

Field and Technical Report

PLEISTOCENE FIGURATIVE ART MOBILIER FROM APOLLO 11 CAVE, KARAS REGION, SOUTHERN NAMIBIA

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(Received September 2014. Revised March 2015)

ABSTRACT

Southern Africa has provided much information concerning the cultural, technological and cognitive evolution of *Homo sapiens*. As indications of cognitive complexity that become prevalent during the Middle Stone Age, abstract and figurative art present explicit evidence for modern and symbolic human behavioural capacity. The only examples of African figurative art securely dated to the Late Pleistocene comprise seven stone plaques from Apollo 11 Cave in the Huns Mountains, Karas region, Namibia. These were recovered by Wendt in 1969 and 1972 from levels dated to c. 30 000 years ago. Given the cultural and evolutionary significance of these artefacts, the objective of this report is to make available high resolution actual-size colour and digitally enhanced photographs of these unique examples of early art mobilier. Chemical analysis of the plaques and the pigments that compose the imagery is ongoing and will be presented in a forthcoming publication.

INTRODUCTION

Abstract and figurative art present widely recognised mediums for assessing the evolution of human cognitive modernity (Henshilwood & d'Errico 2011). Figurative depictions explicate the artist's deepest subconscious state of mind (Thomas & Silk 1990) while visually organising a shared culture through exchanging information (Cox *et al.* 2001). For decades, the earliest known parietal figurative art comprised painted and drawn images from Chauvet Cave, France, at 32.44 ± 0.720 ka (Clottes & Geneste 2012). The publication of Uranium series (U-series) dates for calcites underlying a red painted anthropomorph from Tito Bustillo, Spain, at 36.2 ± 1.5 ka, extended the age of European figurative art by millennia (Pike *et al.* 2012). The earliest abstract parietal art is a painted red disk at El Castillo, Spain, dated by U-series to 41.4 ± 0.57 ka. This places parietal art in the Proto-Aurignacian, a period associated with Neanderthals, preceding the arrival of *Homo sapiens* in western Europe. In Indonesia, the U-series dating of speleothems overlying a human hand stencil at Leang Timpuseng provided a minimum age of 40.70 ± 0.86 ka for the image and a date of 36.90 ± 1.55 ka for a babirusa (pig-deer) from Leang Barugayya 2 (Aubert *et al.* 2014). The earliest ages for South African parietal art are for human figures painted on exfoliated slabs from Steenbokfontein Cave, dated by accelerator mass spectrometry (AMS) on associated charcoal in the deposit to 3640 ± 60 BP (PTA-6805) to 3635 ± 30 BP (PTA-7020) (Jerardino & Swanepoel 1999). AMS dating on carbon-based pigments on flakes from a painted panel in the Drakensberg indicates ages of between 2100 ± 40 and 2072 ± 28 years BP (Bonneau *et al.* 2011).

Some of the earliest examples of portable forms of art comprise the figurines from Tan Tan in Morocco, associated with a fluvial deposit with middle Acheulian lithics of ~300–500 ka

(Bednarik 2003), and from Berekhat Ram, Israel, dated to 250–280 BP using the Argon-argon ($\text{Ar}^{40}/\text{Ar}^{39}$) method (Feraud *et al.* 1983; d'Errico & Nowell 2000). *Art mobilier* has also been recovered from European Palaeolithic contexts, including a carved ivory figurine from Hohle Fels, Germany, at 35 ka (Conard 2009), ceramic figurines from the Czech Republic at 31 ka (Soffer *et al.* 2000), painted plaques from Parpalló Cave, Spain, at 26 ka (Roldán *et al.* 2012) and an engraved figurine from Předmostí, Czech Republic, dated to 26 ka (d'Errico *et al.* 2011). Portable art is also reported from Australia, with the most recent example being a painted stone slab from Nawarla Gabarnmang dated to 28 ka (David *et al.* 2012).

Ages for southern African portable abstract art range from ~500 ka (Beaumont & Vogel 2008) to 187 ka (Jacobson *et al.* 2012) and as recently as AD 1800 (Morris & Beaumont 1994). Early examples comprise engraved ochre from Pinnacle Point dated to 164 ka (Marean *et al.* 2007), Klasies River at 100 ka (d'Errico *et al.* 2012), Blombos Cave dated to 100–72 ka (Henshilwood *et al.* 2002, 2009) and from Klein Kliphuis at 50 ka (Mackay & Welz 2008). Engraved ostrich eggshell fragments have been recovered from Diepkloof Rock Shelter (Texier *et al.* 2013), Klipdrift Shelter (Henshilwood *et al.* 2014) and Apollo 11 (Vogelsang *et al.* 2010) in levels dated to between ~85 and 52 ka. At Blombos, two bone fragments dated to ~75–72 ka, exhibit possible engravings (d'Errico *et al.* 2001). An MSA bone point from Peers Cave bears markings reminiscent of those used as marks of ownership on San arrow points, and an MSA bone tool from Klasies River bears possible deliberate engravings (d'Errico & Henshilwood 2007).

Given the evidence that fully modern human behaviour originated in sub-Saharan Africa (Henshilwood *et al.* 2009, 2011; Lombard 2011, 2012), the Middle and Late Pleistocene ages (MIS 6 at 190 ka to MIS 3 at 60 ka) reported for *art mobilier* are not unusual. The final abstract mobiliary art occurs during the terminal phases of the MSA Howiesons Poort (HP) at ~50 ka. Following a hiatus of some 20 ka for all types of southern African art, seven stone plaques, four of which bear figurative imagery, were recovered during excavations at Apollo 11 Cave in Namibia. These are currently the earliest examples of African representational art, dated by radiocarbon and optically stimulated luminescence (OSL) methods to ~30 ka (Wendt 1972, 1974, 1976; Jacobs *et al.* 2008; Vogelsang *et al.* 2010). No coexistent examples have been discovered, and figurative *art mobilier* only reappears after the Last Glacial Maximum to become a recurring feature in Later Stone Age (LSA) contexts (Thackeray *et al.* 1981; Morris & Beaumont 1994; Pearce 2010).

APOLLO 11 CAVE

Apollo 11 Cave was first described by Wendt (1972, 1974) in the early 1970s. The cave is located in a limestone cliff face,

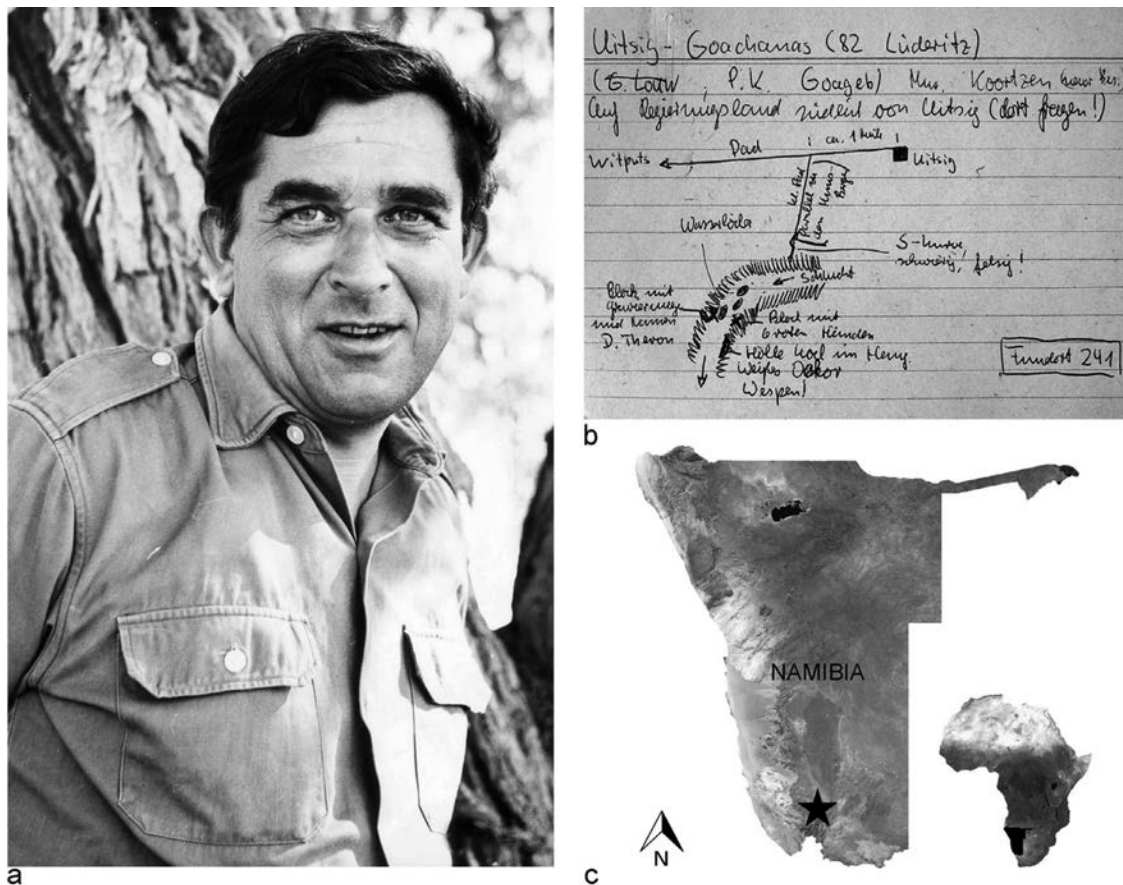


FIG. 1. (a) Wolfgang Erich Wendt in the 1970s (photograph courtesy of Antje Otto), (b) the map originally drawn by Wendt, based on directions to engraved sites received from E.R. Scherz and Mr Koortzen, and (c) a map of southern Africa indicating the location of Apollo 11 Cave in Namibia.

along the upper Nuob River in the Huns Mountains, Karas region, southern Namibia. The cave was discovered based on directions to engraved rock art sites provided by E.R. Scherz and a Mr Koortzen, the former owner of the farm *Uitsig* on which the cave was situated (W. Erich Wendt, pers. comm. 2014). Before its discovery, the name *Goachanas*, which refers to a spring located 2 km from the site, was used to refer to the valley below the cave. Captivated by the radio coverage of the Apollo 11 spacecraft mission which returned to earth in July 1969, Wendt decided to name the site after the first successful lunar landing (W. Erich Wendt, pers. comm. 2014) (Fig. 1).

Wendt commenced excavations at Apollo 11 in 1969. The deposits were excavated in spits of between 5 and 20 cm, or stratigraphically where possible (Wendt 1974). Trench A was excavated in 1969 and includes eleven 1 m² squares labelled A12 to A2. Four of the plaques, here referred to as AP1, AP3, AP4 and AP5, were recovered from square A9 in August 1969. In 1972, two extensions in square A9 (A9X1 and A9X2) were excavated to clarify stratigraphic concerns and to establish the positions of the plaques recovered in 1969. In addition to the first four plaques, three further plaques (AP2, AP6 and AP7), one fitting to a fragment from the excavation in August 1969, were recovered in October 1972 (Wendt 1974, 1976) (Table 1).

The stratigraphic sequence of the site is divided into five major units labelled 0 to IV, including several sub-units labelled A to H (Wendt 1974). In 2007, Vogelsang and colleagues (2010) divided the sequence into 24 units labelled A to Z. Unit L is an early Later Stone Age (ELSA) deposit characterised by the occurrence of white ash with fine-grained limestone rubble. Unit M is a dusty brown sediment interspersed with finely laminated grit layers, indicating continuous weathering of the roof of the cave (Vogelsang *et al.* 2010). Unit M corresponds

with Layer E (Wendt 1974) and is described by Wendt (1976: 7) as follows:

The uppermost horizon contains blades assigned to the MSA. This layer has an average thickness of 30 cm, stretches over more than 20 ka and ought to consist of several distinct horizons. But owing to the relative scarcity of artefacts in general and of typical tools in particular throughout this layer, no marked differences within this unit are obvious at the present stage of artefact analysis. Fragments of several painted slabs and a small pebble bearing traces of paint have been recovered from a concentration in the uppermost horizon of this layer. One edge-damaged blade bearing traces of mastic around the basal third of its length is worth mentioning.

Whereas the underlying Unit N comprises a rock-fall horizon that separates the HP from the final MSA, Unit P corresponds to the HP cultural phase and Unit S marks a hiatus between the HP and the Still Bay (SB). Unit T is characterised by an increase of angular debris and corresponds to the SB cultural phase (Vogelsang *et al.* 2010).

The *art mobilier* was recovered from the uppermost horizon of Layer E (Unit M), at the interface between the latest MSA and the earliest LSA levels. Radiocarbon ages of ~8–26 ka were originally reported for these levels (Wendt 1974, 1976), with four dates (PTA-1040, KN-I 813, KN-2056 and KN-2115), indicating a mean age of 28.5 ± 0.59 ka for the deposits surrounding the plaques (Wendt 1974, 1976). In 2007, a team from the University of Cologne collected eight OSL samples (Jacobs *et al.* 2008) and subjected 44 samples from the original excavations to AMS dating (Vogelsang *et al.* 2010). Eight of the nine age estimates for the late MSA were considerably older than those associated with the earliest LSA. The lower LSA has

TABLE 1. Inventory of the seven stone plaques recovered from Apollo 11 in 1969 and 1972. The plaques are curated at the National Museum of Namibia in Windhoek under catalogue numbers 2000–2500 (dimensions are indicated in millimetres for breadth, height and width, respectively).

Plaque number	Provenance	Recovered	Geology	Dimensions	Pigment
AP1 (NMN CN 2000–2500) Hindquarters	Square A9 +10 cm	1969	Micaceous shale schist	64.07 92.73 9.11	Black Red Yellow White
AP2 (NMN CN 2000–2500) Head and torso	Square A9 Extension 2 + 11 cm	1972	Micaceous shale schist	48.96 89.41 9.12	Black White Yellow
AP3 (NMN CN 2000–2500) Zebra	Square A9 +2 cm	1969	Micaceous shale schist	80.77 131.24 9.75	Black White Yellow
AP4 (NMN CN 2000–2500) Rhinos	Square A9 + 2 cm	1969	Micaceous shale schist	134.89 107.93 17.33	Black White Orange
AP5 (NMN CN 2000–2500) Unidentified	Square A9 + 2 cm	1969	Micaceous shale schist	129.77 96.11 10.09	Red Black Grey White
AP6 (NMN CN 2000–2500) Zebra	Square A9 Extension 1 –5 cm	1972	Micaceous shale schist	132.05 67.15 7.92	Black White Red
AP7 (NMN CN 2000–2500) Unidentified	Square A9 Extension 2 + 8 cm	1972	Micaceous shale schist	140.42 115.49 23.27	Black White Red Orange

a weighted mean age of 22.3 ± 0.4 ka and the uppermost MSA a mean age of 29.8 ± 1.1 ka. An AMS date of 29.0 ± 0.4 BP (KIA-35917) and an OSL age of 29.4 ± 1.4 ka were obtained for the same deposits (Jacobs *et al.* 2008; Vogelsang *et al.* 2010). Given these dates, and the fact that the uppermost MSA has a weighted mean age of 29.8 ± 1.1 BP (Vogelsang *et al.* 2010), we consider the plaques to be reliably dated to ~ 30 ka.

ART MOBILIER

Permission to analyse the plaques was granted by the National Heritage Council of Namibia and the National Museum of Namibia (permit number 25/2013) and took place in March 2014. Our descriptions of the plaques are based on those provided by Wendt (1974, 1976) and on information obtained during a meeting with him in Windhoek on 15 March 2014. Based on observations under low magnification, we consider the original figure captions and descriptions (Wendt 1974, 1976) to be accurate. The plaques are numbered according to the order ascribed by Wendt (1974) (Figs 2–7).

Because the plaques have been glued onto wooden panels and covered in glass casings, their posterior sections could not be examined. Storage conditions have also resulted in the accretion of dust particles and of fungiform activity on the stones. Prior to visual analyses and photographic documentation, dust particles were dislodged with gentle air pressure. No attempts were made to remove other materials from their surfaces.

The plaques were photographed with a 16.2 MP Nikon D4 digital SLR camera fitted with a Nikon 60 mm AF-S Micro-Nikkor lens. A Nikon R1C1 Wireless Speedlight System was used as the primary light source and two Nikon SB-900 AF flash units provided diffused light. All photographs were taken in raw (NEF) format at ISO 200 and f-stop 14. Each plaque was documented by way of: 1) single-exposure photographs, and 2) multiple overlapping shots at close range (~ 5 cm) and in relation to a photographic grid system. The photo-mosaic images (NEF-files) were imported into Nikon Camera Raw 8.6 and

their exposure, white balance, sharpness and contrast settings adjusted. Geometric lens distortion was corrected with the Lens Profile correction utility and the final photographs were exported as uncompressed RGB TIFF files. The images were reduced to their actual sizes using the Adobe Photoshop image resampling tool and by applying the Bicubic Sharper interpolation mode. Images were prepared for printing by re-sharpening (using Unsharp mask), adjusting their contrast (using Levels) and by converting the digital format from RGB TIFF (600 dpi) to CMYK JPEG (600 dpi). The mosaic images were digitally enhanced with DStretch[®], a programme that employs a decorrelation stretch algorithm to enhance images by increasing hue and contrast and by rendering these in artificial colours (Harman 2008). Colour rendering in the enhanced versions is not realistic and colour rendering in the original versions may vary according to printing technology and screen resolution.

Wendt (1974: 27) originally referred to the image on AP1 and AP2 (Fig. 2) as a depiction of a *raubkatze* or feline or, given the two hornlike features emanating from the top of the head, an oryx antelope (*Oryx gazella*). Pigments comprise mainly black and grey types, but traces of orange and red colours also exist. AP3 (Fig. 3) and AP6 (Fig. 6) contain partial depictions that presumably represent zebra (*Equus zebra*) (Wendt 1974: 28, 31). Resembling the black lines on AP3, the lines comprising the *nashorn* (Wendt 1974: 29) or black rhinoceros (*Diceros bicornis*) on AP4 (Fig. 4) appear to have been drawn over a translucent white pigment, possibly applied in liquid form. Wendt (1974: 30) noted the presence of a *schwarzen tierkörpers* (black animal body) and a *springender bock* or springbuck (*Antidorcas marsupialis*) antelope on AP5 (Fig. 5). We cannot discern an obvious figurative depiction, but the plaque does contain various superimposed traces of black, grey, white, orange and red pigments. AP7 (Fig. 7) comprise a *nicht eindurig erkennbaren* (Wendt 1974: 32) or ‘unrecognisable’ depiction, and traces of black, white, orange and red pigments and several semicircular remnants of what may represent dried-out traces of liquid paint drops, are discernible.



FIG. 2. AP1 and AP2 depict an image of what has been widely referred to as a therianthrope.

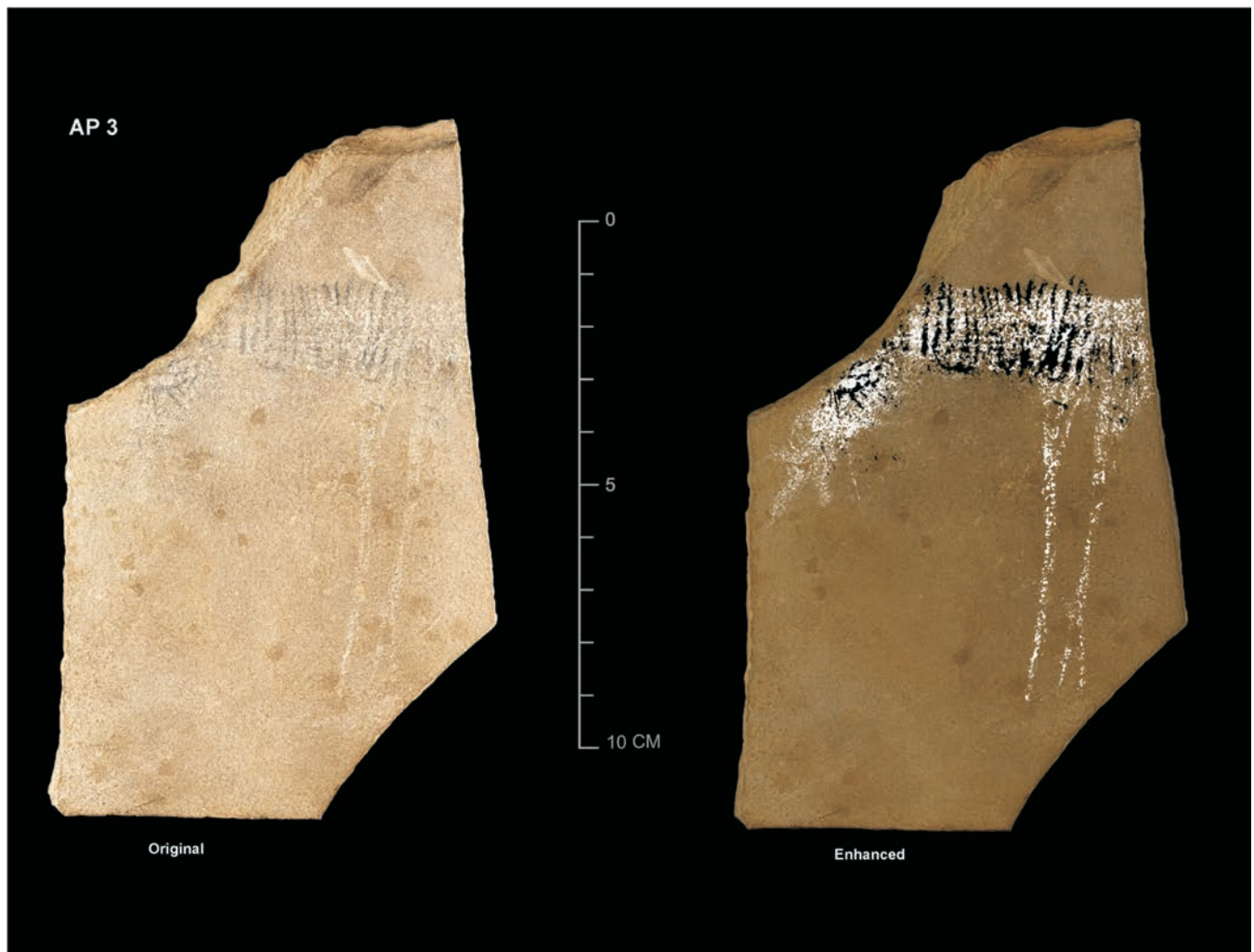


FIG. 3. AP3 is a fragment of a formerly larger stone slab and contains a partial depiction that conceivably represents 'zebra'. $\times 0.75$

DISCUSSION

The Apollo 11 *art mobilier* derives from a confined anthropogenic horizon that marks the transition between the MSA and LSA and which has been dated to ~ 30 ka. We concur with Wendt's (1976) statement that the plaques are not exfoliated portions of an originally larger parietal panel. Besides the different geological origins of the plaques, the central position of the depictions on three plaques (AP1 and 2, AP3 and AP4) and the concentration of these in only 1.5 m^2 (Wendt 1974) support this inference. Associated artefacts comprise a pebble bearing traces of pigment, an edge-damaged blade with traces of mastic (Wendt 1976) and 45 pieces of shale-derived ochre and haematite.

Visible traces of charcoal occur on AP2, AP3 and AP6, most generally in the form of 'drawn lines'. Traces of red ochre or haematite occur on AP4 and AP7 and traces of grey shale on AP5. A single deep engraved line occurs on AP3 and may have been created prior to the application of pigments. Some plaques (AP3, AP4 and AP6) contain traces of a flakey, white translucent substance which may be the remains of a white pigment or a preparatory base. San artists possibly prepared rock surfaces for painting by washing with acidic liquids such as plant or fruit juice (Bonneau *et al.* 2012).

Instances of superimposition are clear on AP2, AP3, AP4, AP5 and AP6 and indications that parts of original images were redrawn occur on AP2 and AP3. Substantial amounts of prehensile polish are present on the edges of AP4 and AP7. Black residues and reddish discolouration on AP1, AP5 and

AP4 suggest that some plaques may have been heated. Whether this was deliberate is unclear, but it appears to have resulted in the thermally induced fracturing and discolouration of some plaques. Indications of edge flaking on AP1 and AP2, AP4 and AP7 suggest that the plaques may originally have been shaped by deliberate knapping. In contrast to AP2, the adjoining AP1 exhibits numerous percussion marks, indicating that the plaque was repeatedly struck after the image was created. In the case of AP6, scars along the edges indicate that areas formerly covered in pigment were removed by systematic flaking. Some of the plaques also bear residual traces of former liquid and possibly paint-like mixtures. The occurrence of a residue rich in red and black particles on AP6 suggests that it may have been used as a palette on which to mix pigmentary ingredients. Several semicircular traces of what possibly represent dehydrated paint drops are also distinguishable on AP7.

Resembling the Hohlenstein-Stadel therianthrope figurine (Wynn *et al.* 2009; Porr 2010), the Apollo 11 plaques provide much inspiration for discussions concerning prehistoric symbolism and ideology. Based on the perceived combination of animal and human physical characteristics, an attribute widely associated with shamanistic cosmology (Lewis-Williams 1981), several authors have referred to the depiction on AP1 and AP2 as therianthrope (Lewis-Williams 1984; Jolly 2002). Depictions of therianthropes in southern African San rock art have been interpreted as humans disguised as animals (Lee & Woodhouse 1970; Thackeray 1983), as portrayals of 'spirits-of-the-dead' (Vinnicombe 1976; Blundell 2004) and as 'people of



FIG. 4. AP4 contains a possibly 'drawn' outline depiction of what conceivably represents a rhinoceros.

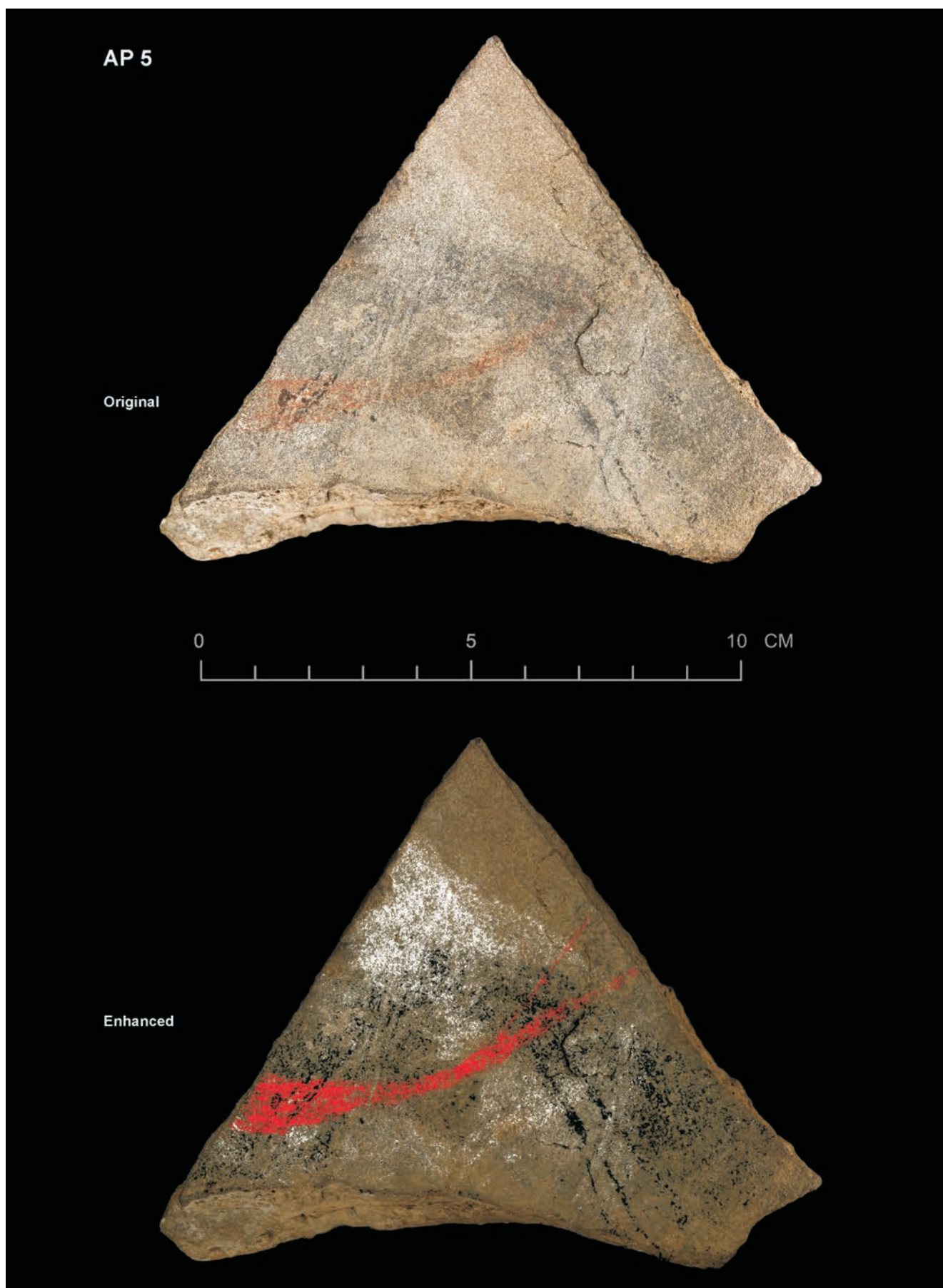


FIG. 5. AP5 contains various traces of black, grey, white, orange and red pigments.

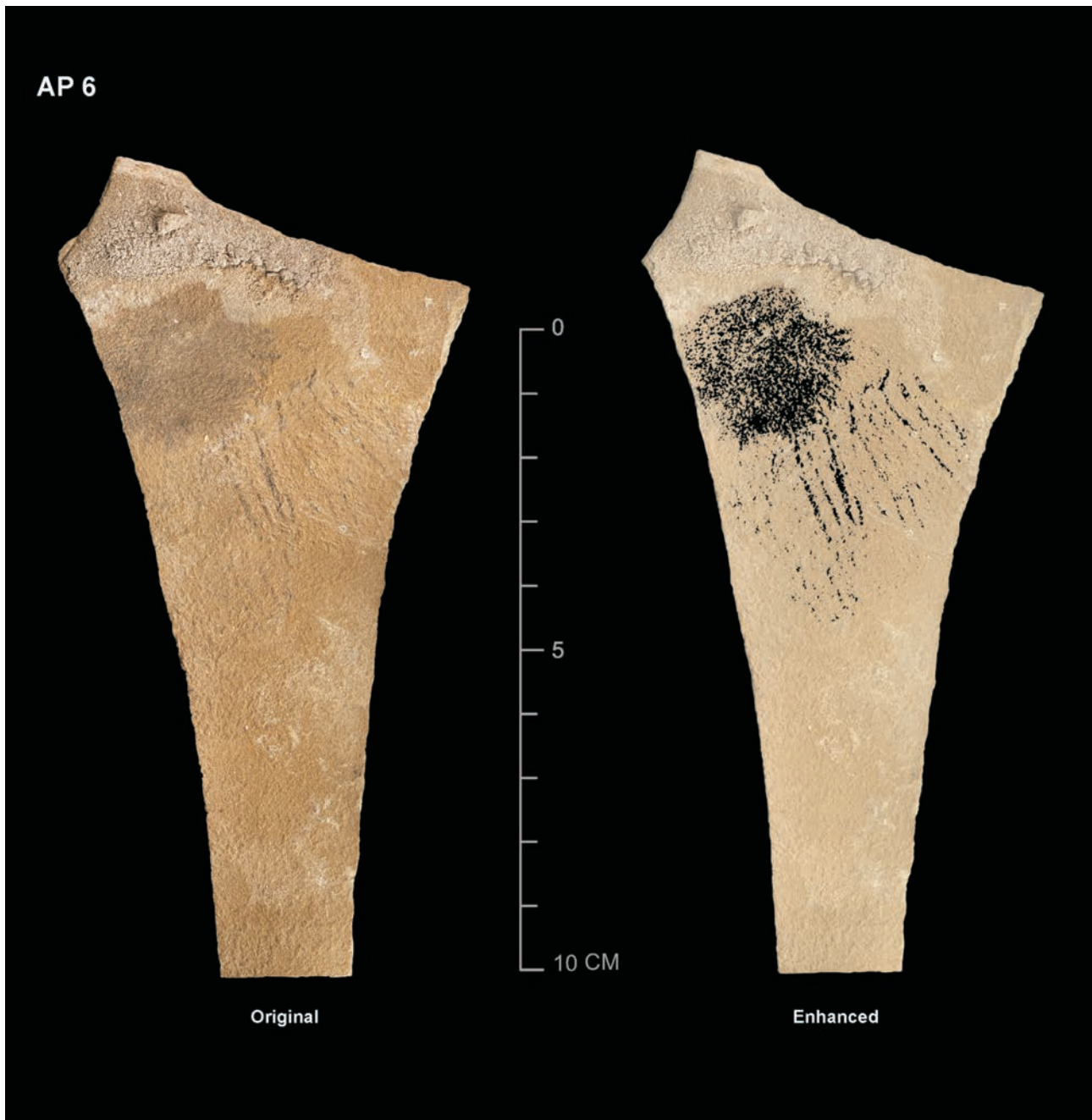


FIG. 6. AP6 is also a fragment of a formerly larger stone slab and contains a partial depiction that possibly represents 'zebra'.

the early race' (Solomon 1997). Reminiscent of the engraved zebra from Wonderwerk Cave (Thackeray *et al.* 1981), the percussion marks on AP1 might be interpreted in terms of 'sympathetic hunting magic', the belief in securing success in a prospective hunt or control over an animal through ritually 'wounding' an image (Thackeray 2005). As the primary interpretation of therianthropes relates to shamans and their experiences of altered states of consciousness (Lewis-Williams 2006), the presence of a therianthrope on AP1 and AP2 has been construed as reminiscent of the ability to induce, experience and communicate altered states of consciousness. It is probable that a degree of ideological and cosmological continuity exists between the MSA and the LSA (Lewis-Williams 1985). The analyses of artefacts produced by the early LSA inhabitants of Border Cave places the emergence of modern hunter-gatherer adaptation at 44 ka (d'Errico *et al.* 2012), supporting the notion that technological and cultural continuities exist between the MSA and the LSA.

CONCLUSION

The Apollo 11 plaques represent the earliest figurative art in Africa and correspond temporally with examples in Europe (Conard 2009; d'Errico *et al.* 2011; Roldán *et al.* 2012) and Australia (David *et al.* 2012). The seemingly concurrent appearance of these examples in Africa, Europe and Australia is thought provoking, perhaps signifying that the production of figurative *art mobilier* may not have a single geographic or cultural origin (d'Errico *et al.* 2012). Current evidence points to figurative art first appearing in various regions at different times, but the earliest known occurrence does not predate ~35 ka. Similarly, no unequivocal personal ornaments reliably dated to between 70 ka and 40 ka are known, and it is only after ~40 ka that they reappear in Africa and the Middle East, and for the first time in Europe, Siberia and Australia (Ambrose 1998; Rigaud *et al.* 2009).

Examples of early forms of art and personal ornamentation comprise abstract designs on ostrich eggshells and on red ochre

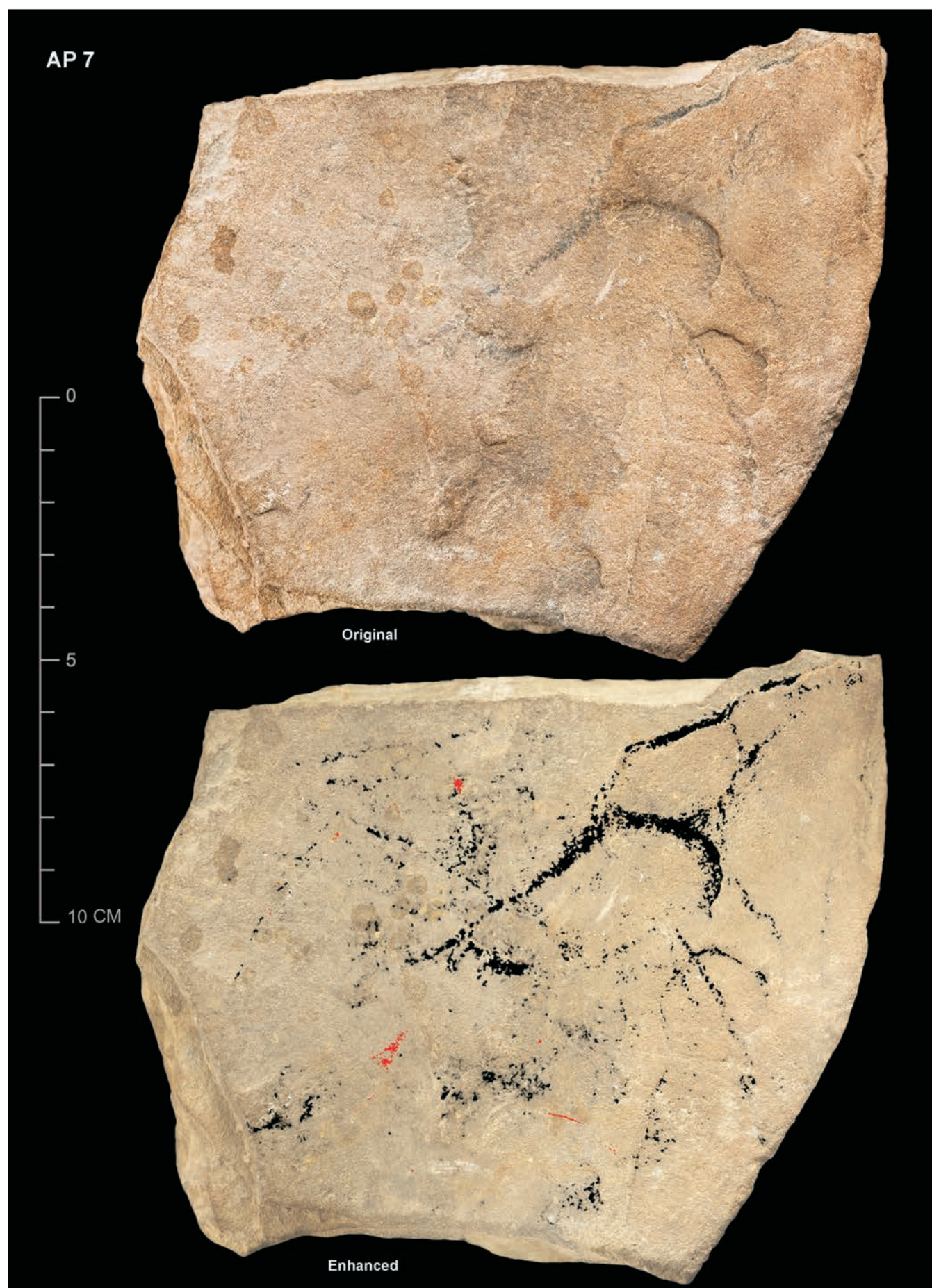


FIG. 7. AP7 does not depict a clearly discernible depiction, but traces of black, white, orange and red pigments are visible.

(Henshilwood *et al.* 2009, 2014; d'Errico *et al.* 2012; Texier *et al.* 2013), and secure evidence for marine shell beads (Henshilwood *et al.* 2004; Vanhaeren *et al.* 2006; d'Errico *et al.* 2008). As is the case for engraved objects and beads, we believe that the Apollo 11 *art mobilier* reinforces evidence for the external storage of symbols and concepts. External symbol systems comprise non-linguistic but retrievable traces of information, and these may have radically altered the capacity of human memory by making thoughts and memories durable and easily retrievable and communicable (Donald 1998; Hodgson 2006; Woelert 2012). Perhaps most importantly, the Apollo 11 plaques provide evidence for the development and social circulation of mnemotechnical devices. Such 'memory-enhancing' objects do not serve simply as passive external long-term storage mechanisms. Their role is dynamic in that they actively engage memory and facilitate interaction within the entire cognitive-cultural system (Donald 1998; Malafouris 2004). Contrasted with biological working memory, which is limited in terms of its capacity to store and recollect vast amounts of information (Wynn & Coolidge 2011), the externalisation of concepts, beliefs and memories by way of abstract and representational art is a characteristic feature of extended cognition (Mithen 2014).

Symbolic material culture is a rare but persistent feature during the MSA, although the role it played in mediating social relations is not clear. In the recent past, portable forms of art function in reciprocal exchange relationships (Wiessner 1983) and serve to promote social relations, especially within extensive networks that comprise isolated foraging groups (Perreault & Brantingham 2010). Social ties among foragers are frequently cemented by the exchange of valuable objects which may be of intrinsic value or tokens of relationships among individuals (Whallon 2006). Because relationship maintenance cannot rely on infrequent contact, cultural scaffolding of group cohesion, such as the Apollo 11 *art mobilier*, may have allowed relationships to be maintained *in absentia* (Pearce 2014). Whether this was the case for MSA and early LSA people remains speculative, but there is no reason to dismiss the notion that social unity was an important aspect of the lives of early hunter-gatherer groups and that material culture, including art, personal ornaments and other exchange items served to mediate social relations.

In addition to this report, analyses of the plaques and the pigments that compose the imagery by energy-dispersive X-ray fluorescence (ED-XRF), Raman spectroscopy and Fourier transform infrared spectroscopy (FT-IR) techniques are ongoing. Even without these data, the Apollo 11 plaques provide evidence for advancement in human technological and social ingenuity. Although it is known that MSA humans possessed the capacity to produce composite paints at 100 ka (Henshilwood *et al.* 2011), these plaques provide the very first indications, in Africa, of the use of such compounds to produce figurative depictions and also culturally dynamic external storage mechanisms and mnemotechnical devices.

ACKNOWLEDGEMENTS

We thank W. Erich Wendt for his time and Antje Otto for arranging our meeting with him. Permission to conduct this research was granted by the National Heritage Council of Namibia and the National Museum of Namibia. Esther Moombolah-Goagoses, Emma Imalwa and Fousy Kambombo are thanked for their support. R.E.R. acknowledges financial support from the Palaentological Scientific Trust (PAST). Financial support was provided to C.S.H. by a European Research Council Advanced Grant, TRACSYMBOLS No.

249587, awarded under the FP7 programme at the University of Bergen, Norway; by a National Research Foundation/Department of Science and Technology funded Chair at the University of the Witwatersrand, South Africa; by the AHKR Institute, University of Bergen and a National Geographic Expeditions Council grant, number EC0592-12.

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