

Fibre technology depicted in archaic art from south-eastern Kalimantan, Indonesian Borneo

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Rock art

Archaeo-ethnographic surveys within mountainous karstic landforms on the Mangkaihat peninsula of south-eastern Borneo (Figure 1) revealed hundreds of hand stencils and paintings covering the walls of a series of limestone caves. The caves are located in largely inaccessible primary rainforest more than 1000m asl. Th/U age estimates of the cave drapery covering the art ranged from 9800 to 27 300 BP whereas the conventional radiocarbon date was estimated between 9900 and 7610 BP providing a *terminus ante quem* date for the hand stencils (Plagnes *et al.* 2003). The scene shown in Figure 2 is from Ilas Kenceng, the least accessible cave in the complex.

The composition comprises a number of inter-related elements: hand stencils, an anthropomorphic figure, two zoomorphic figures and a complicated linear figure encircling them. The hand stencils were created by spraying paint (ochre), presumably from the mouth over a hand placed on the rock surface while the anthropomorphic and zoomorphic figures were painted directly onto the surface with a fingertip or stick of rattan crushed to make a brush (Luc-Henri Fage *pers. comm.*). The dark brown lines surrounding them appear to have been deliberately painted over the stencils, radiating out like the bones of five fingers.

Interpretation

The hand stencils have been interpreted as symbolic because of the unusual way in which they were depicted (Chazine in Fage *et al.* 2009). According to Luc-Henri Fage (*pers. comm.*), in Borneo hand stencils are rarely depicted individually but over-painted, dynamically. Hand stencils found elsewhere in island Southeast Asia (and Australia) have been interpreted as representational, individual markers (see Taçon 1992).

The meaning of the scene is less self-evident, requiring an understanding of the behavioural characteristics of the species depicted in the composition. The single anthropomorphic figure distinguished by outstretched arms is a jubilant hunter-gatherer. The first zoomorphic figure is a mature Sambar Deer (*Cervus unicolor*), distinguished by its large size and morphology. The smaller figure resembles an *orang-utan* (*Pongo pygmaeus*), a primate distinguished by its very short neck, fat belly and long limbs for brachiating (Definition of brachiating: to swing arm over arm from one hold to the next, as certain apes and monkeys do). In Borneo, the habitat of both species is the tropical rainforest, ranging from sea level to 3500m; the existence of both species on the island is confirmed archaeologically (see Medway 1977). The double lines framing the composition are critical to the interpretation of the entire scene. The French team interpret the lines encircling the figures as symbolic, an 'initiation track': "Le tracé initiatique relie au moins trois mains par un tracé double, sur lequel semblent se déplacer un anthropomorphe, les bras en l'air, et un zoomorphe (tortue?). Un cerf *Cervus* Sambar semble courir au centre..." (Chazine in Fage *et al.* 2009: 93). But the lines could also be representational, depicting cordage. Cordage is produced by twisting two or more fibre strands of limited length together in one direction between the hands (or thigh) to form a continuous structure. In order to create structures of sufficient length to entrap and contain the animals in the composition, multiple strands would have been necessary. Moreover, the 'hands' could be interpreted as the frayed ends of cordage which is also rolled into a large ball in the centre. Although contemporary Punan and Iban people use untwisted, tied strips of plant fibres for hunting in Borneo, ties are not depicted in this case. The prehistoric artist was perhaps moved to record a



Figure 1. Location map of the sites mentioned in the text.
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Figure 2. Charcoal scene, Gua Ilas Kenceng. © Luc-Henri Fage, kalimanthrope.com
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Extant fibre artefacts from Palaeolithic contexts are exceedingly rare and the few surviving fragments provide unique insights into fibre technology. The charred plant fibre fragments (2–3mm) from waterlogged sediments at Olaho II in Israel (19 300 BP) (Nadel *et al.* 1994), were interpreted as manmade cordage, elementary constructions, twisted in a Z direction with angles of twist from 20 to 80°. Twisted cordage found inside a lump of clay and calcite on the cave floor at Lascaux (17 000 BP) in France was interpreted as functioning as a guide for Palaeolithic groups moving in the dark from one gallery to another (Glory 1959).

Significantly, analysis of artefacts recovered from Guitarrero Cave, Peru, between 15 000 and 11 000 years before present (cal BP) revealed that hunter-gatherers made periodic forays from the lower altitudes to obtain suitable plant fibres for fibre artefacts from the mountains (Jolie *et al.* 2011). While it is impossible to determine the botanical species depicted in the Ilas Kenceng art, the Peruvian results suggest that such exploitation strategies may have provided the cultural logic behind the instructional diagram showing the function of prehistoric fibre artefacts in such inaccessible parts of Borneo.

In neighbouring Sarawak, excavations in Niah Cave (Barker in press) established the presence of hunter-gatherers in Borneo at least 46 000 years ago. Fibre artefacts were not found in the earliest burials at the mouth of the cave, exposed to rain-sprays and human traffic. Yet the basic economic activities of hunting, gathering and fishing to obtain the exigencies of daily life are so inextricably dependent on fibre based artefacts (nets, traps and basketry) that such items must have been manufactured. Indeed, the age profiles of the principal prey animal killed by the Pleistocene inhabitants of the Niah Great Cave, the Bearded Pig (*Sus barbatus*), suggest the use of traps and snares from the earliest phases of occupation, and Terminal Pleistocene and Early Holocene hunting technologies included arrows with bone and stingray spine points fixed to the shaft with resin and fibre binding (Barton *et al.* 2009).

Cordage fragments (Figure 3) were found within Neolithic burials (c. 2300 BP) in the drier sectors of Niah Cave more conducive to preservation. Two strands were Z twisted with a low angle of twist (60°). My analyses of those remains prompts me to hypothesize that the art at Ilas Kenceng is representational, depicting a hunting scene using a rope, rather than symbolic.

successful encounter pictorially because the Sambar Deer is noted for its ability to elude hunters (Mason n.d.).

Archaeological parallels

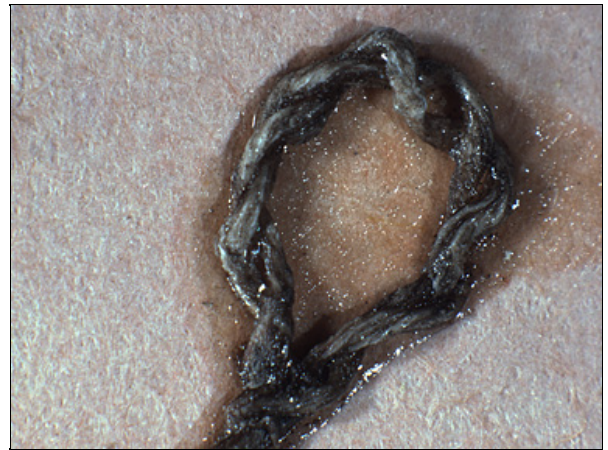


Figure 3. Neolithic cordage from Niah Cave; 14mm in length and 7mm in diameter (photograph: J. Cameron).
Click to enlarge.

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