object due to concerns of aesthetic ideals or scientific interpretation (Alexandridis 2022, 105). This can lead to the concealment of replicas from display, or to their deaccessioning and disposal. This approach is linked to different institutions and different disciplines: university museums may be perceived as bridging a gap between the 'artistic' and 'scientific' appreciation of replicas, though the degree of this appreciation can differ vastly between institutions at different periods, and according to changing public perceptions. Arkell's plaster casts continue to be displayed together at the Petrie Museum with original finds from his Early Khartoum excavations: he clearly placed value on these casts as substitutes of their



Figure 7. Current Petrie Museum permanent display of finds and casts of objects from Arkell's excavations in Sudan (April 2023).

prototypes - the 'authentic' objects. Due to the continuity in the display of the Sudanese material at the Petrie Museum, these messages are still communicated today (Figure 7).

The Arkell plaster casts at UCL

Arkell curated the display of the plaster casts retained for UCL when he unpacked the Petrie Museum collection in preparation for its post-war reopening in 1953 (Janssen 1992, 64). Arkell's displays highlighted the importance of early Sudanese material culture, as part of an extended chronological display illustrating the broader development of material culture in the Nile Valley, from the Palaeolithic Period to the New Kingdom in Egypt. With some minor modifications by subsequent Petrie Museum staff, these displays remain intact at the Petrie Museum today, showcasing ancient Sudan as Arkell wished it to be seen. As well as their potential for museum display, Arkell also recognised the value of the plaster casts, as well as the 'authentic' objects from his excavations, for teaching purposes in a university and museum context. He emphasises this point to the Peabody Museum's Director John Otis Brew:

'You will find that you can study the methods of production from the original objects from the casts just as well as from the originals [...]'¹⁹

In his letter offering a set of the casts to H. W. Fairman at the University of Liverpool, Arkell references their potential 'for teaching purposes in your department'. Fairman wrote back to Arkell enthusiastically about how he planned to use the casts in a new 'teaching collection':²⁰

'In principle, I should be very glad to have a set of your casts. We have just been given the use of the adjoining building and when that is fitted out and in order our space will be almost doubled, and thus for the first time I should have the space to fit out and display a teaching collection of antiquities.'²¹

Establishing the precise use of these casts in Arkell's own teaching in his role as Lecturer of Egyptology at UCL is problematic. The 1951–1952 UCL College Calendar lists Arkell as teaching classes on general aspects of ancient Egyptian history and culture, with one module (A1) focused on 'Art, Architecture and Small Antiquities of Ancient Egypt', without reference to Sudan, and another dedicated to object restoration (Module A8). From 1954 Arkell held his classes in the newly opened museum space in Malet Place, primarily for first-year Undergraduate students, lecturing on aspects of Egyptian and Sudanese prehistory (Janssen 1992, 73). According to his colleague E. Martin Burgess, Arkell's rule was that 'the antiquities came first, but their use was the most important thing about them' (Janssen 1992, 78). It is reasonable to suggest that Arkell included finds - and probably also the plaster casts - from his excavations in Sudan in these museum-based classes, as Walter Bryan Emery (1902–1971) may also have done when he took on Arkell's teaching following his retirement from UCL in 1963 (Smith 1981, 147). These finds, and the casts, are regularly included in object-based teaching sessions today at the Petrie Museum to illustrate diverse subjects including African prehistory, the principles of conservation, and the impact and legacies of British colonial activity in Sudan.

Conclusions and future work

The ancient finds from Arkell's Sudan excavations, and their plaster casts, continue to be used in object-based teaching and display at the Petrie Museum today. The casts are recognised as objects in their own right, as they were by Arkell, with inherent educational, documentary and didactic value as vehicles for the teaching and interpretation of early Sudanese cultures. The plaster casts hold great potential for future research and interpretation, both at the Petrie Museum and beyond. Their current display

¹⁹ Arkell to 'The Director', presumed to be John Otis Brew, 2 January 1955 (Petrie Museum Archive unaccessioned letter).

²⁰ Arkell to Fairman, 23 June 1955 (Petrie Museum Archive PMA WFP1 6/ARK/02).

²¹ Fairman to Arkell, 27 June 1955 (Petrie Museum Archive PMA WFP1 6/FAI/01).

retains the scholarly labels produced for the objects and the casts during the 1970s and 1980s. These small typewritten labels were written with UCL students and staff as a key audience and are otherwise often inaccessible to general visitors to the Petrie Museum. To begin to remedy this situation, a selection of the plaster casts of objects from Arkell's excavations in Sudan have recently been included in the Museum's new permanent entrance gallery displays, where they are presented in the wider context of Arkell's work in Sudan and the Museum's Sudanese collection (Garnett 2021, 31). It is anticipated that this focus on making the context of these objects more accessible to museum visitors will continue, with the development of permanent new interpretation in the main galleries in the future.

With this in mind, the Petrie Museum has been at the forefront of 3D technology development in museums over the past decade and, much like Arkell, continues to pursue innovative approaches to object replication to better facilitate learning.²² Growing awareness of the craft value of plaster casts is linked with the increasing use of technologies in museums, which among other qualities can facilitate further comparison between the casts and the ancient objects, particularly where the ancient original is now lost. The further application of 3D technologies to capture and share the Petrie Museum's Sudan collection digitally could include virtual reconciliation of object groups with the finds now kept in the Sudan National Museum, as well as any other surviving sets of the casts around the world.

The social history behind the creation of these casts, set in the context of British colonial administration in Sudan, highlights the importance of the professional networks through which Arkell disseminated his vision of ancient Sudan to a global audience. The process of identifying extant cast sets and reconciling associated archival material is ongoing, and it is hoped that further research into their distribution from UCL may shed further light on their use over the past 70 years. The strong historical links between the Petrie Museum and the Sudan National Museum, based on the similarities in object storage and documentation as the result of Arkell's vision for both institutions, would also repay deeper research. This work could present valuable opportunities for reciprocal skills exchange between staff of both institutions, who share many of the same issues relating to collections care.

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²² The 2020-2021 UCL Creating Aspirations project 'Discovering Ancient Sudan' used 3D prints of Sudanese objects in the Petrie Museum collection in a virtual learning environment to share ancient Sudanese history with primary school children in East London [<https://www.ucl.ac.uk/ucl-east/news/2021/jun/discovering-ancient-sudan-creating-aspirations-takes-school-children-virtual-tour>] (accessed 12 April 2023).

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