Pundawar Manbur

The art sequence of a major Kwini rock art site in the Kimberley, northern Australia

Robert Gunn, Bruno David, Jean-Jacques Delannoy, Benjamin Smith, Damien Finch, Augustine Unghangho, Ian Waina, Balanggarra Aboriginal Corporation, Leigh Douglas, Pauline Heaney, Cecilia Myers, Sven Ouzman and Peter Veth

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Augustine Unghangho, Senior Traditional Owner of Pundawar Manbur, at the site in 2023.
(Photograph by Mark Jones, Copyright Balanggarra Aboriginal Corporation).

Ian Waina, Delegated Traditional Owner, who oversaw fieldwork at Pundawar Manbur.
Photograph courtesy of Sven Ouzman, 2017.

Archaeopress Publishing Ltd
13-14 Market Square
Bicester
Oxfordshire OX26 6AD
United Kingdom

www.archaeopress.com

ISBN 978-1-80583-147-1
ISBN 978-1-80583-148-8 (e-Pdf)

Cover: The *manbur* (kangaroo) motif from Pundawar Manbur. (Photograph by Robert Gunn).

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This project is supported with funding from Rock Art Australia

This book is available direct from Archaeopress or from our website www.archaeopress.com

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Acknowledgements

This project was undertaken in partnership between Augustine Unghangho (senior Kwini Traditional Owner of Pundawar Manbur), supported by Ian Waina and other Balanggarra Traditional Owners, the Balanggarra Aboriginal Corporation, the Kimberley Land Council and the non-Kwini researchers listed as co-authors. Thank you for permission and the privilege to work on your lands and to the Balanggarra Rangers for field support. Thank you also to those who provided invaluable field assistance: Sam Harper, Madeleine Kelly, William (Coco) Maraltadj, Michael Morlumbum, Ken Mulvaney, Joc Schmeichen, Rowan Waina, the staff of Theda Station, the Dunkeld Pastoral Co. Pty Ltd, Mike Donaldson for additional site information and references, and Nick Sundblom for piloting the helicopter.

The project was partially funded by the Kimberley Foundation Australia (now 'Rock Art Australia'), the Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage (Monash University Node) (CE170100015), and the Australian Research Council 'Kimberley Visions: Rock art styles of North Australia' Linkage project (LP150100490) administered by the University of Western Australia. Two Australian Research Council grants provided funding for the radiocarbon dates presented in Chapter 25: 'Dating the Aboriginal rock art of the Kimberley region, Western Australia' (LP130100501) and 'Dating the rock art sequence of the Kimberley, NW Australia' (LP170100155). Bruno David thanks Australian Research Council grant IL240100034, under whose auspices he completed parts of this monograph. The Western Australia Department of Planning, Lands and Heritage provided the Section 16 permit facilitating the collection and dating of samples and the Western Australia Department of Biodiversity, Conservation and Attractions provided permission to work in Drysdale River National Park and participated as project partners.

Full Open Access as well as print publications for key partners is supported by a grant from Rock Art Australia.

Final editing and formatting of the monograph was patiently undertaken by Kat Szabó.

Chapter 1
Introduction

PUNDAWAR MANBUR ROCK SHELTER

Pundawar Manbur is one of the largest painted rock shelters in the Drysdale River valley of the Kimberley, Western Australia. It contains more than 600 rock paintings, engravings and other rock markings and a complex series of overlapping styles of rock art. It is a cultural jewel of Kwini Country, within the lands of the Balanggarra Native Title determination. This monograph presents the first detailed recording and analysis of the site and its art.

Like many Kimberley rock art sites, Pundawar Manbur is not simply an occupation site as conventionally defined. While it has a generous overhang that provides shelter, the floor is covered with large slabs of outwardly slanting rock that fell from the ceiling as part of the shelter formation process. These slabs provide comfortable and shaded seating, but seem to make the shelter unsuitable as a sleeping place. Whether there are deep stratified occupational deposits underneath these slanting surface slabs is presently unknown, but it is clear that some kind of archaeological deposit is present beneath, as evident from the fine sediments on the floor in the narrow gap between the back wall and inner edges of the fallen slabs. As we explore in more detail in Chapter 4, for at least the past *c.* 12,000 years and possibly considerably longer – as determined by confirmed radiocarbon ages for some (yet not the oldest) of the rock art styles found at the site (Finch *et al.* 2020, 2021) – the basic material structure of the site, its overhang and boulder-strewn floor, seems not to have changed to any great extent over long periods of time.

While in an area considered extremely remote for researchers today, for local people in the past the site would have been relatively accessible, just a short scramble up a steep slope from an open valley. It is, and probably always was, clearly visible from the flat valley floor slightly below. Today, the valley contains a seasonal stream that fills during the wetter months and that feeds into Planigale Creek onto the Drysdale River some 4km downstream. Perhaps during wetter climatic phases, such as between c. 10,000–5000 years ago (e.g. Field *et al.* 2017), this stream would have flowed more frequently, but today the small valley probably remains much as it would have appeared for most or all of the period that people knew the rock shelter.

AN ARCHAEOLOGICAL VIEW

Pundawar Manbur is the type of site that rock art researchers love: a huge panorama of rock art spread out along a nice, clean vertical rock shelter wall. There are ample contemplation, photography and note-taking spaces directly in front of the panel, and these are nicely raised to allow close observation and meticulous recording of the art. There are many aspects of the rock art here that make it interesting for research: the condition of the art is broadly excellent and there is a large range of painting styles and techniques present, including styles from all the major identified periods within the Kimberley art sequence. There are many figures in superposition, and many also in carefully targeted patterns of superimposition (Gunn *et al.* 2022; see Chapter 3), making for a rich story of sequential engagements potentially going back many thousands of years. There is much figurative art, including images from the earliest purported phase of Kimberley art, the Irregular Infill Animal Period, but there are also stencils and other markings. There is evidence of additive reuse – some of the figures have been repainted. There is also fascinating evidence of subtractive reuse, some of the images showing signs of having been 'battered' and/or scratched, that is, directly engaged with subsequent to their painting. In Chapters 5 to 25, we explore these curious details. But, this monograph is not only about the rock art; it is a monograph about a special Kwini *place*.

For the majority of archaeologists who do not specialise in rock art, the site would be of limited interest. It would probably be deemed to have 'low archaeological potential' – meaning that it has minimal excavation potential – and they would stop, take some catchy photographs and then walk on by, looking for a site with greater excavation potential. Pundawar Manbur would risk consignment to a footnote in a field journal, or be just a pretty picture in a book about another site or on the regional archaeology. This other site, one with deep stratified occupational deposits, would then capture and arouse archaeological interests. This other site would receive months, if not years, of scientific attention and through subsequent publication would become famous and would dominate the archaeological narrative of this landscape. Our monograph is unusual in Australian archaeology because it does not focus on an excavated site; it focuses solely on Pundawar Manbur and gives it the attention it deserves. In this sense it is more akin to the long-standing monographic tradition of French rock art sites, with their detailed illustrated inventories and expositions of the structure of the art in their landscape settings (e.g. Lorblanchet 2010).

The Rock Art Monograph

In Europe, French and Spanish caves containing rock art have long been considered of sufficient significance to warrant their own dedicated monographs (e.g. Capitan *et al.* 1910, 1924; Cartailhac and Breuil 1906; Fritz *et al.* 2009; Lorblanchet 2001, along with many others). Australia has not had the same tradition, even though Australian rock art is no less significant, with the notable exception being with the major input of a French archaeologist (Coutts and Lorblanchet 1982). Detailed recordings of Australian First Peoples' (Aboriginal peoples and Torres Strait Islanders) rock art sites mostly exist as unpublished, and occasionally restricted, reports or theses (e.g. Gunn *et al.* 1997; McDonald 1997; Officer 1991; Rosenfeld 1990). While no recording can ever be 'complete' or fulfill the objectives of all later researchers (cf. Rosenfeld 1977), few published records of Australian rock art sites have attempted to present illustrations and analysis of every visible rock art image within a site. Most published records are in black and white, and they rarely identify all images and place them in a chronological sequence, as is presented here (e.g. Coutts and Lorblanchet 1982; Gunn 1981, 1983, 2006a; Macintosh 1951, 1952; McCarthy 1976, 1983; Morwood 1978; Rosenfeld and Smith 2002; Sim 1969). In recent years, with the greater use of colour illustrations, published recordings have become steadily more comprehensive (e.g. Brady 2010; Roberts *et al.* 2024). The recordings from individual sites, however, have generally been published within wider thematic analyses or regional studies, a major direction being the recording of rock art jointly with Aboriginal Traditional Owners (Cole *et al.* 2024; McDonald 2020; McDonald and Veth 2012; McDonald *et al.* 2018; Roberts *et al.* 2014; li-Yanyuwa [Yanyuwa Elders] *et al.* 2023). Unlike thematic recordings, site monographs focus on a singular place that was of specific value to people who used or continue to use the place. The only comparable Australian example to our archaeologically data-rich recording of Pundawar Manbur, is that of the Jawoyn site of Nawarla Gabarnmang in Arnhem Land, some 600km to the east (Gunn 2018). Utilising similar techniques to those employed here, the Nawarla Gabarnmang site monograph illustrated and analysed 1391 rock art motifs from multiple layers on 41 separate art panels within the shelter.

In Australia, the value of detailed recordings for site management, Aboriginal community archives and research, is generally acknowledged (McCarthy 1972; Edwards 1975; Flood *et al.* 1989; Gale and Jacobs 1987; Rosenfeld *et al.* 1984), but the fundamental rationale for recording is seldom identified (Pearson and Sullivan 1999; Rosenfeld 1977). According to the Victorian Government's First Peoples – State Relations (2024), the recording of rock art is important for three reasons:

1. Rock art is one of the few traces of pre-colonial Aboriginal society that does not directly relate to the society's economic needs.
2. It gives a valuable glimpse of the aesthetics, psychology and spirituality of the artists and their cultures.
3. Rock art places are particularly valuable as important links with the Old Ancestors and their ancestral practices for descendent communities today.

In some instances, at the instruction of communities or at the request of management authorities, site recordings remain intentionally unpublished in order to protect culturally restricted information or to conceal the site for conservation management reasons. For some, and possibly many sites, however, detailed recordings have been allowed to be published by local First Nations communities and their representative organisations. Such recordings can then make primary data available for future community, management and research purposes.

It is therefore curious that there are so few examples of rock art monographs in Australia and, conversely, so many in Europe. The difference is perhaps in the number of sites. Whereas around 400 caves contain rock art in Europe, more than 100,000 rock shelters and open sites contain rock art in Australia (Taçon 2016: 245). Clearly, it would not be feasible for each Australian rock art site to be given its own monograph in a timely manner, but we imagine a series where a representative sample of larger sites, or groups of sites, from all the major art regions in Australia are afforded this treatment. We hope to set such an agenda of detailed published rock art recordings of individual sites with Pundawar Manbur. The reason is that it is only with such detailed recordings that the specific key features of the rock art, and their patterns of superposition, that evidence-based spatial and chronological patterns can emerge using formal methods and, where cultural knowledge for individual sites and regions is at hand from First Nations communities, that such patterning in informed knowledge can also be worked out relative to image formal details (as the latter can be directly archaeologically investigated).

We follow the format of European rock art monographs, introducing the site and its context and then working systematically, left to right facing the wall, through the various panels of rock art images at the site. The chapters in Part A detail sections of the large, complex 'Art Panel A', while the chapters in Part B systematically consider the surrounding art, panel by panel. We describe and illustrate each, before considering the multiple layers or clusters of superpositions within Part C. We analyse and interpret each layer, so as to produce an overall stylistic sequence for the rock art at Pundawar Manbur. We use the latest approaches to panel recording and art sequencing and we report on a systematic attempt to place the stylistic sequence within a chronological framework using a combination of absolute and relative dating techniques. A major aim is to make this information available for research now and into the future, and to set the first detailed site-scale study to test the established and widely accepted relative chronology for Kimberley rock art (see Chapter 2).

Chapter 2
Rock Art of the Kimberley, Western Australia

The Kimberley region's rock art has been a focus of archaeological speculation since the 1980s, although it has featured in the popular and specialist literature since the nineteenth century (see below). It has long been clear that the way rock art has functioned in past and present Aboriginal societies needs to be positioned in broader contexts of local Aboriginal world views and practices, in particular how these practices operate amidst affective spirit-worlds. These dimensions of the lived world have been documented by social anthropologists and local members of Kimberley Aboriginal communities and are summarised further below. However, what has also been clear is that the spirits of places, the '*genii loci*' (see Chapter 26), were differently expressed in the art over time: across the Kimberley, the art styles changed over the millennia, and they did so in consistent ways from place to place. It is common in archaeology to investigate such stylistic changes through careful and systematic field-based documentation of relative sequences and absolute chronologies for the art, and this is usually done by publishing the evidence itself, e.g., the incidences of superposition at individual sites and groups of sites. Sometimes, one key site is so rich in rock art, and contains such a frequency and diversity of superpositions, that it forms a key to figuring out and communicating the patterns of superposition for an entire region. A classic Australian example is from Kakadu National Park, in Arnhem Land 600km northeast of the Kimberley region. In a short paper, Chippindale and Taçon (1993) published detailed recordings of two large art panels from two well-separated sites in order to more objectively assess the early Arnhem Land rock art sequence. They provided a cross-section of both shelters; incomplete, black and white illustrations of both the art panels; and a tabulation of all instances of superposition. From these data they constructed Harris Matrices to analyse the sequence of superpositions at these two sites (although the full matrices themselves were not presented), and found, while largely concurring with Chaloupka's (1977) broad regional chronological sequence and its updated version (Chaloupka 1993), that some rethinking was required for those figures lacking standard stylistic traits. But no such site has been published for the Kimberley. Indeed, and despite numerous publications on the region's relative rock art sequence(s) (see below), none has yet included the data itself, the evidence for the purported sequencing. Pundawar Manbur, the topic of this book, provides the quantity and quality of data for various purported sequences to be systematically assessed, at least in part if not in full.

KIMBERLEY ROCK ART SEQUENCES

A number of sequences for the rock art of the Kimberley region of northwestern Australia have been proposed, but all remain effectively untested, except in a general way, as all of the style phases need to be fully defined and the superposition sequence examined through saturation recording and analysis of a complete rock shelter assemblage, as done in this monograph (Donaldson 2012; Veth *et al*. 2018; Walsh 2000; Welch 1993a). Using the art-rich site of Pundawar Manbur in the northern Kimberley (Figures 2.1 and 2.2), the superposition of motifs was analysed in a first step to clarify and systematically publish the order of the rock art sequence for this part of the Kimberley. One particular concern was whether each purported style was sequential, or were some actually contemporaneous? As Walsh (2002: 52) noted:

> We need to be extremely cautious in making determinations of the sequential order of any Kimberley rock art based solely on the visual appearance of its preservation, contrast, colour or degree of exfoliation. [...] Those who offer 'all the answers' should be treated with caution.

Nevertheless, there is much we can do to carefully and rigorously build up our understandings of not only site and sub-regional Kimberley rock art sequences, but also of the potential interrelationships between them.

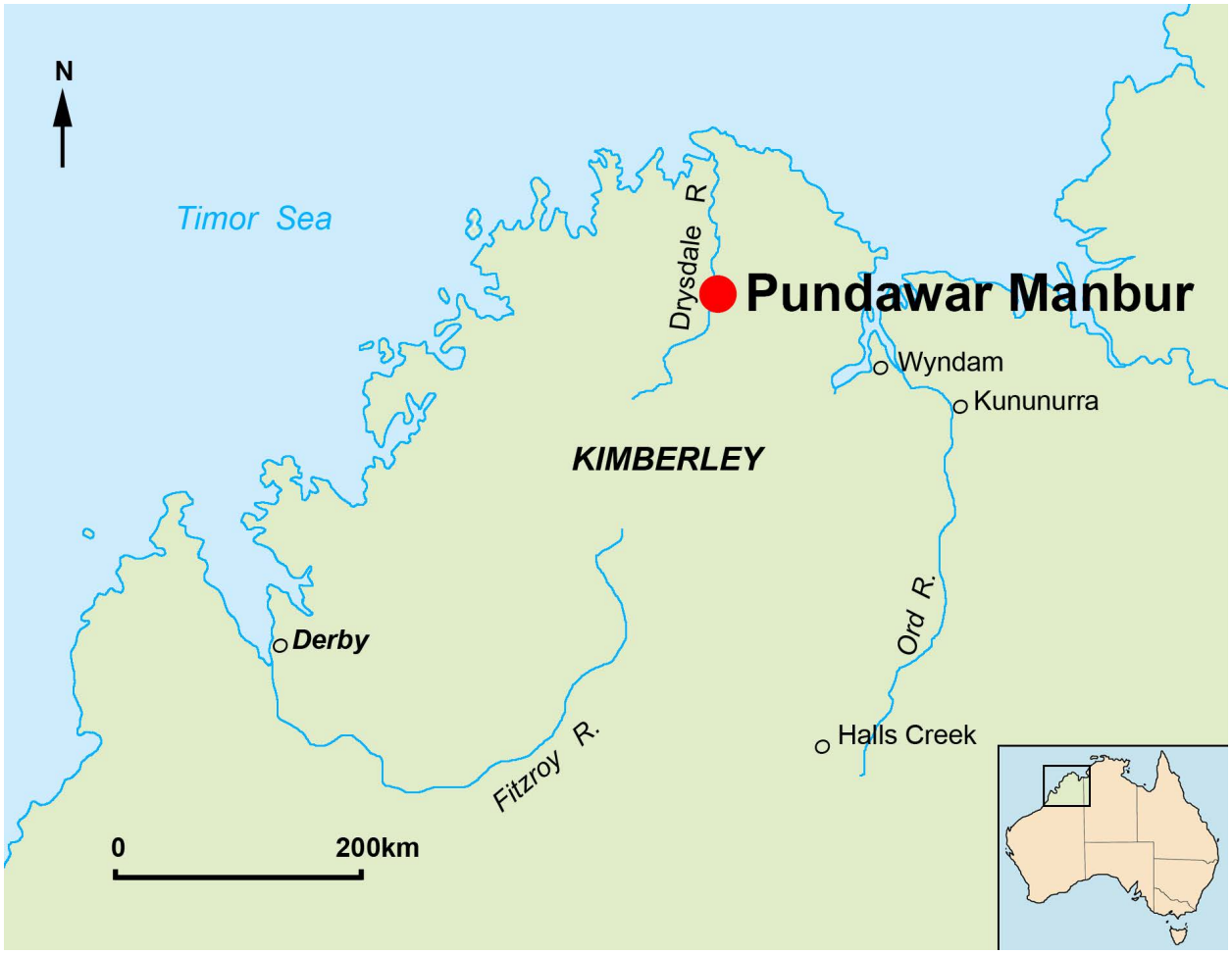


Figure 2.1. Location of Pundawar Manbur.

Figure 2.2. Pundawar Manbur rock shelter (A) and the smaller alcove with rock art next to it (B). (Note: the vegetation was burnt prior to our 2018 visit to record the art). (Photograph by Leigh Douglas).

The major aim of this book, then, is to present the evidence of the incidences and patterns of superposition at Pundawar Manbur by first presenting a detailed recording of the art at the site, along with all cases of superpositioning, to make our argument transparent and allow verification by other researchers. In doing so, we follow Delannoy *et al.* (2018: 834–835) in differentiating between 'superposition' and 'superimposition':

> 'Superposition' simply indicates that one thing lies on another, such as in the geological principle of the superposition of strata. 'Superimposition' is more, incorporating the idea that the overlying object reworks what was there beforehand; the preexisting item affects what happens next, modifying the original in the process (such as in the hydrological notion that a new drainage pattern superposes an earlier pattern). This notion of the influence of an object onto what comes later, of the affective nature of preexisting things, is fundamental to the ... study of a site and its rock art (because a major aim is to determine what happened through time ...).

Differentiating between superposition and superimposition in this way thus allows for the investigation of not only the sequence in which images were made, but also of how pre-existing images, through superimposition, continued to be engaged with through time. While we recognise that previous researchers often referred to superposition as 'superimposition', we use the terms as defined above throughout this book.

Pundawar Manbur was selected as it is one of the most extensively and intensively decorated rock art sites known from the upper reaches of the Drysdale River region of the northern Kimberley. The site is within the traditional lands of the Unghango family of the Kwini Aboriginal community, and within the Balanggarra Native Title determination. The name 'Pundawar' refers to the Kwini name for the local region of the site, while 'Manbur' is the language name for the large macropod that visually dominates the rock shelter (Figure 2.3). The site was recorded over a five day period between 2–23 June 2018, with the full approval and participation of Balanggarra members including Kwini Elder Augie Unghango, the site's senior custodian, and the Balanggarra Aboriginal Corporation.

Figure 2.3. The *manbur* (kangaroo) motif from Pundawar Manbur. (Photograph by Robert Gunn).

KIMBERLEY ROCK ART

Along with that of western Arnhem Land 600km to the northeast, whose rock art has some shared characteristics with that of the Kimberley (Chaloupka 1993; Lewis 1997), Kimberley rock art is widely recognised as having one of the longest temporal records of Aboriginal rock art in Australia. Its corpus contains a range of visually distinctive styles, some of which dates back to at least the past 18,000 years (Finch *et al.* 2021; Ross *et al.* 2016). The two most visually engaging and popularised art traditions, Wanjina and Gwion[1] (Figure 2.4), were first brought to the attention of the general public in the 1800s (Grey 1841 and Bradshaw 1892, respectively), and have been the subject of most subsequent rock art research across the region.

Following social anthropological attention on Aboriginal peoples of the Kimberley in the 1930s, a series of ethnographic studies also investigated aspects of the social significance of Wanjina images (e.g., Akerman 2016; Capell 1972; Crawford 1968; Elkin 1930; Love 1930; Schulz 1956; Worms 1955). These studies came to understand that the Wanjina images are the 'shades' of Lalai (Dreaming) Beings closely aligned with the summer monsoon rains. The Wanjina assisted in creating the land and gave particular responsibilities, Law and customs to the people. One of these were the rules by which Wanjina could be regularly painted and repainted on rock walls to ensure the success of the wet season rains and the renewal of the land, its fauna and flora. Each local clan thus has their own particular Wanjina and Wanjina art site(s), and

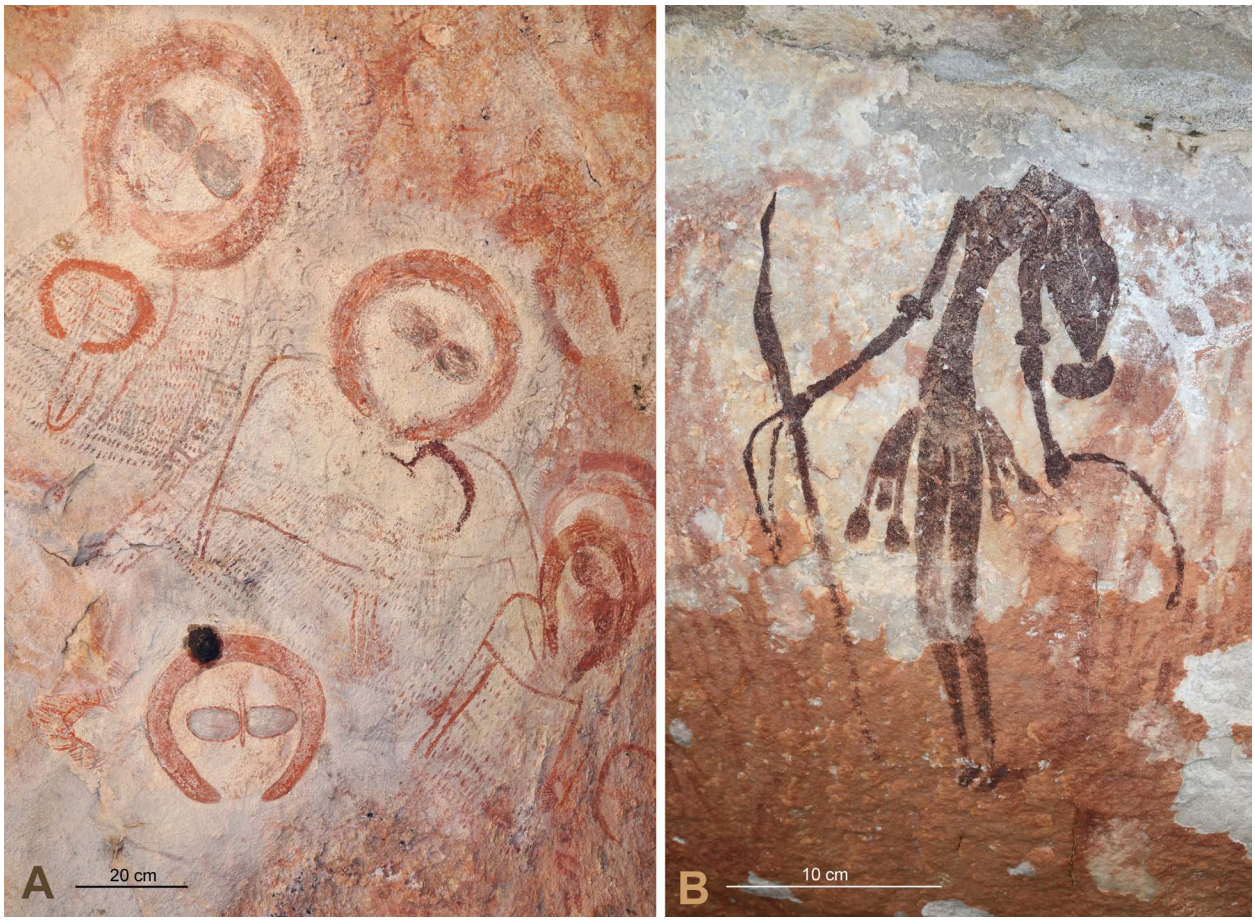


Figure 2.4. Contrasting art styles of the Kimberley region. A: Wanjina from Borologa 1, Kwini Country. B: Gwion from Kwini Country. (Photographs by Robert Gunn).

[1] 'Wanjina', 'Wandjina' and 'Wondjina' are alternative spellings of the same word, as are 'Gwion' and 'Kujon'. Different Aboriginal groups of the Kimberley have variably chosen one or other of these spellings, but no preference has been requested by Kwini peoples for our monograph. We use a standardised 'Wanjina' and 'Gwion' throughout the monograph.

the individuals who could, and can, repaint them. Wanjina occur throughout the Kimberley but with minor regional variations (Crawford 1977). The rock art of the 'Wanjina Period', a style that begins before the phase of classic Wanjina figures and that also includes animal motifs and other forms, appears to extend from at least *c.* 5000 years ago to very recent times (Ross *et al.* 2016; see below for further details). Although the Wanjina figures are arguably the most visually dominant in Kimberley rock art, their anthropomorphic forms seem to have evolved gradually, and through a range of styles, from the earlier Gwion Period art (Travis and Ross 2016).

The first substantial archaeological studies of Gwion art (then termed 'Bradshaw' figures) appeared in the early 1990s (Walsh 1994; Welch 1990, 1993b). In a later, more comprehensive study, Walsh (2000) claimed that, according to Aboriginal people he spoke with, the 'Bradshaw' figures held no significance for them. The high artistic quality of the figures and Walsh's (mis)understanding that Aboriginal peoples had no knowledge of Gwion led him to conclude and publicise that the Gwion images were painted by people unrelated to the current Aboriginal population (there have been many rebuttals since then; see e.g., Porr 2010). A similar conclusion had been proposed some 50 years earlier:

> There is no room for them in present-day aboriginal culture. Felt to be foreign and strange, they are given little attention by the aborigines [sic] who interpret them all and sundry as *d'imi*, bush spirits. (Schulz 1956:12).

Crawford was told that the Bradshaw figures (Gwion) were painted by a small bird and that they were of no significance to them. He concluded that the Gwion images 'were once of interest but that are now only relics from an earlier period' (1968: 86).

Quoting from his own and earlier sources, Walsh thus argued that the Gwion figures were unimportant to contemporary Kimberley culture (1994: 13; 2000: 286–230). Documenting a broad range of differences in Gwion styles and brushwork, Walsh then promoted his view that the Gwion were produced by non-Aboriginal people who had preceded the Aboriginal peoples of the Kimberley (e.g., Moran 2000). Such a view angered both local Aboriginal Traditional Owners and many academics alike, including the very people he had been working with (McNiven 2011).

In recent years, Aboriginal Elders have presented their own perspectives on the Kimberley's rock art – *their* rock art – countering Walsh's claims by elaborating on their traditional knowledge of the art and its cultural significance (e.g., Blundell and Woolagoodja 2005, 2012; Doring 2000; Mangolamara *et al.* 2018; Mowaljarlai and Malnic 1993; O'Connor *et al.* 2013; Oobagooma *et al.* 2016). These accounts show that the Gwion spirit-beings, and the Gwion paintings of which they are living expressions, are firmly embedded in local Aboriginal cosmologies and that they have been so for a long time. Local Aboriginal Elders have thus pointed out that, under the direction of the powerful Wanjina, Gwion are spirit-beings in the form of little birds like willy wagtails (*Rhipidura leucophrys*), with the Gwion painting themselves (metamorphosising) onto the rock. Some of these paintings show the Gwion undertaking ceremonies. The Gwion are alive, albeit in spirit-form, and affective, continuing to oversee that people do the right thing by the bush (Mangolamara *et al.* 2018: 149–151; see also Crawford 1968: 85; Walsh 1994: 13–14). Clearly, the Gwion have remained meaningful in local Aboriginal world views. What does not appear to have been appreciated by the non-Aboriginal community until recent decades is that the overwhelming significance of the powerful, clan-affiliated Wanjina to a large degree silenced the Gwion in cross-cultural (archaeological) discussions.

While many outside commentators had noted that the Gwion figures preceded the Wanjina figures either through observations of differences in preservation or through superposition (e.g., Crawford 1968: 87), the first formal presentation of an overall sequence for Kimberley rock art was not published until 1993 (Welch 1992, 1993a). Welch developed his system based on relative weathering, superposition, spatial arrangement, and content (such as depictions of extinct fauna in the early phases and the absence of boomerang stencils or paintings in the later phases, the latter matching an absence of boomerangs as

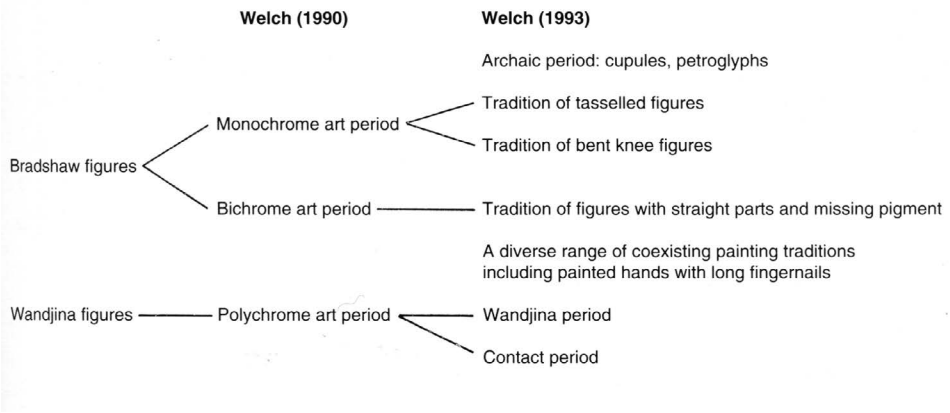


Figure 2.5. Welch's 1993 Kimberley rock art sequence (Welch 1993a: 15).

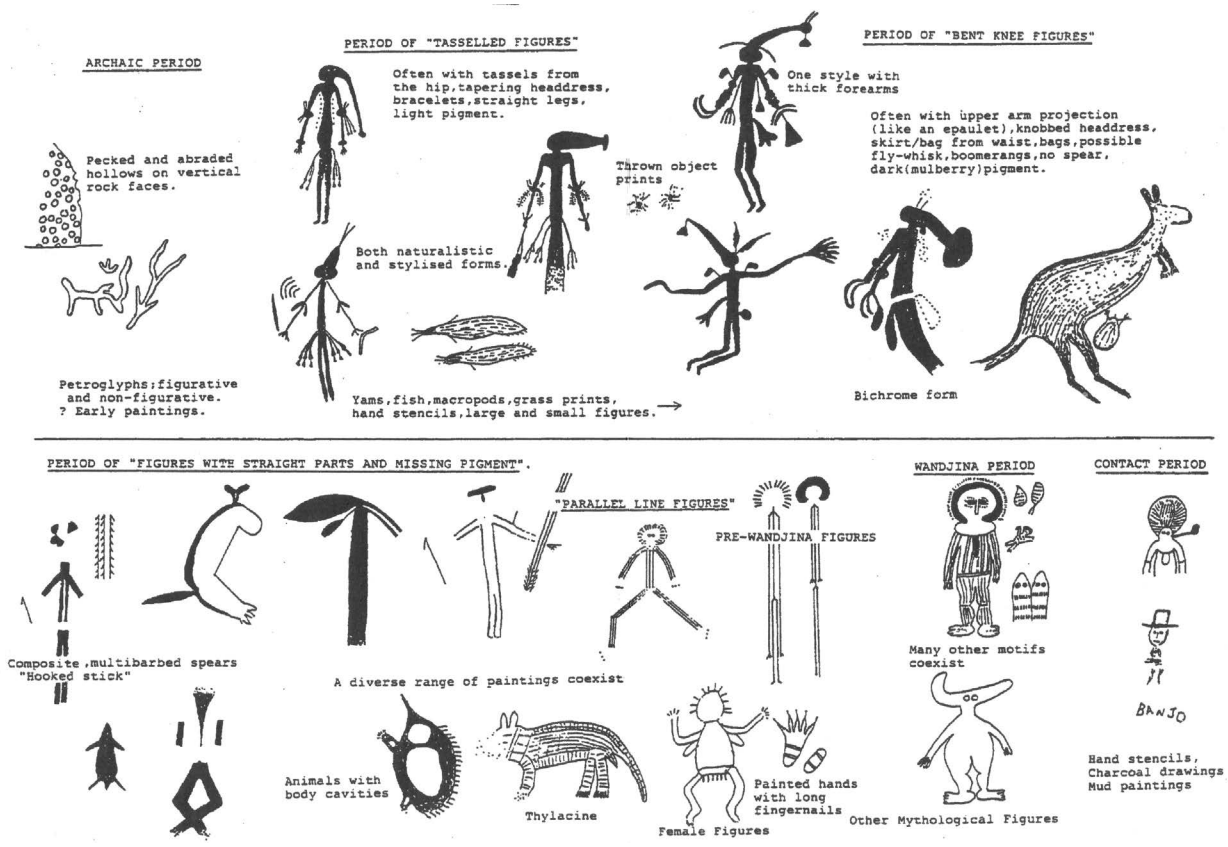


Figure 2.6. Welch's illustrated sheet of his initial Kimberley rock art sequence, which he distributed at the 1992 AURA conference. It was subsequently published in Welch (1993c: 100).

hunting weapons in the ethnography). His first published accounts came from the careful study of 508 sites 'scattered across the Kimberley' (Welch 1993a: 13). The 'content' criteria by which he categorised motifs are poorly defined and somewhat speculative, but the others are more transparent and open to re-evaluation. Unfortunately, Welch does not systematically present his primary data for his various criteria, but does so selectively as a means of differentiating between his Type I: Tassel figures (= the 'Ngunuru Gwion' of this monograph), and Type II: Bent-knee figures (= 'Yowna Gwion') (see also Welch 1993a, 1993c). The previous year, at the seminal 1992 Australian Rock Art Research Association (AURA) conference, Welch had distributed an illustrated version of his sequence, providing to the archaeological community the first indication of the broad range of Kimberley rock art styles (Figures 2.5 and 2.6). After

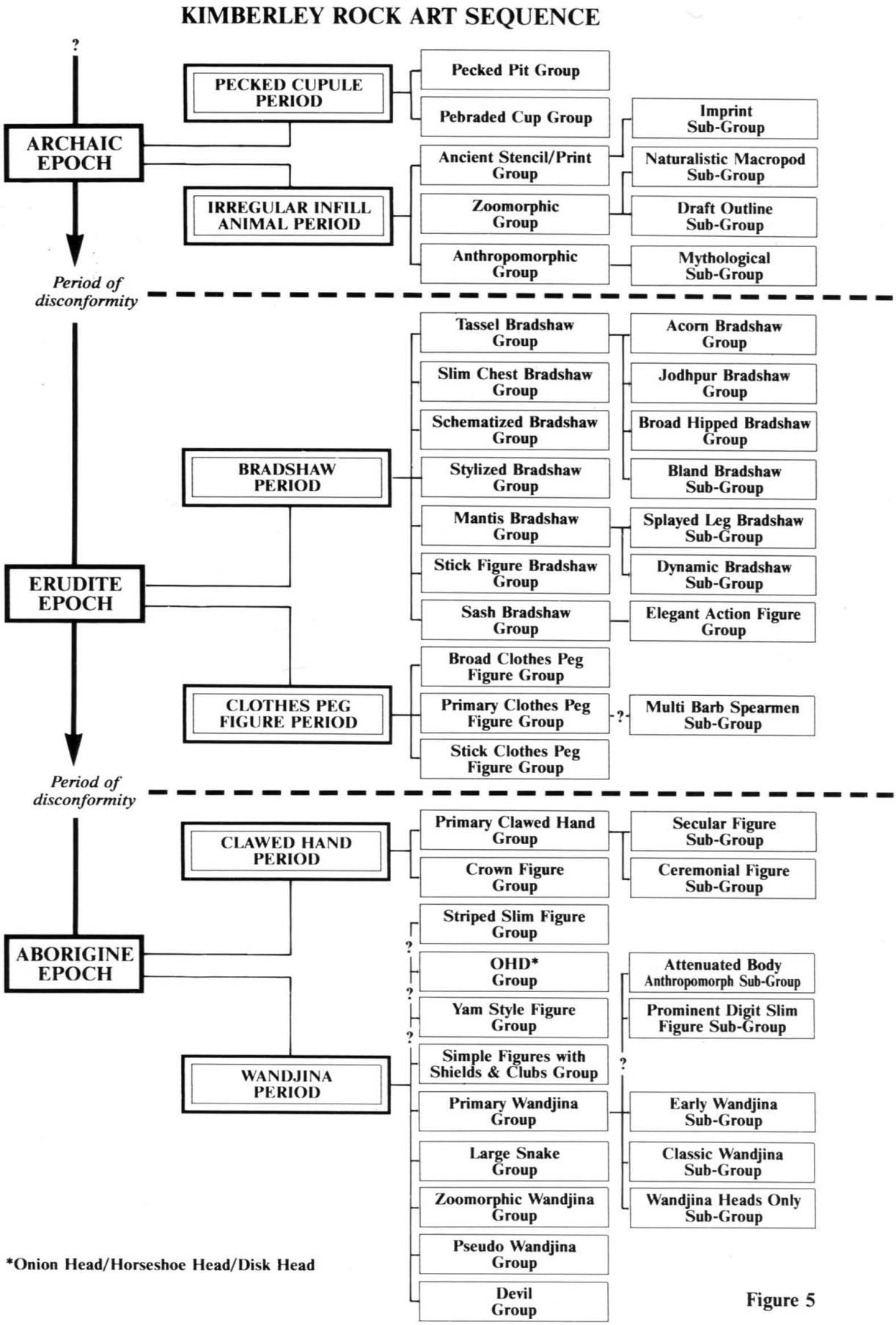


Figure 2.7. Walsh's initial Kimberley rock art sequence (Walsh 1994: 18).

Table 2.1. Published rock art sequences: nomenclature and characteristics. Compiled from Donaldson 2012; Veth *et al.* 2018; Welch 2000 and Welsh 1993c.

SEQUENCE	PERIOD TERMS				SUMMARY CHARACTERISTICS
	Welch 1993	Walsh 2000	Donaldson 2012	Veth *et al.* 2018	
Earliest Period	ARCHAIC	ARCHAIC		PECKED CUPULE	Pecked Cupules and Abraded Grooves
		IRREGULAR INFILL ANIMAL	IRREGULAR INFILL ANIMAL	IRREGULAR INFILL ANIMAL	Hand and boomerang stencils, hand prints, large outline fauna and anthropomorphs with stippled irregular infill
	TASSELLED FIGURE	BRADSHAW GROUP Tasselled-Bradshaw	NGUNURU GWION	GWION	Graceful, finely painted, slim bodied anthropomorphic figures with tassel ornamentations, elongated headdresses and sometimes holding boomerangs or wearing dillybags. Small animals associated
	BENT KNEE FIGURE	Sash-Bradshaw	YOWNA GWION		Elongated anthropomorphs with very tall headdresses, sash-like aprons and with knees flexed (dancing?)
	KIMBERLEY DYNAMIC	Elegant Action Figures	DYNAMIC GWION		Anthropomorphs with little body ornamentation and mostly depicted in active poses (i.e., running)
	STRAIGHT PART FIGURE	CLOTHES PEG FIGURE	DALAL GWION	STATIC POLYCHROME	Anthropomorphs in static frontal pose, arm outstretched and with conical headdress. Often bichrome (although the more fugitive colour may be lost). Barbed spears, hooked spear-throwers and boomerangs
	PAINTED HANDS	CLAWED HAND	PAINTED HANDS	PAINTED HANDS	Broad-brush outline representations with segmented or grid infill. Outlined hands with tapering fingers as individual representations
Most recent Periods	WANJINA	WANJINA	WANJINA	WANJINA	Monochrome and polychrome Wanjina (whole figure, head, or headdress alone)
	CONTACT		CONTACT		Human figures and items reflecting a European or Makassan origin

several re-assessments, Welch concluded by formulating a rock art sequence divided into six periods: Archaic Period, Bent Knee Figure Period, Straight Part Figure Period, Painted Hands Period, Wanjina Period and Contact Period (Welch 2016: 3).

Working in the field concurrently with, but separate from, David Welch, Grahame Walsh also developed an extensive sequence for Kimberley rock art. It was published in a well-illustrated book devoted to demonstrating the variety of Bradshaw (Gwion) art (Walsh 1994). Although the basic framework of the sequence is similar to Welch's, Walsh's sequence (Figure 2.7) is far more elaborate, with three 'Epochs' (the first occurring before, the last after his 'Bradshaw Epoch'), six 'Periods', 30 'Groups' and 15 'Sub-groups' (Walsh 1994: 18). Walsh's sequence was established through prolonged field observations, during which he created an unprecedented data-set and recorded superpositions from a large, but unspecified, number of sites, with the results field-checked and refined as further sites were progressively recorded (Walsh 1994: 17). While Walsh's site and art recordings were extensive, the base data and field observations for

defining the various styles that feature in his sequence have never been systematically published. A major problem with Walsh's sequence is, therefore, that it is extremely difficult to use by researchers who are new to the region, particularly when trying to assign non-diagnostic or unillustrated motifs into the sequence.

Subsequently, Walsh (2000), Rainsbury (2009), Donaldson (2012), Welch (2016), and Veth *et al.* (2018) each offered updated versions of the Walsh sequence, but all retain the same underlying format (Table 2.1). Of these, that in Walsh (2000) has become the more commonly referenced.

While Walsh's work has become a primary point of reference, there have been critiques of aspects of the details. For example, Welch (2004) and Rainsbury (2009: 131) noted problems with Walsh's definition of the 'style' of the Irregular Infill Animal Period (Walsh 2000: 114), as many of the large animals attributed to that style are not depicted with the distinguishing irregular-dashed infill that define the art of that period. However, this critique is unjustified, as Walsh chose the label 'Irregular Infill Animal Period' to describe the most distinctive, characteristic infill form for this style *phase*, while recognising also the existence of other infill conventions within that phase (Walsh 1994: 35–36; 2000: 126, 340–44). In a recent publication, Motta *et al.* (2021: 7) also illustrated animals in a range of different conventions that are purportedly from the Irregular Infill Animal Period, although the full range of styles that she and Walsh included in that phase has yet to be identified, described and justified.

Rainsbury (2009: 133) recorded 148 Kimberley rock art sites, 83 of which are near, and indeed include, Pundawar Manbur. Only one of these 83 sites contained motifs from the Painted Hands Period and, while hand stencils were found to occur throughout the sequence, he had difficulties assigning individual stencils to any particular art period. Rainsbury (2009: 133) further found an example of reverse superpositioning (that is, in contrary order to the expectation of the standard schema) of a Dynamic Gwion over a Dalal Gwion, and suggested that some of Walsh's sub-styles may have been contemporaneous rather than sequential.

Both Walsh (2000: 136, 142) and Welch (2016: 24–25, 32–33, 48) have provided lists of distinctive criteria for the various Gwion styles. Neither of these lists, however, characterise the full range of motif types from each style. Donaldson renamed several of the periods using local Aboriginal terms, although this introduced further complexity as it required using different terms for sites in the northern and western Kimberley due to local language differences (Donaldson 2012a, 2012b). That is, one particular style has multiple names under his schema, according to the diversity of Aboriginal peoples, cultures and languages in this broad region. In our study, we use Donaldson's terms for the northeast Kimberley, as this is the language area of Pundawar Manbur.

THE AGE OF THE KIMBERLEY ROCK ART PERIODS

A rock art *sequence* requires anchoring and correlation with absolute ages before it can become a dated chronological model. In the Kimberley, researchers have obtained a number of reliable ages that begin to give concrete time frames for parts of the art sequence. The best (most reliable and most numerous) results have come from the following:

- The Irregular Infill Animal Period, with the oldest dated painting dated to around 17,300 cal BP (Finch *et al.* 2021).
- The Gwion Period, which dating has shown peaked around 12,000 cal BP but may extend back much earlier to around *c.* 12 kya (Finch *et al.* 2020; Roberts *et al.* 2007).
- The Wanjina Period (including surviving beeswax art), whose oldest dated painting dates to ≥5100 ± 240 years ago (as determined by an optically stimulated luminescence age on a mud-wasp nest overlying a macropod painting in the style of the Wanjina Period), with the so-called 'Classic' Wanjina motifs with white background apparently restricted to the past 1000 years (Morwood *et al.* 2010; Ross *et al.* 2016).

O'Connor *et al.* (2013) suggested that, based on similarities with other parts of northern Australia, scratchings and charcoal drawings are all from the recent Contact Period (mid-1800s to 1968). The term 'Contact Period' was first used for this art to refer to motifs that depicted items of European origin (Welch 1992, 1993c). Scratched motifs in the eastern Kimberley were said by senior Traditional Owners to have been made by local Aboriginal stockmen employed on local cattle stations, using metal implements such as screwdrivers, fencing wire or knife blades (O'Connor *et al.* 2013: 548). In the Kimberley region, this 'Station Time' ran from the mid-1880s with the arrival of the first cattle drives from the east (Buchanan arriving in 1843, Durack in 1845, and Brockman in 1879) and concluded in 1968 with the awarding of equal pay to Aboriginal workers and the subsequent decline of the employment of Aboriginal station hands. The rock art of Station Time is therefore a sub-group of the Contact Period, which, in the Kimberley, falls within the timeframe of the broader and ongoing Wanjina Period (cf. Mowaljarlai and Malnic 1993).

Chapter 3
Pundawar Manbur: Background and Approach

Pundawar Manbur is a large rock shelter along a small tributary of the Drysdale River in the northern Kimberley (Figures 2.1. and 2.2). It is one of the most decorated rock shelters in the Drysdale River region, with 663 motifs identified and recorded in our study. The site sits near the crest of a rocky valley wall, some 200m from an ephemeral creek in an area of open Sandstone Woodlands with a spinifex and shrubby understorey (Dept of Environment and Energy n.d.). The dominant tree species is *Eucalyptus miniata* (Woollybutt) with a stand of *Livistona* sp. palms at the front of the shelter (Figure 3.1). The weather is monsoonal, with wet summers (November–April) and dry winters (May–October). The wet season has an average annual rainfall of around 1000mm (Water WA 2017) with temperatures ranging from the low 20s° to high 30s° Celsius. Dry season temperatures are generally from the mid-teens to the low 30s° Celsius, but brief extremes at either end of this range are not uncommon.

Pundawar Manbur is the most heavily decorated rock art site of several large rock shelters along an unnamed creek that joins Planigale Creek before it flows into the permanent waters of the Drysdale River, 4km to the east. Both creeks are seasonally well-watered and contain pools that last well into the dry season. Upstream from the shelter, the creek cuts its narrow bed through a broken rocky landscape that houses another 31 rock art sites and two stone arrangements. There are in total over 1600 motifs between all the sites, dispersed irregularly along the creek's length. Most of these art sites are small shelters with less than 30 motifs, and only three have more than 100 motifs.

The Pundawar Manbur shelter was reported by bushwalker Russell Willis in 2002, and photographs were subsequently published in a non-academic book on Kimberley rock art (Wilson 2006: 177–182, 188). It

Figure 3.1. Typical unburnt vegetation from the study area. (Photograph by Leigh Douglas).

was later independently located and more comprehensively published by Mike Donaldson (Donaldson 2012a: 204–213) and then David Welch (2015: 107–111, 20–291). This and other sites along Planigale Creek were examined by Rainsbury in 2007 as part of his PhD thesis that looked at regionality in northern Kimberley rock art (Rainsbury 2009: 378). It was subsequently briefly discussed by Motta *et al.* (2020) in a general study on recursivity in northern Kimberley rock art. Anna Motta also used the site as one of her case studies in her subsequent thesis (Motta 2022: 321–248). Her study focused on relationships between animals and anthropomorphs during the earliest periods in Kimberley rock art. The site is also listed in the Takarakka database as site PCSW-2235, and in that of the University of Western Australia's Centre for Rock Art Research and Management as site DRY-013. No previous detailed study has been undertaken of the site's art, although specialist researchers from the University of Melbourne have dated a fossil wasp nest overlying a boomerang stencil (motif #104; see below), demonstrating that the stencil must be older than 13,130–12,790 cal BP (95.4% confidence), with a Ngununu Gwion (#127) lying over another dated wasp nest being younger than 7180–6630 cal BP (Finch *et al.* 2021). A dated wasp nest under a Yowna Gwion painting (#189) indicates that the painting is younger than 12,970–12,510 cal BP (Finch *et al.* 2020: Supplementary Material). We will return to the absolute dating of Pundawar Manbur's rock art in Chapter 25.

THE ROCK SHELTER

The Pundawar Manbur shelter is 17m wide, ranges from 3m to 7m deep, and is 5.5m high at the dripline and 3m at the rear wall (Figures 3.2–3.7). The shelter faces northeast (50°) and overlooks the creek some 200m across a sandy flat (Figure 2.2). The rockfall slabs that cover the shelter floor have limited the formation of any substantial archaeological deposit above the slabs. Nevertheless, the presence of soft sediments under at least some of the slabs is confirmed in gaps between the slabs and the back wall. The shelter is accessed by a short climb up a steep talus.

Rock art is present along the shelter's vertical rear wall and horizontal ceiling, with 423 of the 663 motifs occurring on the rear wall (Figure 3.8). The entire space under the overhang is well lit throughout the

Figure 3.2. Pundawar Manbur from the southeast. (Photograph by Leigh Douglas).

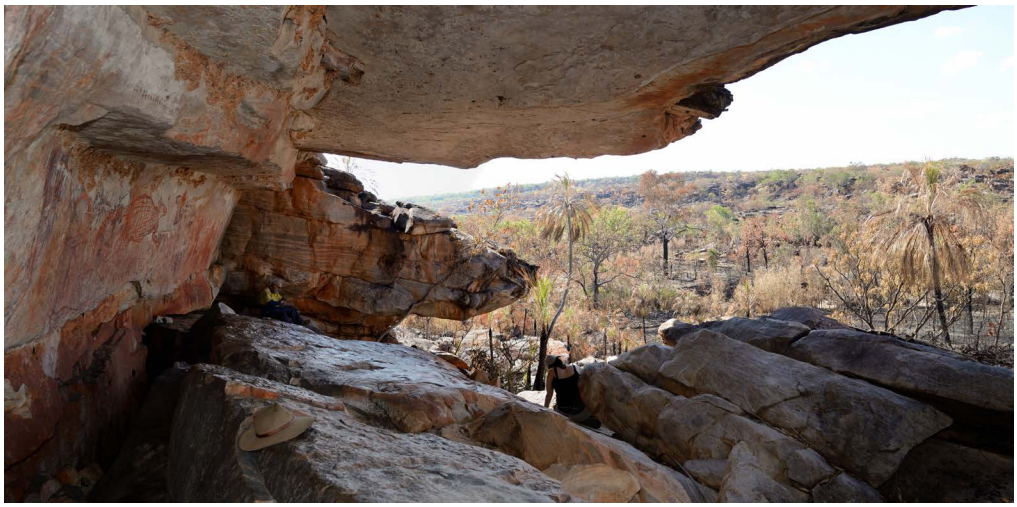


Figure 3.3. Shelter interior from the southeast. (Photograph by Robert Gunn).

Figure 3.4. Photo-mosaic of the sloping rock-slabs from the northwest. The top-left area was not captured as part of the panorama. (Photograph by Robert Gunn).

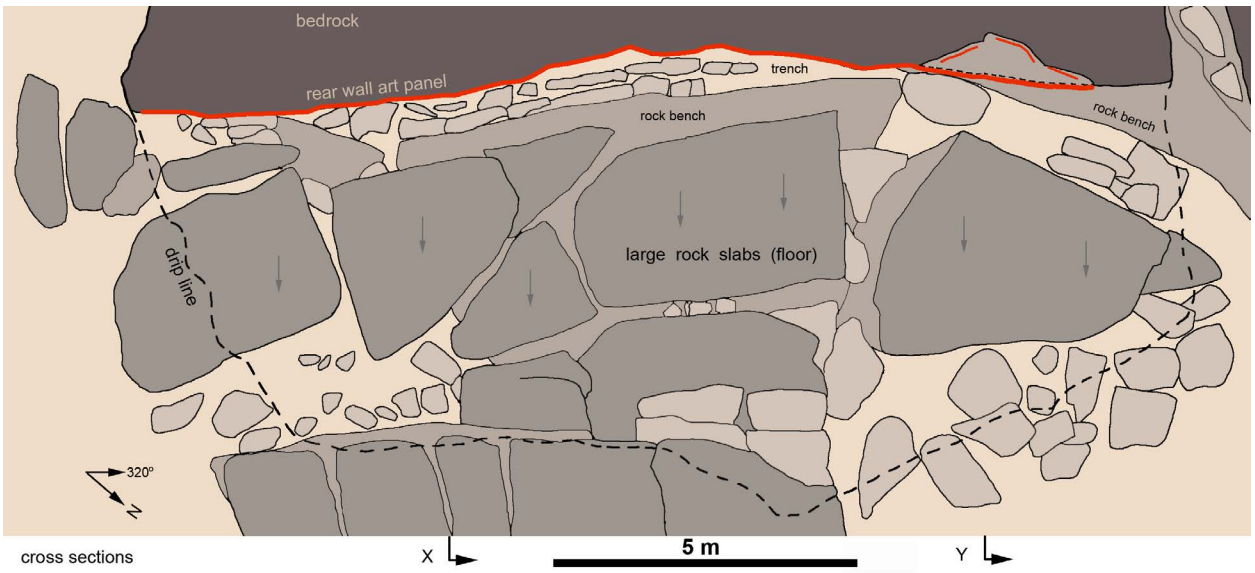


Figure 3.5. Plan of the Pundawar Manbur shelter.

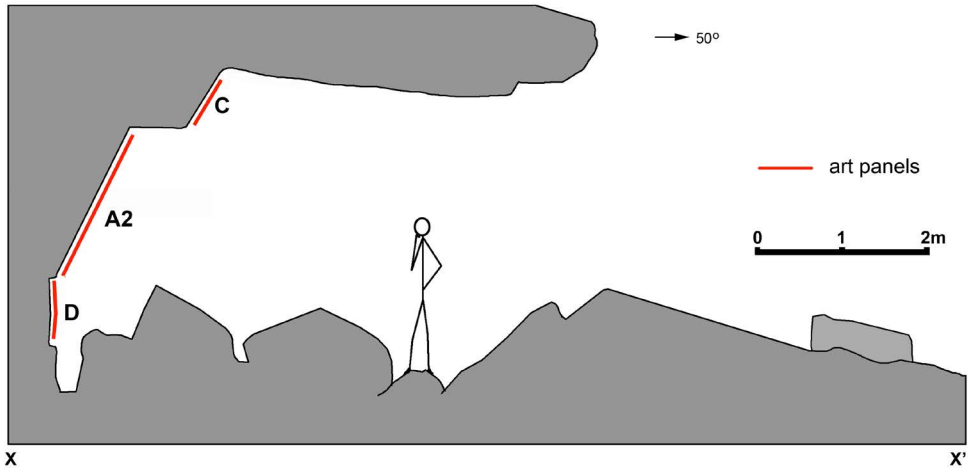


Figure 3.6. Shelter cross-section at X–X'.

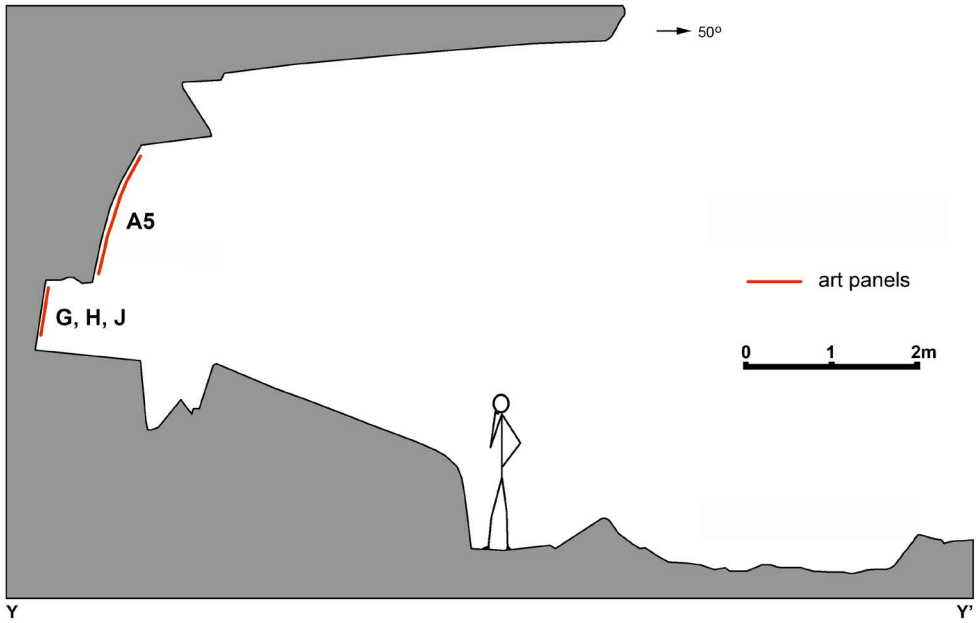


Figure 3.7. Shelter cross-section at Y–Y'.

day, including along the back wall. No semblance of art was found on the surfaces or sides of the slabs on the floor.

Pundawar Manbur and the other rock art sites along the Drysdale River are composed of hard and stable quarzitic-sandstone of the Warton Formation (Donaldson 2007), a 'massive to blocky, thin bedded, medium-grained quartz sandstone, commonly white to purple, and minor feldspathic sandstone; siltstone interbeds' (Geoscience Australia 2019). This very tough and resilient rock is not prone to cavernous weathering. Shelters form either through undercutting and collapse of the lower rock layers, or on the underside of tumbled floaters (Delannoy *et al.* 2020). From the even arrangement of the massive rockfall slabs that cover the shelter floor, it is evident that Pundawar Manbur has developed through undercutting and collapse (Figure 3.2). At Pundawar Manbur, the exposed rock is light grey in colour and variously discoloured in patches, from light red-brown to almost white. The light colour of the wall makes many of the paler or weathered rock art motifs very difficult to see with the naked eye. The texture of the rock is generally smooth and hard.

Figure 3.8. The highly decorated rear wall at Pundawar Manbur. (Photograph by Robert Gunn).

Pundawar Manbur is situated above and behind a broad enclosed sand-flat lying between the talus and the creek. A smaller shelter with a small amount of rock art lies adjacent to, but 5m lower down the talus from, the main shelter (Figure 2.2). This study is concerned only with the art in the Pundawar Manbur shelter itself.

METHODS

Prior to the fieldwork, the area around the site was burnt by the local Balanggarra Rangers as part of their seasonal cultural burning programme (Figure 2.2). This proved to be an advantage for our fieldwork, as ground vegetation and lower bushes were cleared for better visibility and access across the landscape.

Figure 3.9. Recording Pundawar Manbur. From top, Robert Gunn, William Maraltadj Jnr, Rowan Waina, Madeleine Kelly and Ken Mulvaney. (Photograph by Leigh Douglas, 2017).

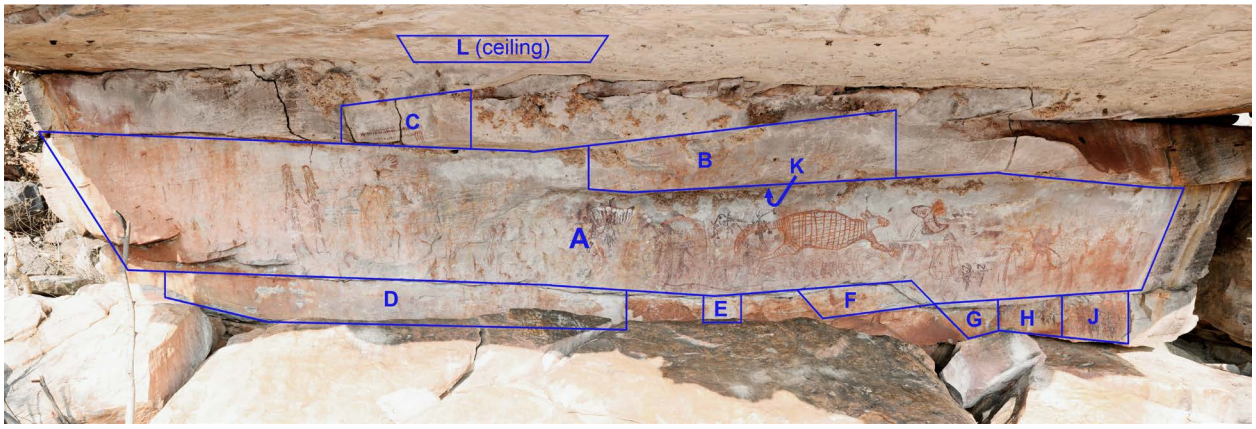


Figure 3.10. Position of the Art Panels within the shelter. (Note the off-vertical distortion of the far right edge of Art Panel A in this photograph). (Photograph by Robert Gunn).

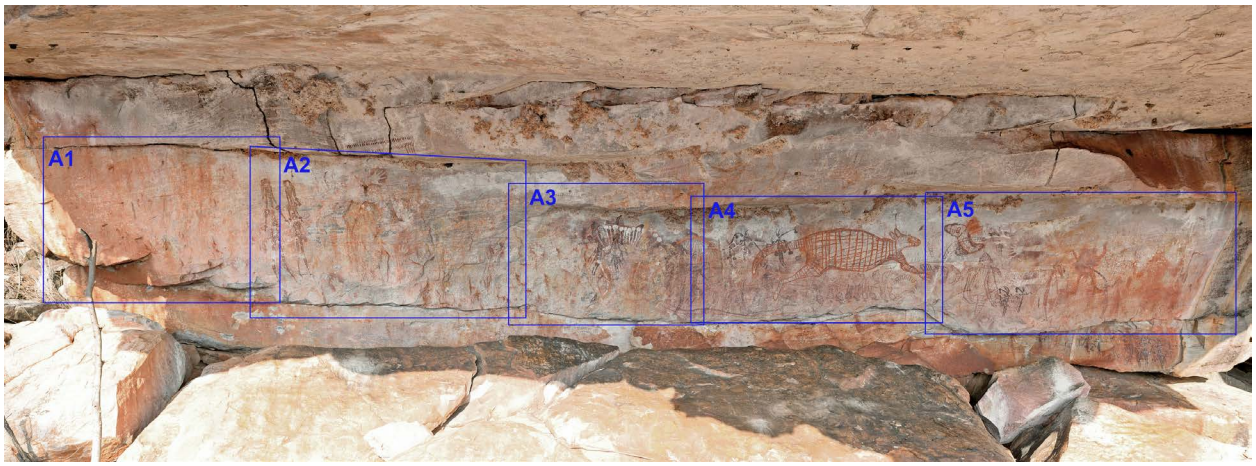


Figure 3.11. Art Panel A subdivisions (Art Panels A1–A5). (Photograph by Robert Gunn).

The site recording included mapping the shelter with tape and compass, freehand sketching of the art, extensive note-taking from intensive on-site observations, and a comprehensive photographic coverage of the shelter, its context and its art (Figure 3.9).

On the basis of natural breaks in the rock surface, the interior of the shelter was divided into nine Art Panels (Figure 3.10A–J. Note: there is no Art Panel I as these motifs were subsequently determined to belong to Art Panel J). The Art Panels were closely scrutinised and their art photographed for later examination using the DStretch image enhancement programme (Harman 2008) for clearer definition and interpretation. Our study, however, focuses mainly on the larger of the rear wall panels (Art Panel A), as this is the only panel with extensive superpositioning. As Art Panel A is a particularly large panel with a large number of motifs, it was subdivided into five sub-panels for convenience of analysis: Art Panels A1–A5 (Figure 3.11).

Each distinct figure or area of marking (pigment or other marking method) is termed a 'motif'. In the case of repainting or engagement through other means (such as the 'battering' of a pre-existing motif; see below), the later modification of the motif is termed an 'element' rather than a distinct motif in itself. That is, an element reworks a motif that is already there.

Terms such as 'Ngununu Gwion' refer to the motif *types* as previously defined by Welch (1993c) and Walsh (2000). In the following chapters, we number, describe and catalogue each of the site's motifs, elements

and 'fragments' (the latter being remnant parts of weathered or eroded motifs) (Appendix 1), following a variation of the recording system advocated by Maynard (1977). Motifs, elements and fragments are classified by:

- Technique (method of production), such as painting, drawing, spraying, printing, abrading, or a combination of these when more than one technique was applied. The 'battering' of pre-existing motifs principally involved pounding, but may also or alternatively involve pecking or scratching within a pounded area. Such battering appears to have been caused either with a sharp-edged hammerstone that progressively became blunted through use and hence left marks that began with peckings (causing pitting) but quickly became poundings (causing bruising). Alternatively, as the pounding stone became too battered (the impact point becoming too diffuse), it was replaced by a sharper stone that caused a change in the shape of the impact mark on the wall.

- Colour (a basic colour range was used during the field recording, except for reds which differentiated between very dark red, dark red, red and mulberry tones: Munsell or digital colour readings were not taken; our colour terms are general descriptions only). The red colours of a number of the larger motifs varied across the image (e.g., motif #120). This phenomenon had previously been highlighted for the Kimberley (e.g., Walsh 2000: 50–63; Welch 2016: 8). In our study, the predominant colour variation is used to characterise the motif, unless clearly differentiated multiple colours warrant multiple attributions.

- Form (the general design convention of a freehand motif, element and fragment). These can be stencilled, linear, outlined, solid, patterned infill or a combination there-of (e.g., solid+linear).

- Group (anthropomorph, zoomorph, plant form, non-figurative motif or fragment).

- Type (a label that describes the particular shape of the image; cf. Clegg 1991). While a motif type expresses the shape of an image, additional types – 'unidentified fauna', 'unidentified anthropomorph', 'unidentified object' and so forth – refer to whole motifs that appear to be figurative (e.g., flora, fauna, anthropomorph, item of material culture) but whose shape is not readily identifiable to a particular type of plant, animal, human-like being, or object. While the majority of anthropomorphs have yet to be classified into more specific types, the Ngunuru Gwion, Yowna Gwion and Dalal Gwion have each been formally distinguished into distinctive types, following published definitions (see Chapter 2). The terms for the decorative apparel worn or carried by the Gwion are largely taken from Walsh (2000: 93–96), except where a particular item of apparel does not feature in Walsh's definitions, in which case a new term has been used. Hand stencils that have their four fingers and thumb splayed are called standard hand stencils; all others are referred to as variant hand stencils. Examples of variant hand stencils from elsewhere in Australia include Chaloupka's '3MF' hand stencils (1993: 232), and varied hand patterns that may represent hand signals (Walsh 1979, 1985; Wright 1985).

- Size (maximum length, regardless of orientation). Among hand stencils, the middle finger length (mf) or knuckle width (kn, representing the palm length across the base of the four fingers) were measured where possible (see Gunn 2006b).

With the useful assistance (for cross-checking and clarification of characteristics) of sketches of the art done in the field, back in the laboratory each art panel was subsequently digitally 'traced' from photographs and DStretch enhancements on a Wacom tablet, using the 'Layer' function in Photoshop to separate and illustrate the superpositions (Gunn *et al.* 2010; Harman 2015). Due to the range of variation in the hues and tones of many of the motifs (see above), a number of different DStretch filters were usually required for the graphic interpretation of each motif. To ensure that no motif was overlooked, adjacent panels were designed to overlap, with the attributes of the recurrent motifs included only on the first panel depicted. The overlapping area was thus also excluded from one of the overlapping panels when it was measured.

As mentioned above, 'superposition' is taken as the overlying or overlapping of one part of a motif with another, while 'superimposition' incorporates clear re-use of a pre-existing image through remarking, retouching, amendment and alteration (Brady *et al.* 2021; Gunn 2019; Sale 1995). The superposition sequence of each panel was constructed through Harris Matrices (Harris and Gunn 2018). In many cases, the outlying motifs that do not occur in superposition have been assigned to existing layers on the basis of similar artistic attributes (style, colour/colour variation, preservation, or consistent finer 'Morellian' features where different artists paint incidental details in their own particular manner; cf. Gunn and Lowish 2017). This 'interpreted' Harris Matrix provides an overall rock art sequence for the panel in question. For convenience, each Harris Matrix layer was subsequently referred to by the dominant motif theme(s) represented, such as 'the hand stencil layer', 'the Gwion Ngunuru layer', 'the scratchings layer' and so forth, but these are just short-hand labels to facilitate discussion, and the nuances of the layers and sequences qualify their use. In Chapter 25, the sequences from the five panels were then aligned using a fence graph to establish the overall art sequence for Art Panel A. The layers were equated horizontally again, on the basis of common attributes, as long as they did not contradict the structure of the Harris Matrix. Further details of these methods are given in the Introduction to Part C.

Chapter 4
Geological and Geomorphological Setting, from the Plateau to the Site

Pundawar Manbur's numerous and diverse motifs render it of particular interest to understanding motif sequences in the Kimberley, but so, too, is its geomorphological development of interest, both to understand the relative antiquity of the art, and in its own right.

As indicated by their many instances of superpositioning—each documented in later chapters of this monograph—Pundawar Manbur's motifs were not all created at once. Rather, they were gradually added to over time. The rock surfaces with the rock art have themselves a dynamic history: they, too, developed over time. Understanding this articulating history of motifs and rock walls requires a combined archaeological and geomorphological approach, which we explore below and refer to as 'archaeomorphology' (for explorations of the concept of 'archaeomorphology', see e.g., Delannoy *et al.* 2013, 2018). It is important to understand these developments at nested spatial scales, for the causes of formation, and the relative and absolute chronology of the rock walls, overhangs, boulders and broader landscape are often interrelated. Here we thus take a geomorphological approach to understanding the substrate and its dynamics in contributing to the formation of Pundawar Manbur's rock art panels.

GEOLOGICAL SETTING

Pundawar Manbur is located on the southern rim of a small valley of an unnamed creek that runs into Planigale Creek, a tributary of the Drysdale River (Figure 4.1). The Drysdale River is bordered along its western bank by a low plateau of quartzite and highly indurated sandstone (Warton Sandstone of the Paleoproterozoic Kimberley Group). This plateau is broken by a dense network of fractures oriented along two axes, WNW–ESE and WSW–ENE. Apart from the major rivers, such as the Drysdale River and its main tributaries whose flows cut through the landscape more freely, the hydrographic network largely maps onto this geological fracture pattern. Given the hardness of the plateau's quartzite bedrock and the low hydraulic gradient of the terrain—there are, at most, 60m vertically between the top of the plateau and the thalweg (lowest topographic level in a valley) of the Drysdale River—the flow of water follows the fractures as weak points in the geological structure. This explains the exceptionally rectilinear nature of the plateau's valleys. This is the case for Pundawar Manbur, whose valley is directly modelled on one such fracture (Figure 4.2).

Geomorphological evolution of Pundawar Manbur's slope

The relief on either side of the Drysdale River is highly constrained by geology. This is largely consistent with the region's landforms and their geological structure: the elevated plateaux correspond with the uplifted areas, and the depressions with the collapsed troughs. Such conformity between topography and geology is particularly striking in satellite imagery, where the whole network of fractures is clearly visible, as are the changes in the facies of the rock outcrops (Figure 4.3).

This geological influence on the region's landforms applies also to Pundawar Manbur and its immediate surroundings. The fracturing of the bedrock largely controls the morphogenic evolution of the landscape's relief. Distinctive landforms developed across the landscape as a result of differential rates of erosion and mechanical decompression (proximity of the bedrock to the surface topography) (Figure 4.4). On the plateau, landforms have ruiniform reliefs including isolated pinnacles, while on the slopes a chaos of collapsed boulders predominates. Pundawar Manbur's slope (on the southern bank of the valley) is typical of other quartzite escarpments across the Kimberley (Figures 4.5 and 4.6). Its valley maps onto a WNW–ESE faultline. The mechanical relaxation of the escarpment at the top of the valley slope is amplified by the combined effects of an eroding underlying void (horizontal overhang) and vertical fractures. This

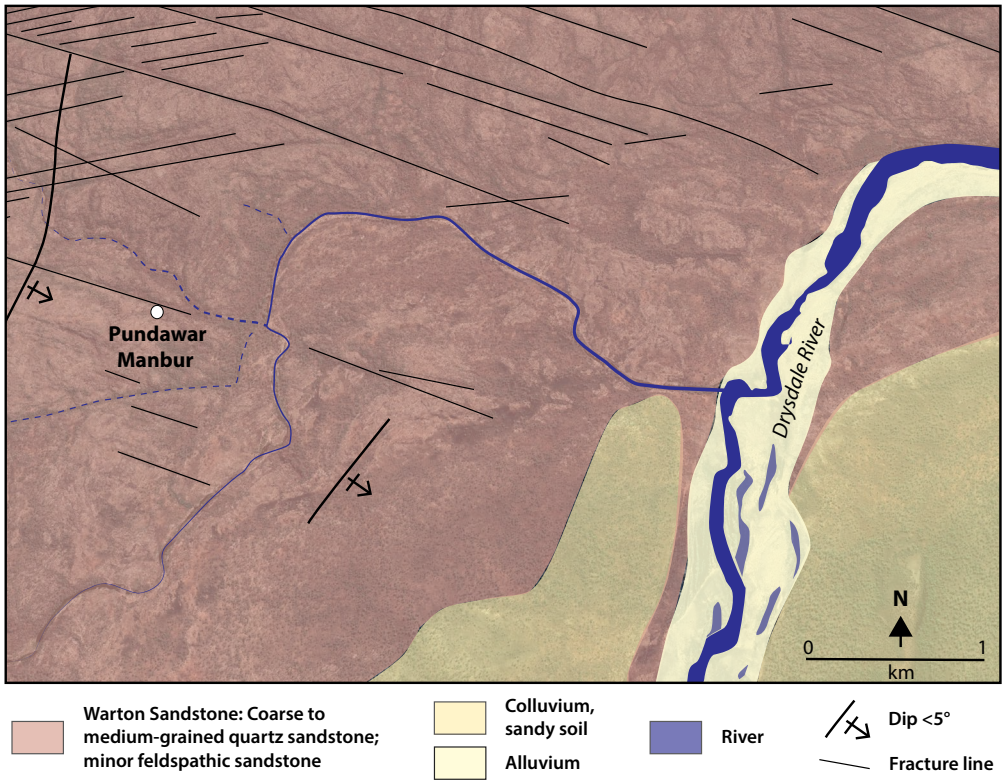


Figure 4.1. Pundawar Manbur's geological context. Infographic: Jean-Jacques Delannoy.

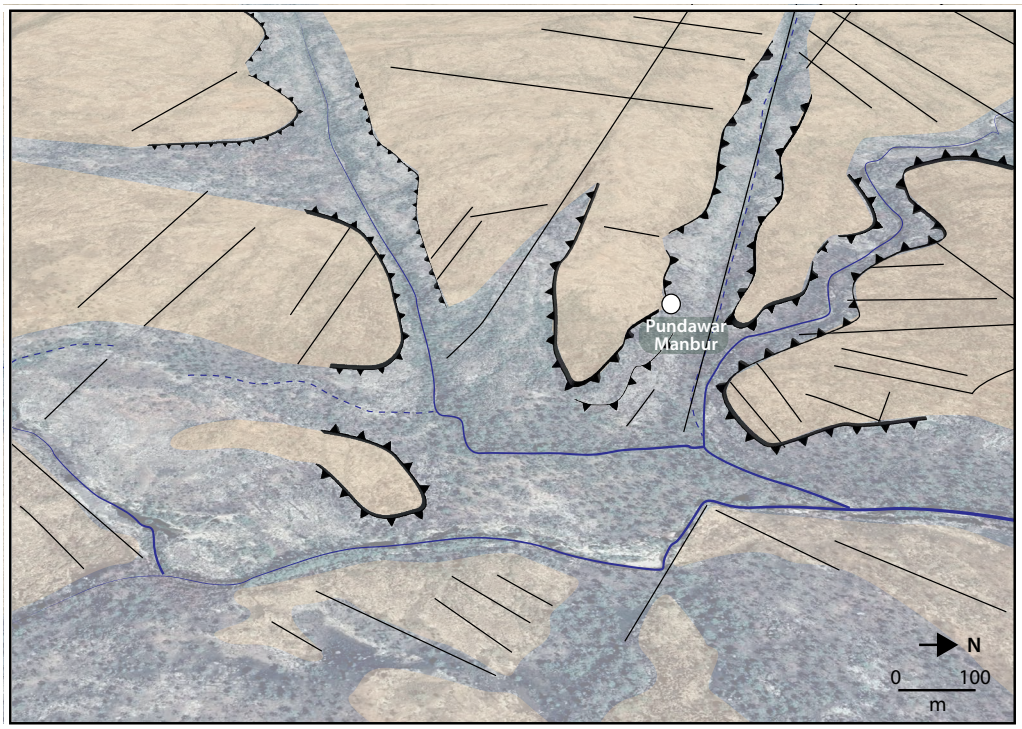


Figure 4.2. Oblique view of Pundawar Manbur's landscape setting. The plateau, which developed at an altitude of 160–200m above sea level, is criss-crossed by a dense network of fractures (here shown by the straight black lines). These fractures guide water-flows, and the intermittent stream that passes below Pundawar Manbur has low hydrological and erosional energy. This is a key reason why it continues to follow the WNW–ESE fracture. Infographic by Jean-Jacques Delannoy.

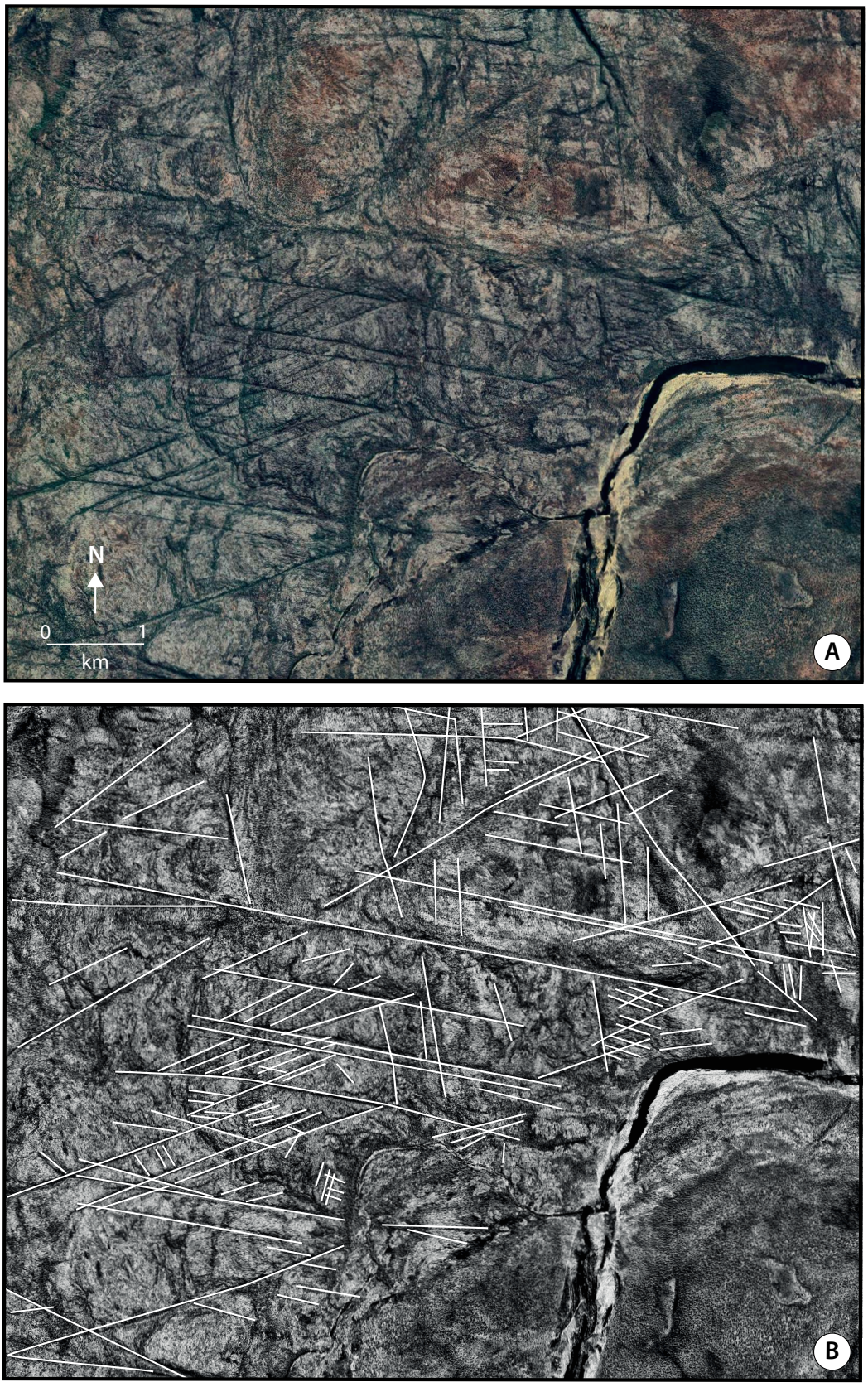


Figure 4.3. Satellite image of the quartzite plateau and Drysdale River that runs along its edge. CNES–Airbus 2023 satellite image of the network of fractures in the quartzite bedrock. The fracturing is particularly noticeable where the quartzite outcrops. The hydrographic network is also highly dependent on the structural geology. Infographic by Jean-Jacques Delannoy, from Google Earth base photo.

combined effect resulted in the fragmentation of the escarpment bedrock and movement of its separated blocks down the slope (Figure 4.4). This fragmentation took several forms: upslope, sections of bedrock along the edge of the plateau became detached as they slowly tilted through gravity, gradually slipping down the slope (Genuite *et al.* 2021), and, in more dramatic cases, massive boulders collapsed en-masse along with a chaos of blocks below them. Irrespective of the type of fragmentation, such processes could only have occurred after the valley had already formed. Along the slopes of the valley that contains Pundawar Manbur, both forms of fragmentation have taken place (Figures 4.5 and 4.6).

Morphogenic evolution of the site of Pundawar Manbur

Most of Pundawar Manbur's topography developed through the gravitational processes discussed above, in particular the downslope slide of a large rock mass that became detached from the upper part of the slope. This rock mass separated into three sections as it slid down the slope (blocks 'A1', 'A2' and 'A3' in Figure 4.6). The slope which they slid down directly influenced the ensuing dip of their floors and overhangs. During their descent, and despite following slightly different paths, blocks A1 and A2 remained in contact. A2 descended further down the slope, its progress eventually stopped by outcropping bedrock, and A1 came to rest against A2 (Figure 4.8). The telescoping of A1 against A2 caused mechanical stresses along the whole lower edge of A1; the collapsed blocks along the slope below the rock art site are a result of this process (Figures 4.8 and 4.9). The general layout of the boulder-field was thus set in place.

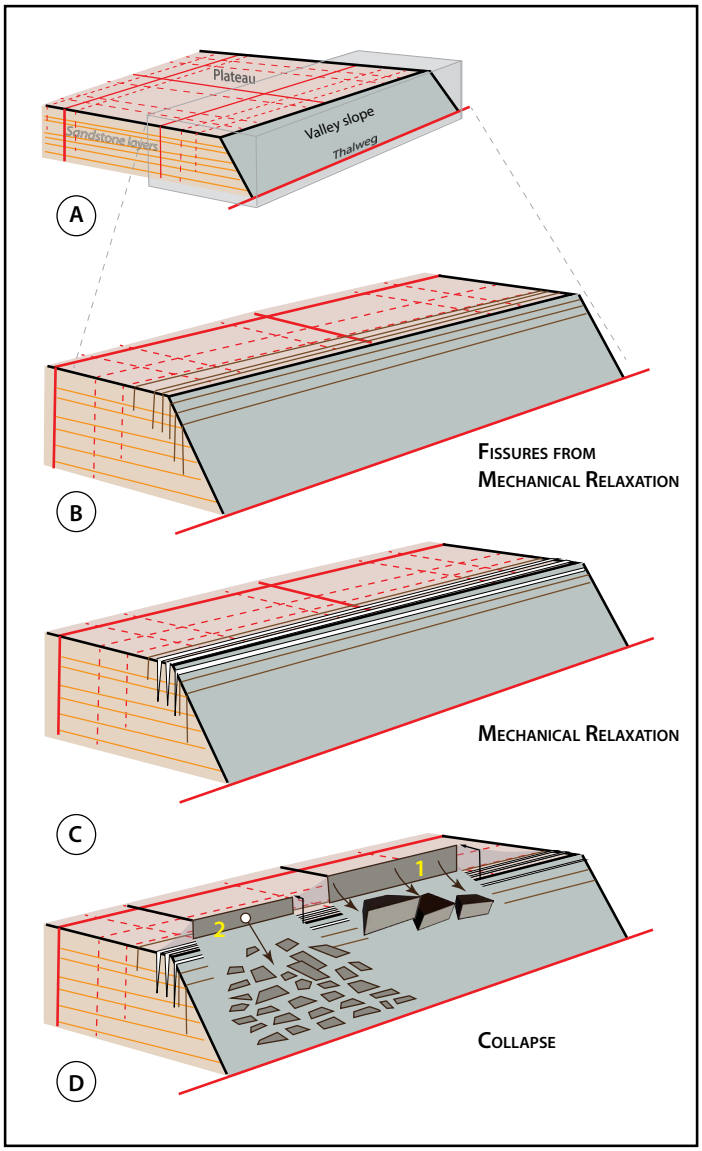


Figure 4.4. Evolution of the study region's valley slopes incised in quartzite bedrock. A: Block diagram representing Pundawar Manbur's geological environment. The network of fractures can be seen along two orthoclinal (i.e., perpendicular) directions (in red). Watercourses cut into the geological substratum at points of weakness. B: Zoom-in onto the side of the valley. After the valley was established, mechanical relaxation of the bedrock surface took place parallel to the slope and edge of the plateau. Mechanical stress-relief cracks developed along the edge of the escarpment, weakening the rock mass. C: Under the effect of mechanical stress-relief, parallel voids formed along the upper part of the bedrock. D. When the point of mechanical failure was reached, sections of the exposed bedrock broke away from the escarpment near the top of the slope, which is more prone to mechanical stress-relief. The collapsed blocks may ('1') gradually slide down the hillside, or ('2') undergo sudden collapse. Both these trends are evident along the Pundawar Manbur slope. Block A1, which contains Pundawar Manbur, formed through Type 1 rockfall. Infographic by Jean-Jacques Delannoy.

Figure 4.5. Pundawar Manbur in its geomorphological setting. The two slipped rock masses A1 and A2 (light colour; A3 is not readily visible at this angle) and the collapsed blocks (orange colour) that together make up the site of Pundawar Manbur, highlighted on a black and white rendition of the original photo. The photo shows the tabular nature of the quartzite plateau and piles of boulders that litter the valley slope all the way down to its thalweg (lowest level) in the foreground. Photograph by Leigh Douglas. Infographic by Jean-Jacques Delannoy.

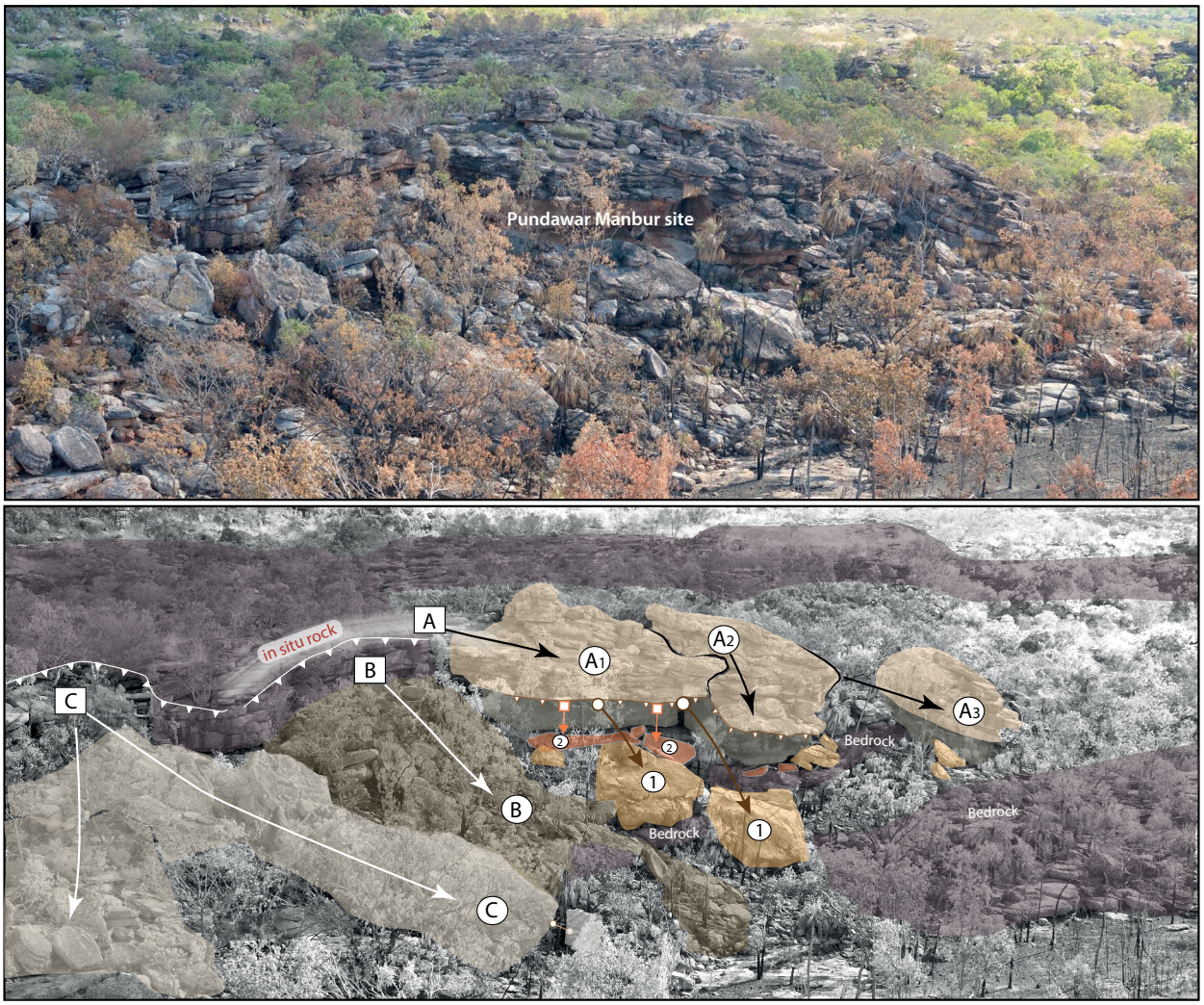


Figure 4.6. The rugged slope of Pundawar Manbur. Pundawar Manbur formed as a result of the downslope slide of two rock masses, quartzite blocks A1 and A2. The entire slope is prone to gravitational forces, resulting in parallel mechanical stress-relief cracks and geological fractures. Blocks A1, A2 and A3 became detached from the plateau's upper ledge, descending down the slope until blocks A1 and A2 came to rest against the outcropping bedrock downslope. Initially, A1, A2 and A3 formed a single, continuous quartzite mega-block along the valley's upper ledge. To the east (left of photo), 'B' and 'C' represent a collapsed chaos of blocks that also originated from the top of the slope. The blocks numbered '1' represent rockfall from the edge of A1. Their collapse probably took place during A1's downward slide into the slightly separated A2, causing stresses along A1's lower edge. This resulted in the formation of the current overhang. Subsequent rockfalls from the ceiling are shown as blocks '2'. Photograph by Robert Gunn. Infographic by Jean-Jacques Delannoy.

Subsequently, the archaeological site—the main rock shelter in A1—underwent mechanical readjustments. The most dramatic was the fall of a thick layer of rock from the ceiling of the overhang (set of blocks '2' on Figure 4.9; 'A' on Figure 4.10), the collapsed stratum sliding very slightly further away from the back wall as it came to rest on earlier collapsed blocks (set of blocks '1' on Figure 4.9). The fallen slab did not detach flush with the back wall of the overhang, but rather projected a few tens of centimetres out, leaving a cornice along the ceiling at the top of the wall. At floor level, a *c.* 50cm-wide gap corresponding with the width of the cornice plus minor sliding of the collapsed slab was thus created between the inner edge of the slab and the back wall. In cross-section, this step between the foot of the wall and the top of the fallen slab exposed, and gave access to, the back wall for the making of rock art on the wall, particularly along its upper reaches.

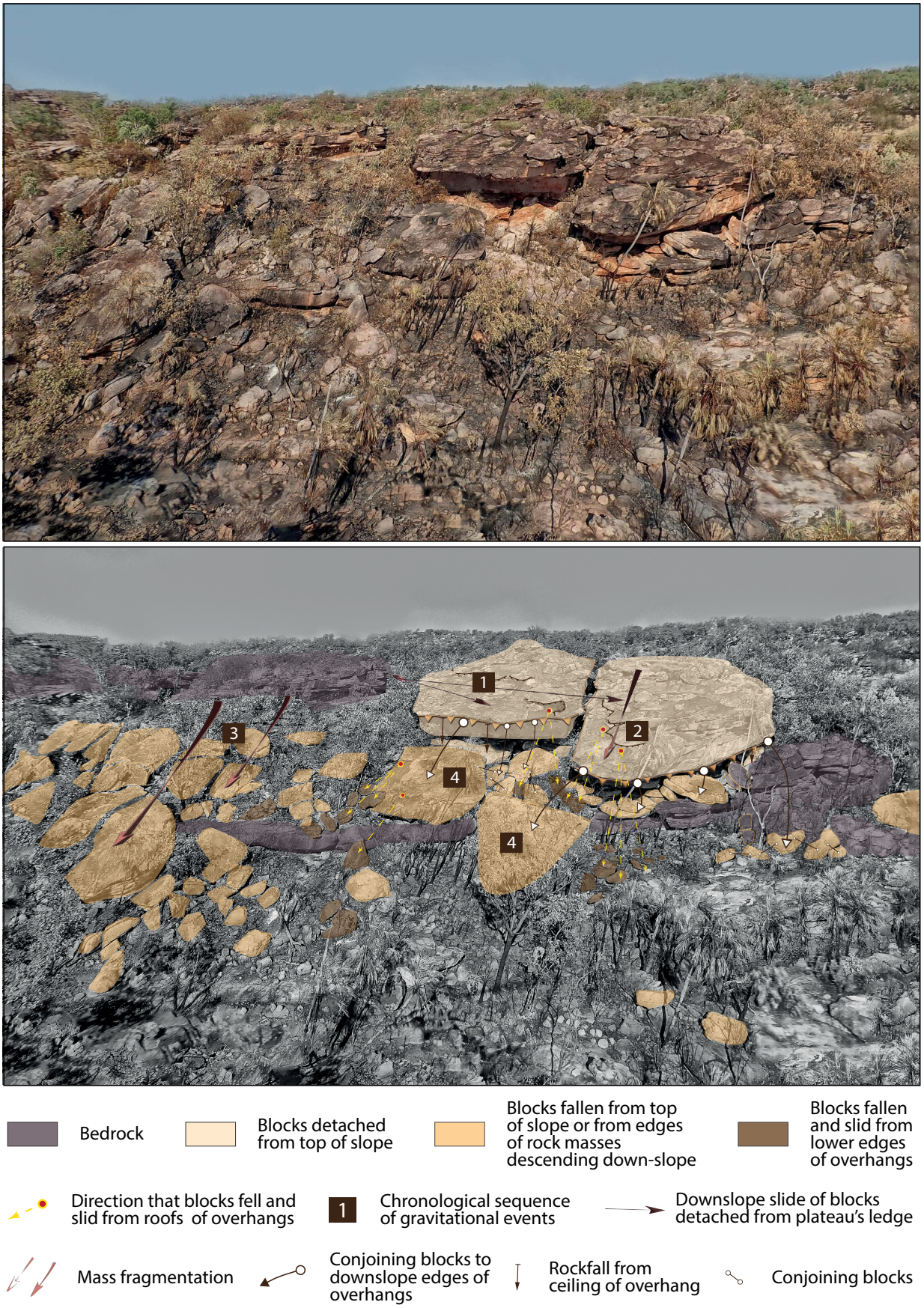


Figure 4.7. Morphogenesis of the Pundawar Manbur slope. Photograph by Leigh Douglas. Infographic by Jean-Jacques Delannoy.

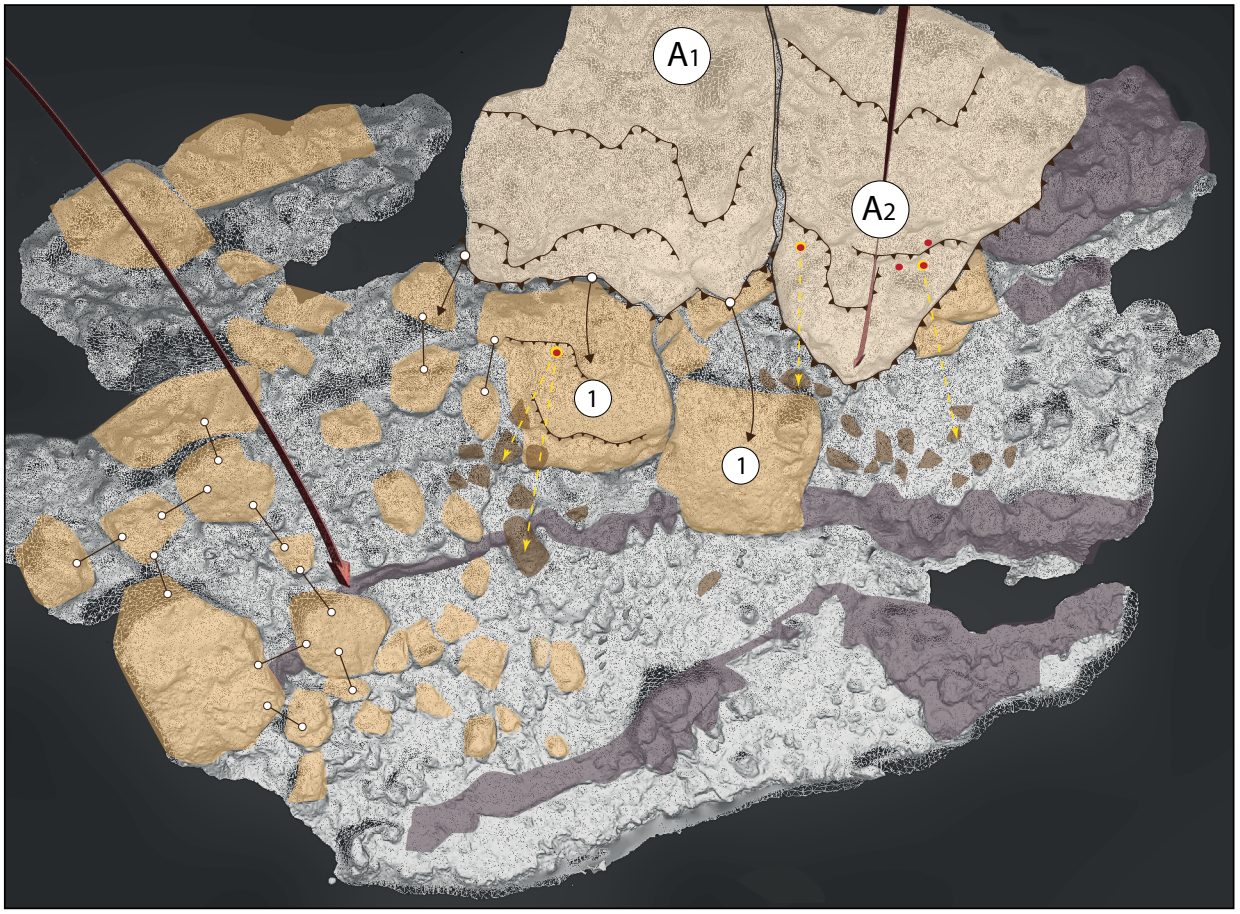


Figure 4.8. Geomorphological map of Pundawar Manbur. The legend is the same as that of Figure 4.7. The map clearly shows the collapse of the overhanging cap of the 'A' set of blocks, which was initially a much larger conjoined set consisting of A1, A2 and the smaller satellite blocks ('1' and smaller conjoining blocks). A2 came to rest on the outcropping bedrock, halting its descent down the slope. A1 abutted against A2 and remained directly below its point of origin. This can be clearly seen in the parallel edge of the overhang of the rock shelter and collapsed boulder. 3D photogrammetric model by Jean-Jacques Delannoy, from photos by Leigh Douglas and Robert Gunn. Infographic by Jean-Jacques Delannoy.

A section of the remnant cornice then collapsed from the top of the back wall (block '3' on Figure 4.9; 'B' on Figure 4.10). Blocks from this rockfall became lodged in the gap on the floor between the wall and the previously collapsed ceiling slab. Further blocks also came to rest in this gap as a result of subsequent rockfalls from the cornice ('C' on Figure 4.10).

Changes to the configuration of the rock shelter continued to take place after these ceiling and cornice collapses. Archaeomorphological mapping of the individual blocks at floor level (Figure 4.11) shows that some of the blocks that had fallen from the cornice ('B' and 'C' on Figure 4.10) were evacuated towards the outside of the overhang ('4' on Figure 4.9), freeing the gap between the back wall and the large collapsed slab from obstruction. Some of the evacuated blocks were moved to the edge of the shelter while others were removed beyond the overhang. The blocks that remained in the gap were the largest—they appear to have been too large for removal. There is thus a noticeable difference between the total fallen mass (as evident by the remnant scars on the cornice) and the blocks that now remain in the gap. This difference was caused by the manual removal of the smaller collapsed blocks by people in the past and these removed blocks can now be seen on the ground just beyond the SE edge of the overhang. The removals make it easier to walk along the interstice and were thus probably made to facilitate access to the back wall, possibly for the making of its rock art. In some areas, access to the base of the decorated wall was

Figure 4.9. Morphogenic evolution of the Pundawar Manbur rock shelter in block A1. The colour code differentiates three phases of rockfall under the overhang. '1' corresponds to the collapsed blocks on the edge of the shelter. '2' relates to the collapsed ceiling layer under much of the overhang. '3' refer to the collapsed blocks from the cornice at the top of the back wall. The gap—a narrow corridor—between the back wall and the fallen ceiling slab ('2') is clearly visible; rockfall '3' is wedged in this gap. '4' are blocks that were manually removed by people in the past from the gap between the back wall and the large fallen slab ('2'). Photo: Robert Gunn. Infographic by Jean-Jacques Delannoy.

only made possible after the fallen blocks had been removed. These anthropic workings of Pundawar Manbur's rock matrix is consistent with similar rock workings also documented from other rock art sites in the Kimberley (Delannoy *et al.* 2020) and Arnhem Land 700km to the east (Delannoy *et al.* 2017). The physical configuration of the rock shelters was actively modified by people, irrespective of whether such transformations were planned with rock art in mind.

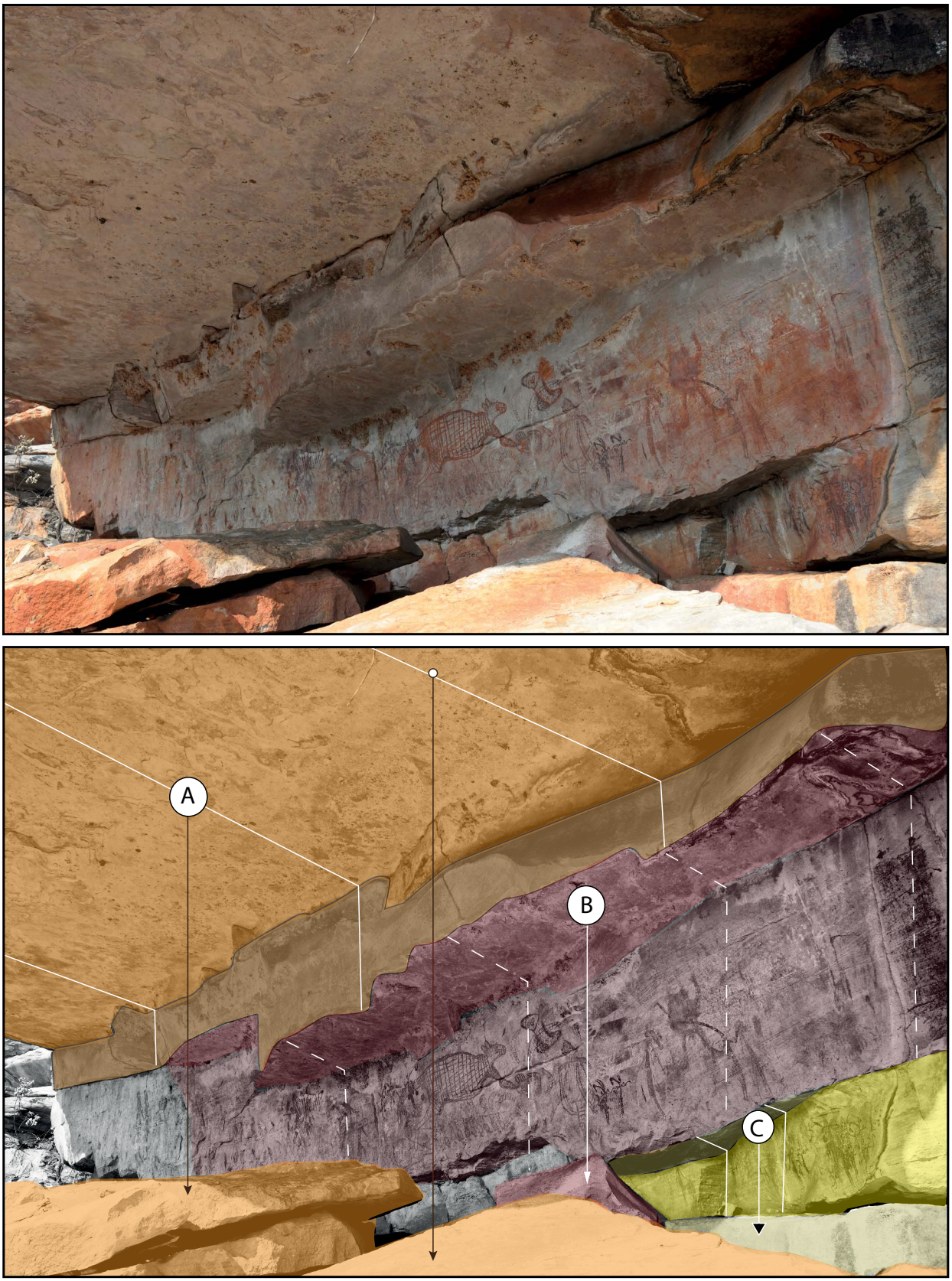


Figure 4.10. Physical evolution of the interior of the rock shelter. Colour coding is the same as for Figure 4.9. Photograph by Robert Gunn. Infographic by Jean-Jacques Delannoy.

Figure 4.11. Archaeomorphological map of the rock shelter at Pundawar Manbur. Detailed cartography by Jean-Jacques Delannoy, from basemap by Robert Gunn.

PART A
Pundawar Manbur Art Panel A

Introduction
Art Panel A

Art Panel A is found on a long, horizontally aligned vertical rock face that makes up Pundawar Manbur's back wall. The Art Panel extends for most of the full width of the shelter (Figures 3.5 and 3.8). It is 11m long and ranges from 1.6 to 2.0m high, with a slight inward bow along the panel's length. Here the back wall is decorated over most of its *c*. 20m^2 area.

Art Panel A contains 423 motifs. This total consists of 372 non-indeterminate motifs, 51 indeterminate discrete areas of pigment ('fragments'), and 32 instances of subsequent motif modifications representing material evidence of re-engagement events (with some motifs having more than one such episode of modification, such as repainting or targeted battering) (Appendices 1–3). In the following chapters, the original motifs are individually numbered (e.g., '#177'), and any later reworking of a motif is progressively numbered with suffix letters that represent individual modification events '#177a', '#177b' and so forth. Generally, motifs were numbered from left to right across the Art Panel. A small number of motifs identified late in our investigations, during reassessments of the panels as we checked and re-checked our findings, were numbered late and are thus out of order in the general numbering's spatial pattern.

Art Panel A contains examples of most of the Kimberley's formally recognised motif types. Notable exceptions are a lack of motifs from the Painted Hands Period and no Dynamic Gwion motifs or 'classic' Wanjina figures (but an early Wanjina motif—Walsh's 'Tulip-ray headdress' Wanjina—and the repainting of the central macropod motif (#177d) are both in the Wanjina style) (e.g., Figure 2.4A).

For convenience of recording and analysis, Art Panel A was divided into Art Panels A1–A5. Visually and numerically, the eastern end of Art Panel A is the least decorated and contains the fewest superpositions (Tables A.1 and A.2; Figure A.1). Art Panel A1 is exposed to direct sunlight in the late morning and is at the more open end of the shelter, suggesting that it was largely avoided because of its less protected position. Although a detailed condition study of Art Panel A has yet to be undertaken (cf. Thorn 2021; Thorn and Dean 1995), a superficial summary of major deterioration factors (Figure A.1) indicates that exfoliation is largely restricted to the centre of the Art Panel rather than to the more exposed Art Panel A1. Also, none of the exfoliated areas are particularly large (relative to the size of the motifs at the site), and therefore exfoliation has destroyed little of the panels' art. The problem of pigment deterioration or colour change across the panels is beyond the scope of this project and was the main reason why the order of some motif superpositions could not be determined.

Table A.1. Art Panel A: Size and number of motifs per art panel.

Art Panel	Width (m)	Height (m)	Area (m^2)	# of Motifs*	# of Instances of Superposition**	# of Motifs not in Superposition
A1	2.8	1.7	4.8	28	39	1
A2	2.9	1.8	5.2	73	84	6
A3	2.5	1.3	3.3	63	115	13
A4	3.7	1.6	5.9	111	256	12
A5	5.1	2.0	10.2	179	380	12
TOTAL	11.0	1.8	20.0	454	874	44

*Includes motifs, motif embellishments, and fragments

** One motif can be superposed over more than one other motif. This column includes each instance of superposition

Table A.2. Art Panel A: Motif and superposition density for each sub-panel.

Art Panel	Motif density (# of motifs/m²)	Superposition density (# of superpositions/m²)
A1	6	8
A2	15	16
A3	18	35
A4	19	43
A5	18	37

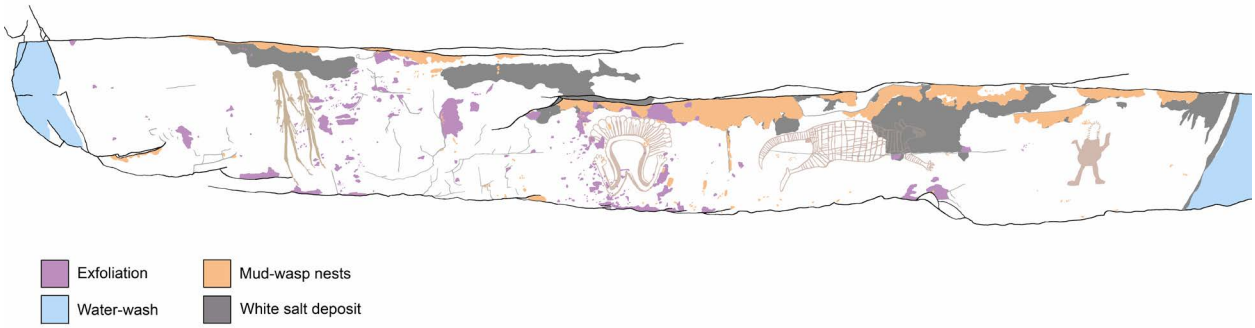


Figure A.1. Art Panel A: Condition summary, with prominent motifs indicated.

Figure A.2. Recent, deteriorating white pigment overlying well-preserved dark red pigment produced some 12,000 years before the white, as determined by radiocarbon ages on overlying mud-wasp nests (Art Panel A3).

Across Art Panel A, hand stencils are the only motif type to have been consistently damaged by exfoliation. In contrast, some Gwion figures and many more recent images were painted over exfoliated areas, without those motifs having themselves been subjected to exfoliation. This finding indicates that there has been little surface exfoliation over the past 12,000 years, given the demonstrated absolute age of Gwion figures (cf. Finch *et al.* 2020). This demonstrates the inherent stability of the back wall and of Art Panel A's rock surface and, with this, of most of its rock art. In contrast, Art Panel H (below Art Panel A) shows signs of very fresh-looking exfoliation, suggesting that deterioration is active on this panel. Overall, the impression is that the vast majority of the art made on Art Panel A remains extant to this day.

Other factors affecting the current appearance of the motifs on Art Panel A include: (1) The intermittent presence of mud-wasp nests across the top of the panel; and (2) The differential preservation of differently coloured pigments (Walsh 1994: 22–26, 2000: 52–54; Welch 2015: 116–117). Examples include the disintegrating white pigment of an early Wanjina painting (from one of the most recent phases of Kimberley rock art) and the clarity of the much older, underlying dark red Gwion figures (from an art style regionally radiocarbon dated to *c.* 12,000 years ago) (Figure A.2). While the fugitive nature of white pigment generally is well-acknowledged across northern Australia, irrespective of whether it consists of huntite or kaolinite (Clarke 1978), the chemical composition of the strongly coloured (mulberry) pigment used in many of the Gwion motifs is still debated, although in most cases it is likely a variant of haematite (Chalmin and Huntley 2018; Huntley *et al.* 2015). As to why the Gwion figures have retained excellent edge clarity and strongly saturated colours compared to other rock art images at sites such as Pundawar Manbur, remains to be determined. (3) Salt encrustation is evident across the top of Art Panel A and appears to be both over and under a number of motifs. The effects of the white salts on the art are unknown.

Chapter 5
The Art of Art Panel A1

Art Panel A1 is at the eastern end of the rear wall. It is 2.8m wide and 1.7m high, and contains 28 motifs (Table 5.1; Figures 5.1–5.5; Appendix 1). The panel is exposed to direct sunlight in the late morning and is at the more open end of the shelter. The eastern (left) side of the panel's rock wall is stained by water-wash, from an off-white colour to light brown-red that merges to pink-grey at the right side of the panel[1].

The art is lightly distributed across the panel but more concentrated on the right side. Most of the art is very faint and can only be clearly discerned with photo-enhancement (Figure 5.6).

A large area of amorphous red pigment spread across the top of the panel (#7; Figure 5.3) overlies the solid silhouette of the upper half of a large but unidentified animal (#8). These two motifs are overlain by a pair of stencilled boomerangs in red (#9a and #9b).

Although very faint, and therefore difficult to see, one of the largest motifs is an indistinct scratching of an anthropomorph (#2), 132cm tall, that extends the full height of the left-hand side of the panel (Figure 5.2). The figure's right hand, right lower leg and part of its headdress are no longer apparent. The relative sharpness of the scratched lines suggests that the image was made with a sharp, metal implement. The anthropomorph can be subdivided into three segments: body + limbs outlined and infilled with vertical stripes; head in outline with grid infill; and an outlined headdress that has been infilled with abraded lines (Figure 5.4). The size and degree of detail in its construction suggest that it may have been of some importance, but why such a figure would be produced as a very shallow scratching that is so difficult to see is unclear, other than perhaps it was never meant to be clearly seen. Scratchings, which are widespread but rarely reported across the Kimberley, are almost always hard to see and can vary in size, but with no increase in the emphasis or depth of the lines as motif sizes increase. The head of this anthropomorph has been placed directly over that of a smaller Gwion figure (#1). A second large, scratched figure (probably also an anthropomorph) was placed a metre to the right of the first, but it is now mostly too faint to decipher.

Table 5.1. Art Panel A1, summary of the art by technique. 'Fragments' includes fragments in all techniques.

Characteristic	Number
Drawing	
Band	1
Painting	
Dalal Gwion	1
Ngunuru Gwion	3
Other anthropomorph	1
Large fauna	2
Snake	1
Design grid	1
Arc	1
Pounding	
Area	1
Spray	
Standard hand stencil	4
Variant hand stencil	3
Object stencil (boomerang)	1
Scratching	
Anthropomorph	2
Hand	2
Apex design	1
Line set	1
Total	**26**
Fragments	1

Among the other smaller scratchings is a pair of outlined hands (#14 and #17). Although #17 is partially indistinct, the two appear to be a pair, and, being the size of adult hands, were most likely traced around the hands of the artist (Figures 5.4 and 5.5). Motif #17 was positioned

[1] Throughout this monograph, reference to the 'left' or 'right' of a rock art panel, or of the back wall of the shelter, is made with the observer facing the back wall.

Figure 5.1. Art Panel A1, photograph taken with flash. (Photograph by Robert Gunn).

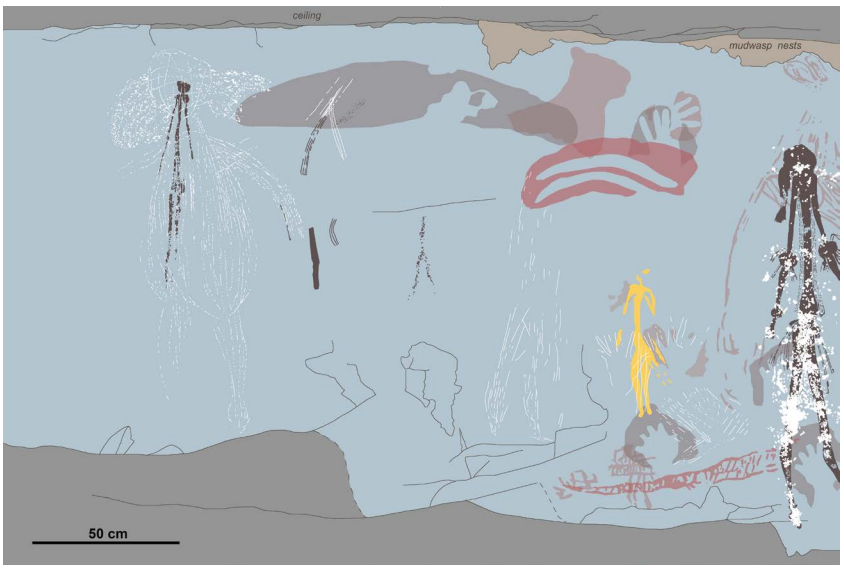


Figure 5.2. Art Panel A1, photo-tracing.

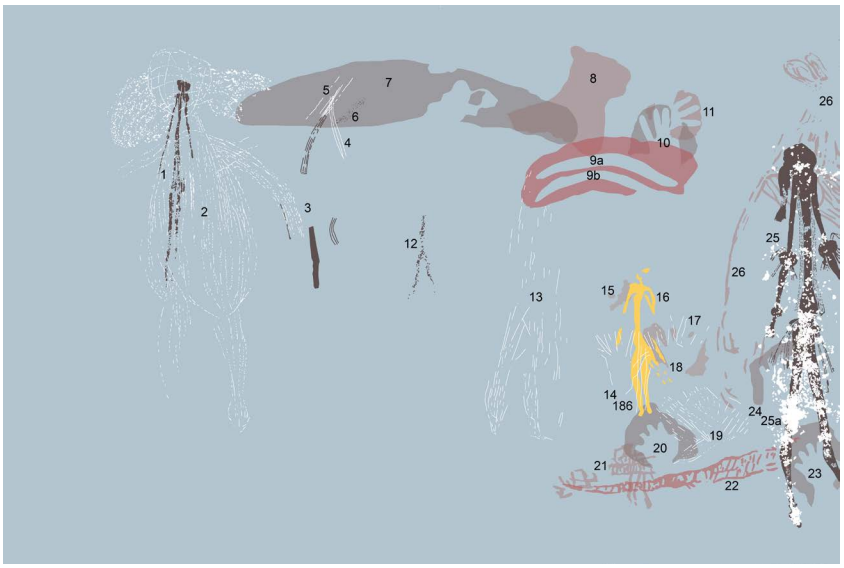


Figure 5.3. Art Panel A1, motif codes.

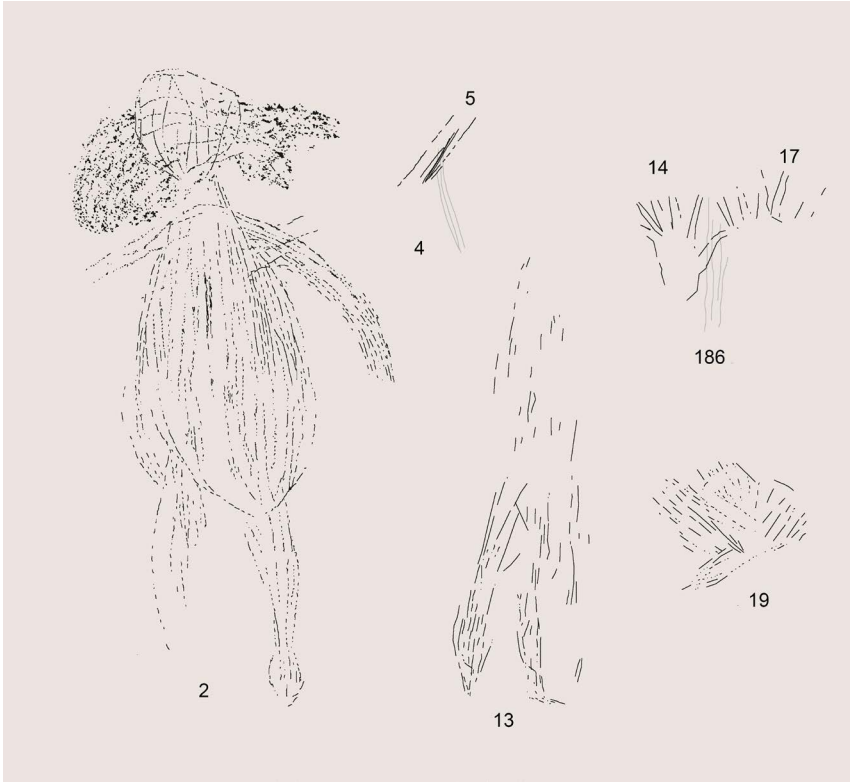


Figure 5.4. Photo-tracing of the scratched motifs on Art Panel A1. The dimensions of motif #2 (scratched anthropomorph) are 133 × 57cm. Superpositioning: #4 overlies #5 and #186 overlies #14.

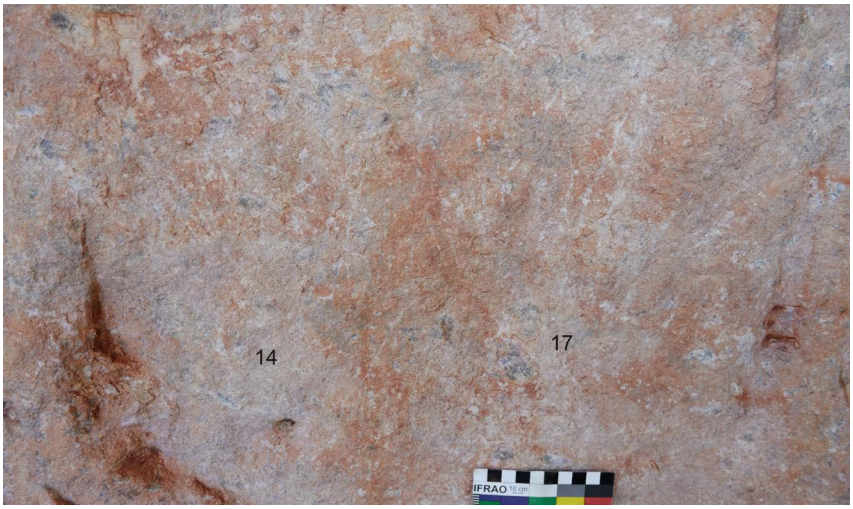


Figure 5.5. Photograph of faintly scratched outlined hands. Maximum lengths of hands: motif #14: 22cm; motif #17: 13cm. (Photograph by Robert Gunn).

Figure 5.6. Art Panel A1 motif #20 (variant hand stencil). Knuckle width: 9.5cm. (Photograph by Robert Gunn).

almost directly over an earlier hand stencil (#8). The two scratched hands were also placed over a faint, yellow Ngunuru Gwion (#16). A small cluster of vertically scratched marks (#186) overlie the legs and torso of the yellow Gwion, and the thumb of scratched hand #14.

There is also a large painted Ngunuru Gwion (#25) whose hands, feet, head, groin and knees were selectively battered (pounded and pecked) (#25a). The attributes of this Ngunuru Gwion will be described further in Art Panel A2, as it is one of a pair that cannot be fully appreciated on its own. Ngunuru Gwion #25 overlies a large, vertical macropod (#26) and two variant hand stencils (#23 and #24). The upright macropod was painted in outline and linear infill and is now in very poor condition. Its pose suggests that it is sitting on its tail, although no trace of the tail remains. The variant hand stencils, of which there are three (#20, #23 and #24), all have their four fingers truncated. There are no grounds for determining whether these particular three variant hand stencils were produced by folding the fingers and thumb under while stencilling, or, alternatively, represent accidental or ritual amputations (for examples of variant hand stencils produced by folding fingers elsewhere in Australia, see Walsh 1979; Wright 1985). Further, as all three variant hand stencils are of similar colour, size and condition and appear to be contemporaneous, they were most likely produced by the same person (Figure 5.6).

A group of four deep, dark red marks (#3) appears to be the surviving portions of a bichrome Dalal Gwion. The remnant forms are the body, curved headdress, a short stick and a cluster of three boomerangs,

Figure 5.7. Art Panel A1 motif #3 (Dalal Gwion). (Photograph by Robert Gunn).

all of which appear to have been held by the Dalal Gwion (as typical of this motif type) (Figure 5.7). As with many other Dalal Gwion in the Kimberley, the spaces between the remnant paint sections were probably originally painted in white pigment that has since disintegrated (for this reason, Dalal Gwion were previously termed 'bichrome figures' by Welch 1993a).

Motif #8 is the remnants of a large animal image. It is unusual as its uniform solid form, without outline or infill, is of a shape not mentioned in any of the previous descriptions of early fauna images in Kimberley rock art. Given its poor state of preservation, it is not possible to determine whether it was originally outlined or pattern-infilled but is now too faded to tell.

Chapter 6
The Art of Art Panel A2

Art Panel A2 is 2.9m wide, 1.8m high and contains 73 motifs (Table 6.1; Figure 6.1–6.6; Appendix 1). The panel is exposed to direct sunlight in the late morning and is at the more open end of the shelter. The left side of the rock panel is pink-grey in colour, with its upper area heavily encrusted with a white coating, possibly salt. The right side has stepped, layered fracturing. The centre has a number of exfoliated patches.

The clearest and most dominant motifs on this panel are a pair of large Ngununu Gwion (#25 and #27, #25 overlapping with Art Panel A1). Both are similarly painted in two tones of dark red, with the original silhouette painted in the lighter tone and the subsequent outline and details emphasised in the darker tone (Figures 6.1, 6.4–6.10). The two Ngununu Gwion face each other, but both have their feet facing to the right (from the perspective of the viewer looking onto the back wall). However, the legs of the pair differ in their proportions and structure. The figure on the right (#27) has proportions and calf structure similar to those of a person. That on the left (#25) has disproportionately elongated legs, but still retains feet and ankles similar to those on motif #25 (Figure 6.7). These are the two most decorated Ngununu Gwion at Pundawar Manbur. Their decorations include:

- 'Pony-tail' hair tied with a band near the end.
- Thin dashed 'strings' forming a border to the torso.
- Elbow bands with string tassels.
- Wrist bands.
- Waist bands with tassels, and
- Ankle bands ('anklets').

Table 6.1. Art Panel A2, summary of the art.

Characteristic	Number
Drawing	
Apex design	1
Line pair	1
Painting	
Ngununu Gwion	14
Other anthropomorph	5
Unidentified fauna	**1**
Yam	1
Arc	1
Bar row	2
Line	1
Line set	4
Trident	1
Y-shape	1
Apex Design	4
Simple design	3
Pounding	
Area	1
Spray	
Standard hand stencil	20
Variant hand stencil	6
Total	**67**
Fragments	6

The smaller figure (#27) also has a headdress of two straight, elongated rod-like protrusions emanating from the top of its 'pony-tail'.

The feet of both figures extend down from the legs (#25) or at a slight angle (#27), giving them an appearance of unreal weightlessness. Whether or not the two Ngununu Gwion wear some form of footwear is difficult to tell, as the hands were painted in a similar generic 'mitten' form to the feet (i.e., the fingers, and the toes, are not depicted). Due to later battering, it is also not possible to determine whether the pair are holding hands or, rather, have close hand contact (Figure 6.10).

Three yellow Ngununu Gwion (#40, #74 and #75) are difficult to discern without photographic enhancement. The body form of each figure was painted in yellow pigment, with the outline and infill pattern painted in a darker yellow-brown (Figures 6.2, 6.5 and 6.11). The three figures are respectively 128cm (#40), 78cm (#75) and 37cm (#74) in height, with the latter two forming a compact composition and motif #40 being an isolated large figure. Unlike the red Gwion figures

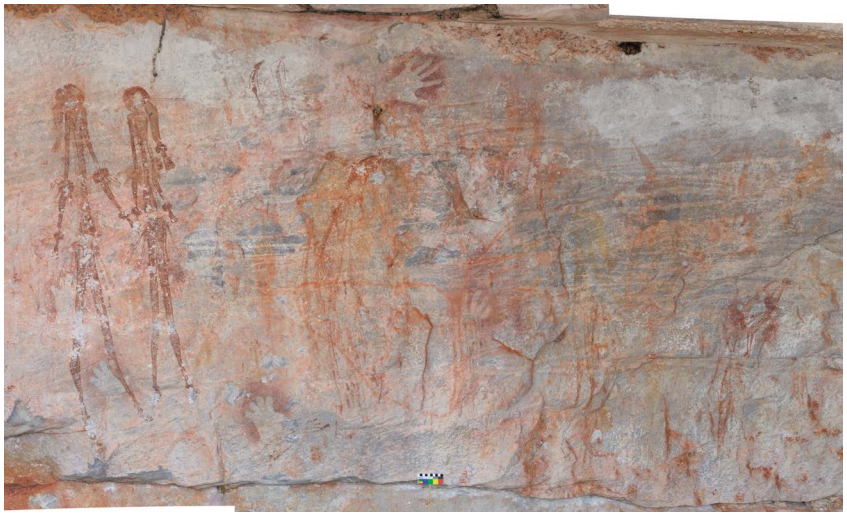


Figure 6.1. Art Panel A2, Photographed with flash. (Photograph by Robert Gunn).

Figure 6.2. Art Panel A2, original photograph enhanced with DStretch_lye10 to highlight indistinct yellow paintings.

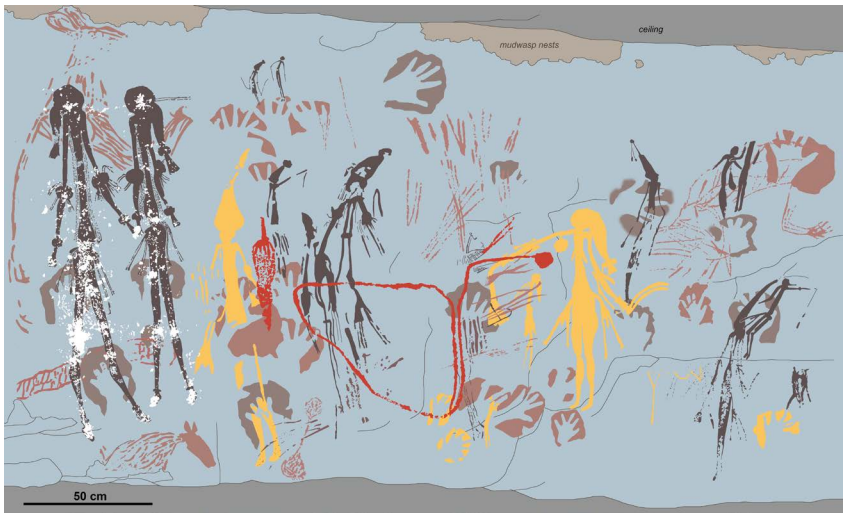


Figure 6.3. Art Panel A2, photo-tracing.

Figure 6.4. Art Panel A2, variant and standard red hand stencils, and red animal motifs (#26 and #30) from the Irregular Infill Animal Period.

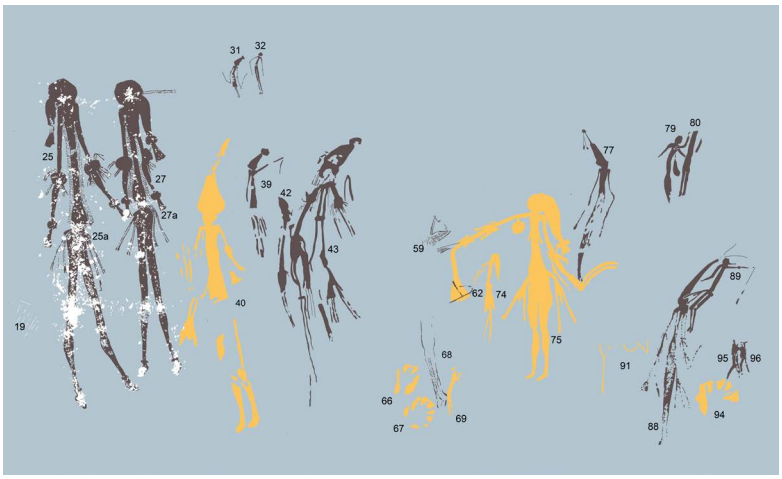


Figure 6.5. Art Panel A2, Ngununu Gwion figures in red and yellow, with other contemporaneous motifs.

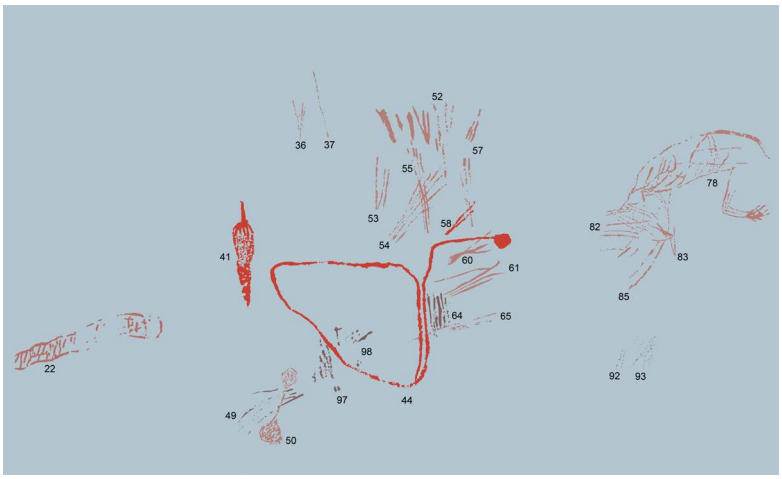


Figure 6.6. Art Panel A2, non-figurative motifs and a fragmentary anthropomorph (#78).

Figure 6.7. Ngununu Gwion with superimposed battering (#25 and #27). The larger figure is 132cm tall. (Photograph by Robert Gunn).

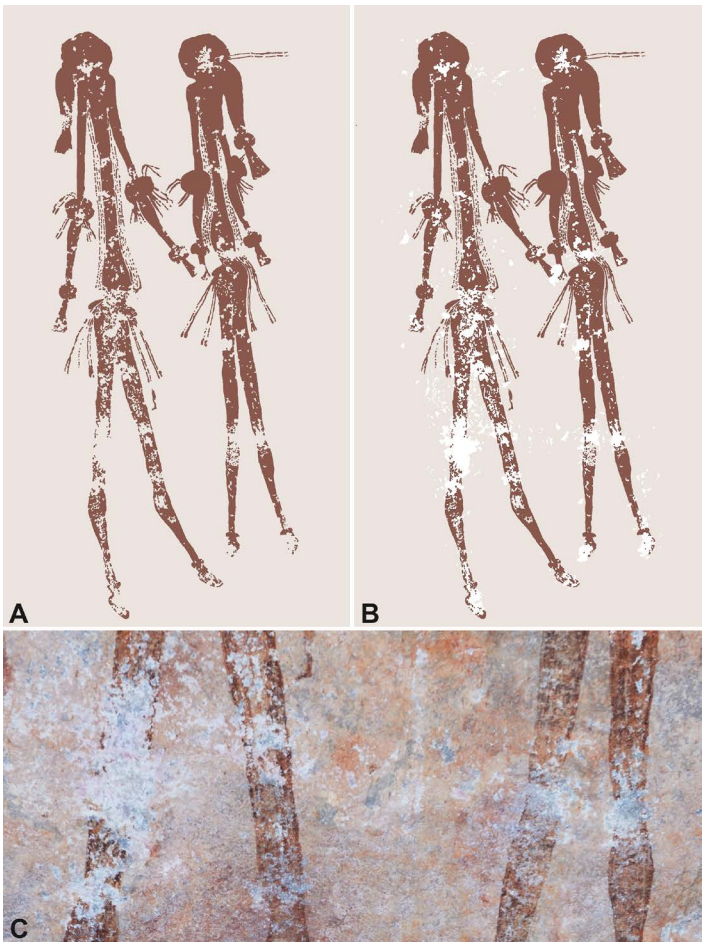


Figure 6.8. Ngununu Gwion (#25 and #27) and battering (#25a and #27a). A: Gwion figures. B: Gwion figures with battering. C: Detail of battering on the knees/thighs.

Figure 6.9. Head and headdress details on motif #27. Note the use of two colours in outline and infill, and subsequent battering over the head. (Photograph by Robert Gunn).

Figure 6.10. Details of body decoration on motifs #25 and #27. (Photograph by Robert Gunn).

discussed above (#25 and #27), motifs #40 and #70 have their feet at right-angles to their legs, giving them a sense of being grounded rather than of the ethereal. Their body decorations also contrast with those of the larger dark red pair (#25 and #27). Motif #40 (in very poor condition) has a tall headdress or hair style, the remains of a tassel apron, and appears to be holding a set of three short spears, although this part of the painting is too damaged to be certain of the latter. Motif #74, the smallest and least detailed of the three, has a falling 'pony-tail' hair style and double-sided apron. Motif #75 is the most detailed and best preserved of the three. It has a 'pony-tail' with hair band, similar to those of motifs #25 and #27. Other body decorations include:

- A round 'pom-pom' hanging from the bicep.
- A double stick-like ornament on the elbow and wrist, and
- A pair of tasselled aprons.

In its right hand, the Ngununu Gwion in motif #75 holds a fan-like object and, in its left hand, a pair of boomerangs. The figure (75cm tall) is positioned so that the smaller motif #74 (38cm tall) is enclosed by the larger figure (Figure 6.11). The size and decoration differences between the two suggest a more major role for the larger figure, if prominence and elaboration signal its relative importance. While the painting technique cannot be determined for motifs #40 or #74, that for motif #75 is similar to that of motifs #25 and #27, consisting of a thinly mixed yellow pigment that was subsequently outlined and internally decorated with a striped infill using a darker brown-yellow (Figure 6.11).

There is clear superposition of a small red Ngununu Gwion (#89) over a larger red Ngununu Gwion (#88), with both overlying a variant hand stencil (#90). The headdress of the larger Gwion (#88) cuts across the short 'stubby' fingers of the hand stencil, while the smaller Gwion (#89) was placed to sit on the position of the thumb, so that its legs follow the thumb line to the wrist and then down the arm of the hand stencil (Figure 6.12).

Another pair of Ngununu Gwion (#31 and #32) contrast with those just described. They are small (18cm tall) and painted with thin, delicate lines (Figures 6.5 and 6.13). While both are of similar size to each other and hold rod-like implements in both hands (Figure 6.5), only the left Ngununu Gwion (#31) has ornamentation.

Figure 6.11. Yellow Ngunuru Gwion (#74 and #75). The larger motif #75 is 78cm tall. (Photograph by Robert Gunn).

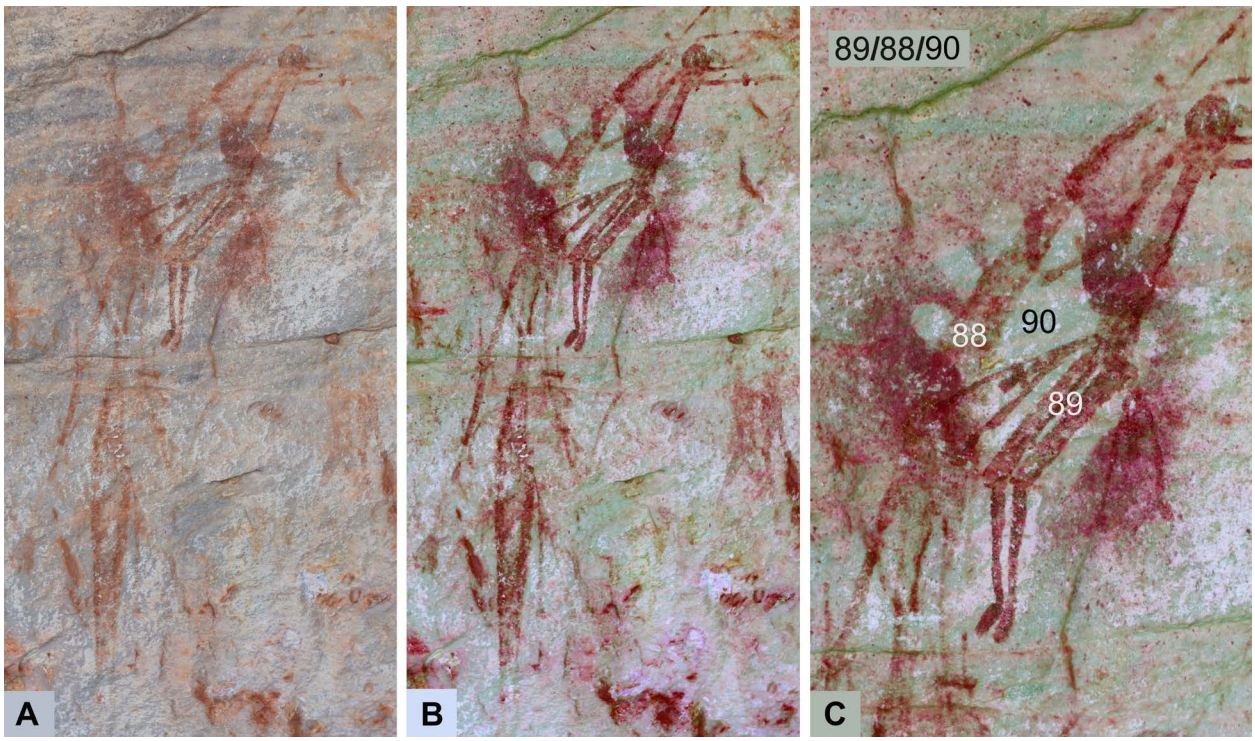


Figure 6.12. Superposition of Gwion (#89) over Gwion (#88), over variant hand stencil (#90). Photograph, DStretch_rgb010 enhancement, and detail of the superpositions. The variant hand stencil's knuckle width is 9cm.

Figure 6.13 Small Gwion figures (#31 and #32). Motif #31 (left) is 17cm tall. The percussion marks on the bodies of both figures may be battering or accidental damage. (Photograph by Robert Gunn).

Figure 6.14. Variant hand stencil, motif #48. Note the similarity of form to motif #20 (Figure 5.1) and other variant hand stencils on this panel. The knuckle width of motif #48 is 9.5cm. (Photograph by Robert Gunn).

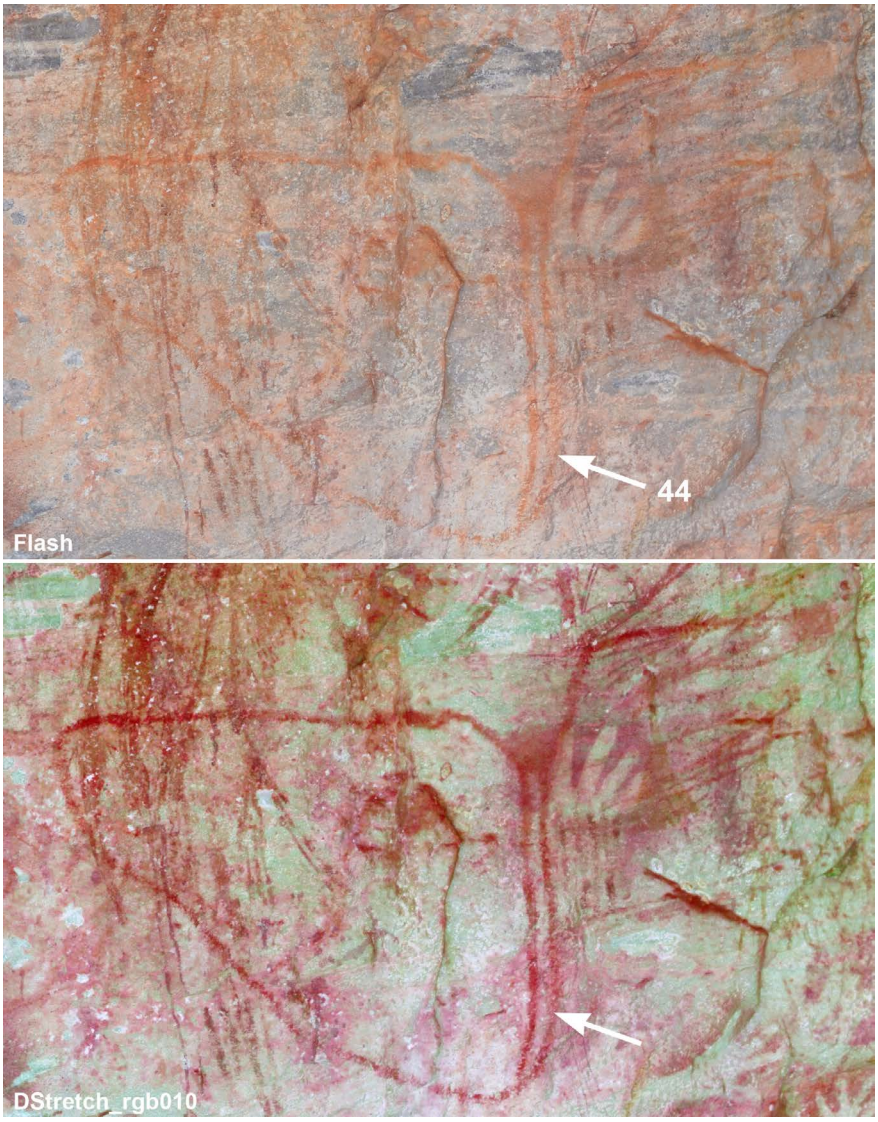


Figure 6.15. Large geometric design (#44), which is one of the most recent motifs on Art Panel A2. Photograph and DStretch_rgb010 enhancement. The motif is 103 × 62cm in its two greatest perpendicular dimensions. (Photograph by Robert Gunn).

Battering occurs on and around the two large Ngunuru Gwion (#25 and #27) (Figure 6.5). The battering (#25a and #27a) was made after the Ngunuru Gwion were painted. This engagement with these pre-existing Ngunuru Gwion is concentrated on the feet, knees, groin, belly, hands, and head of each figure, with some attention to their thighs also apparent (Figures 6.7 and 6.8). No other motif on Art Panel A2 has been so battered.

Hand stencils, in both standard and variant forms, occur across the panel (Figure 6.4). Motif #48 is the clearest example of a variant hand stencil on Art Panels A1 and A2 (Figure 6.14; cf. Figure 5.6). A large geometric linear design in red (#44; 103 × 52cm) and a small pair of converging lines (#58) above the right-hand end of motif #44 are among the most recent paintings on Art Panel A2 (as determined by superpositioning and motif condition) (Figures 6.6 and 6.15). Motif #44 is positioned near the centre of the art panel. The abstract form of motif #44 is unique at the site. On the basis of their excellent state of preservation, two sets of red drawings (#92 and #93) at the lower right-hand side are the most recent motifs on the panel.

Chapter 7
The Art of Art Panel A3

Art Panel A3 is 2.5m wide and 1.3m high and contains 65 motifs (Table 7.1; Figures 7.1–7.6; Appendix 1). All of the art apart for two motifs lies on a slightly recessed part of the rear wall that is capped by a narrow, stepped overhang. This overhang provides perfect shelter for mud-wasps to build their nests. While many of the old nests have fallen, they have left a white coating on the wall indicating their past presence. Art occurs both over and under these remnant coatings. Elsewhere, apart from a few small areas of exfoliation, the panel surface appears to have remained stable over the period of art production. The lightly mottled colours of the wall and pigment deterioration make motif forms across the panel difficult to determine.

Table 7.1. Art Panel A3, summary of the art by technique. 'Fragments' includes fragments in all techniques.

Characteristic	Number
Drawing	
Arc	1
Bar set	1
Line	2
Apex design	3
Leaf-shape design	2
Simple design	1
Painting	
Ngununu Gwion	3
Yowna Gwion	4
Wanjina	1
Wanjina headdress	1
Other anthropomorph	4
Macropod	1
Snake	1
Unidentified fauna	3
Line	1
Bar row	1
Bar set	1
Apex design	1
Simple design	1
Boomerang	1
Pounding	
Area	3
Spray	
Standard hand stencil	10
Variant hand stencil	2
Object stencil (boomerang)	3
Scratching	
Unidentified object	1
Total	**53**
Fragments	8

The dominant image on this panel is a centrally positioned, early-period Wanjina that accords with Walsh's 'tulip-ray' motif (Figures 7.1, 7.5 and 7.7). Overall, this image is badly weathered and its form is largely only discernible through the survival of part of its white headdress. The original design was carefully painted in white, with its edges sharply defined. From the similar freshness of the pigments, it is likely that the red outline was added a short time later with more rapid brushstrokes and with less care to the sharpness and precision of its outlines (Figure 7.8).

The only other prominent images on this panel are a pair of Ngununu Gwion (#127 and #128) that underlie the Wanjina image (Figures 7.1, 7.4 and 7.9). These two Gwion figures appear contemporaneous as they form a unified composition, and are of similar size, colour and preservation. A third, smaller Ngununu Gwion (#129) appears to also be contemporaneous with this group, and is partially superposed by the larger Ngununu Gwion (#127). This indicates either that it was painted as the first of the three figures all made at about the same time, or that motifs #127 and #128 were added later specifically to incorporate the earlier figure into a composition. This smaller figure wears tassels and holds a boomerang in its right hand, but nothing in its left hand (Figures 7.1 and 7.4).

The large Ngununu Gwion (#127 and #128) wear quite different body decoration from those of the large Ngununu Gwions in Art Panel A2 (#25 and #27). Motif #127 and #128 have more complex headdresses, more substantial elbow decorations and waist tassels (Figure 7.9). The larger figure (#127) has what appears to be a tasselled chest

Figure 7.1. Art Panel A3, photograph taken with a flash. (Photograph by Robert Gunn).

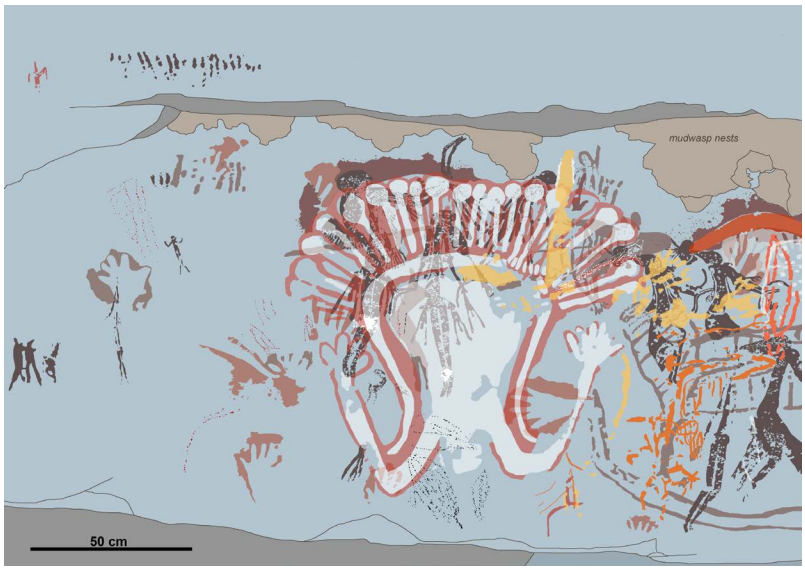


Figure 7.2. Art Panel A3, photo-tracing.

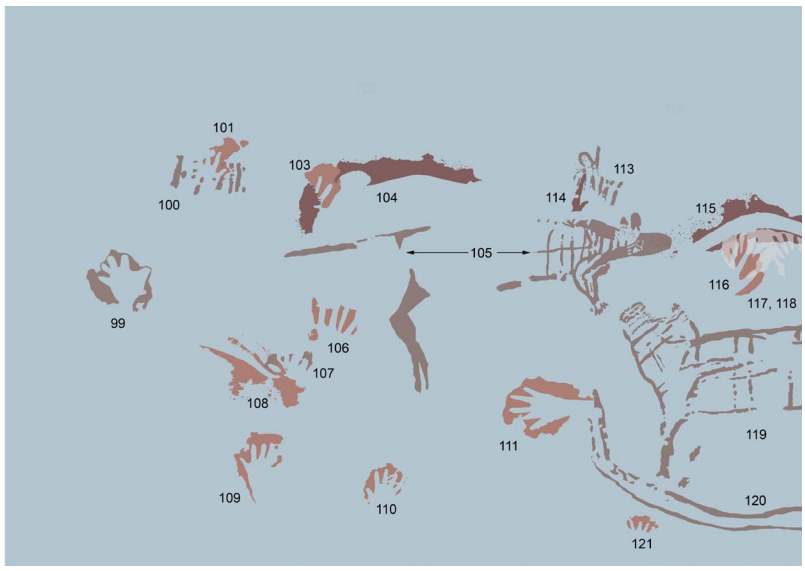


Figure 7.3. Art Panel A3, hand and boomerang stencils, and painted animals from the Irregular Infill Animal Period.

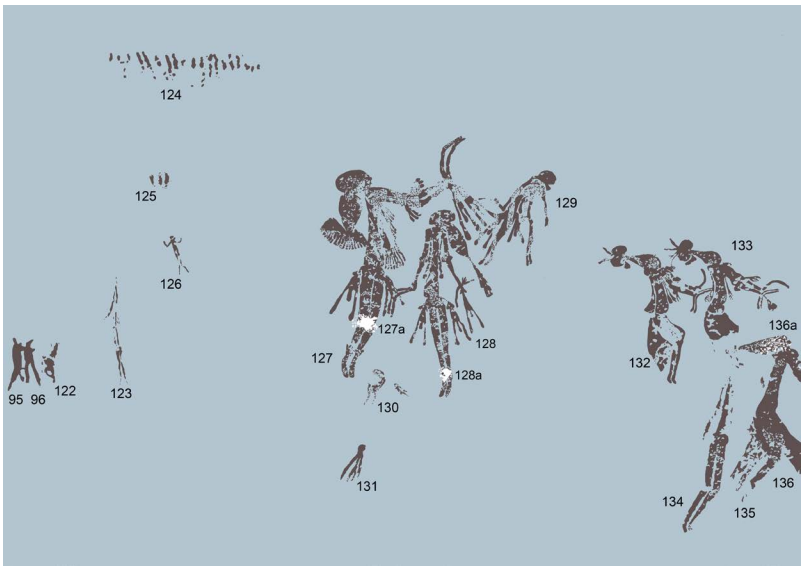


Figure 7.4. Art Panel A3, Ngununu Gwion (#127–#129), Yowna Gwion (#132–#136) and other contemporaneous motifs.

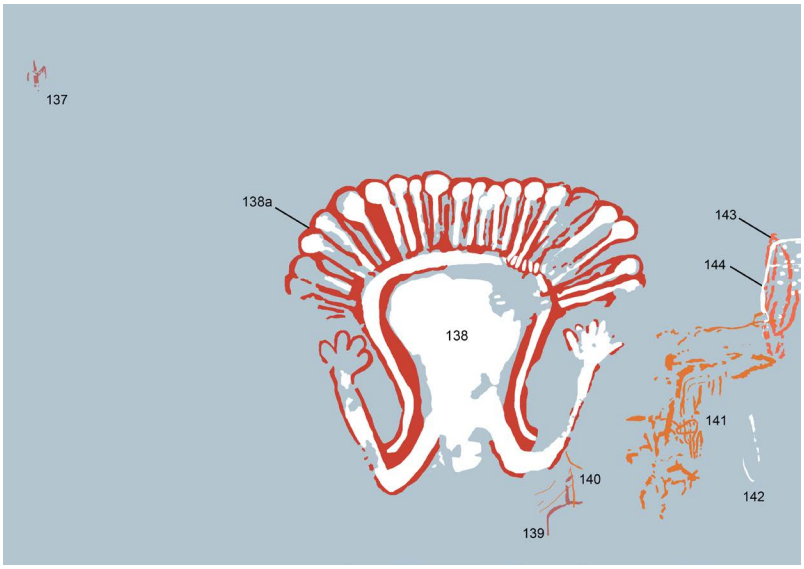


Figure 7.5. Art Panel A3, Wanjina figure (#138) and other contemporaneous motifs.

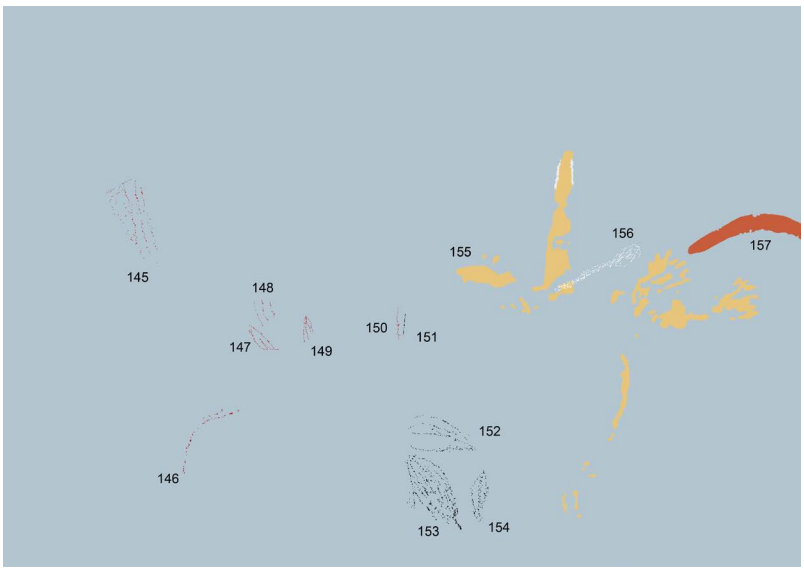


Figure 7.6. Art Panel A3, dry pigment drawings (#145–#154), yellow fragmented motif (#155), scratching (#156), and a painted boomerang (#157) that follows the shape of an earlier stencilled boomerang (#115).

Figure 7.7. The Wanjina image, motif #138 (photograph and DStretch_yye10 enhancement). Note the deterioration of the Wanjina's pigment compared with that of the underlying Gwion figures. The Wanjina is 106cm tall and 108cm wide. (Photograph by Robert Gunn).

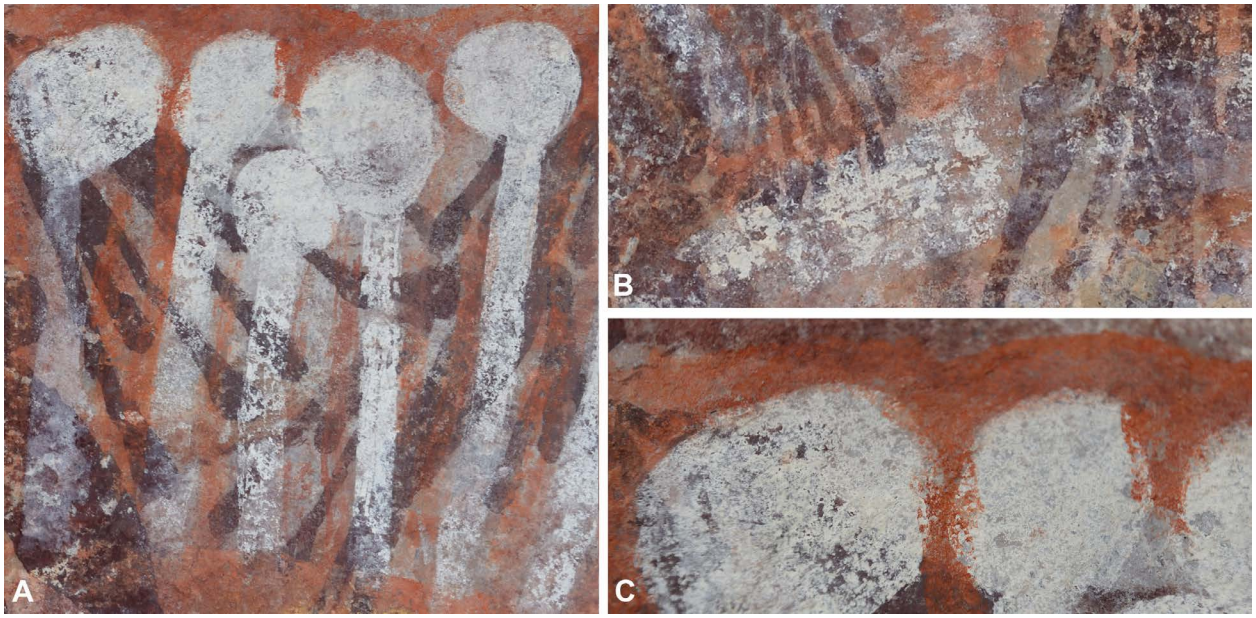


Figure 7.8. Details of Wanjina image (#138) showing the overlapping of the white infill by its red outline. A: Showing the lack of earlier red outline. B: Red overpainting of stem bases of headdress. C: Rapid application of thin red pigment cutting over the edge of the white pigment. (Photograph by Robert Gunn).

plate and holds two boomerangs with tassels by both hands. The smaller figure (#128) holds a pair of boomerangs in one hand and a tassel in the other, and has a third boomerang attached to its arm by a wrist ornament. Unlike the two Gwion from Art Panel A2 (#25 and #27), the pair in Art Panel A3 witnessed only minor battering: #127 on the knees and #128 on the ankles. Motifs #127 and #128, at 66cm and 62cm tall respectively, are also about half the size of the Art Panel A2 Gwion figures. Each pair of Gwion faces each other, the repeated configuration suggesting a thematic association.

A group of four Yowna Gwion are located at the lower right of the panel (motifs #132, #133, #134 and #136; Figures 7.4 and 7.10). These are all in poor condition, so that in none of them are all formal details clear.

Figure 7.9. Two Ngunuru Gwion (#127 and #128) underlying the Wanjina image (#138). A: Flash photograph. B: DStretch_lds10 enhancement. C: Photo-tracing. Motif #127 is 66cm tall. (Photograph by Robert Gunn).

Motif #134 appears to have been left incomplete as only the legs seem to be finished, and the upper body is delineated only by a single vertical line. In addition to the Gwion figures, there are a small number of other simple figures, most of which are in a fragmentary state. The two clearest are a 13cm-tall figure with outlined body and head and single line limbs (Figure 7.11), and an 18cm-tall stick figure (Figure 7.12).

Three large animals are depicted in the underlying layers of the panel. These are too faint and superposed to show detailed photographs, but their photo-tracings are shown in Figure 7.13. Motif #105 is a hopping macropod with a cross-hatched body design. It appears to be a wallaby given its horizontal body-alignment. It has a tip-to-tail length of 116cm. Motif #119 is an indeterminate animal that overlaps Art Panels A3 and A4 and is *c.* 90cm long. The motif appears either uncompleted or has suffered considerable damage. A third image that also overlaps with Art Panels A3 and A4 is that of an outlined snake (#120). The snake image is 272cm long and largely horizontal, but with the greater part of its body (right-hand end) illustrated on Art Panel A4 (Figure 8.7 below).

Horizontal rows of vertical bars occur on three art panels (Art Panels B, C and H) above and below Art Panel A. The bar rows occur in sets each with one to three organised rows, mostly around half a metre long. The largest occurs on Art Panel C, which has 84 bars in four rows (Figure 7.14). Only one of the bar rows (#124) is included in this art panel. It is positioned on the lintel above the main art area of Art Panel A3 (Figure 7.15). The image consists of a single row of 17 (surviving) bar elements. The other bar rows are recorded on Art Panel C (see below).

Dry pigment drawings are well represented on this panel, with ten examples apparent. Most are linear sets, but three depict striped ovoid shapes, one of which has a stem (Figure 7.16). Another is drawn over an exfoliated area that has damaged two adjacent hand stencils (Figure 7.17). Two adjacent parallel drawings, a red line (#150) and a black line (#151), are aligned vertically to each other. Both overlie the white pigment of the Wanjina motif (Figure 7.18).

The most recent image on this panel is a small, scratched simple design (#156), as evidenced by patterns of superposition. It was partly superpositioned on one of the red rays of the Wanjina headdress (#138a), whose shape it copies (Figure 7.6 and 7.19). The two most recent paintings on the panel are a fragment in yellow + white (#155) and the red infilling of a previously stencilled boomerang (#157), as also evidenced

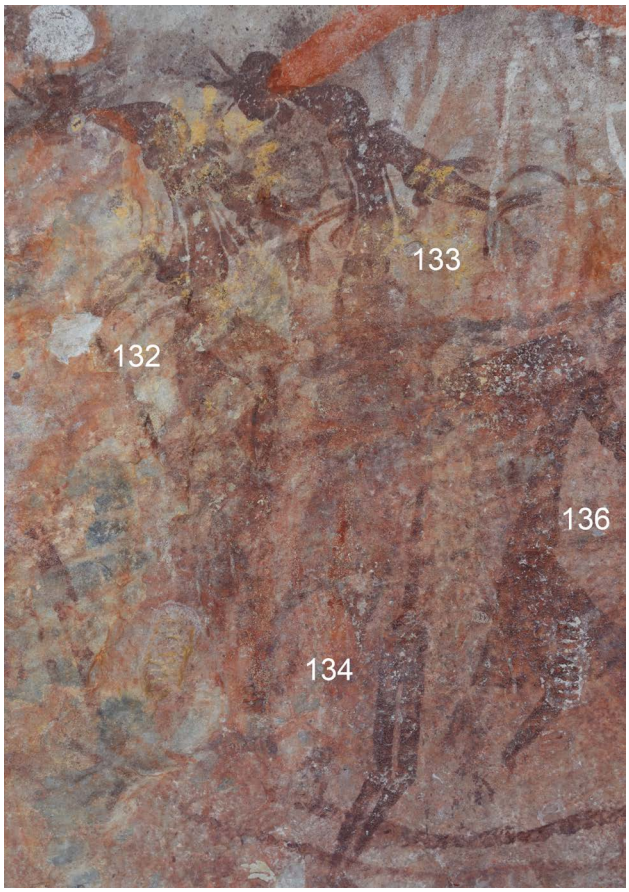


Figure 7.10. The four Yowna Gwion on Art Panel A3. Motif #136 length: 47cm. (Photograph by Robert Gunn).

Figure 7.11. Unusual, simplified anthropomorphic figure (#126). Motif length: 13cm. (Photograph by Robert Gunn).

Figure 7.12. Stick figure with solid head (#131). Motif length: 18cm. (Photograph by Robert Gunn).

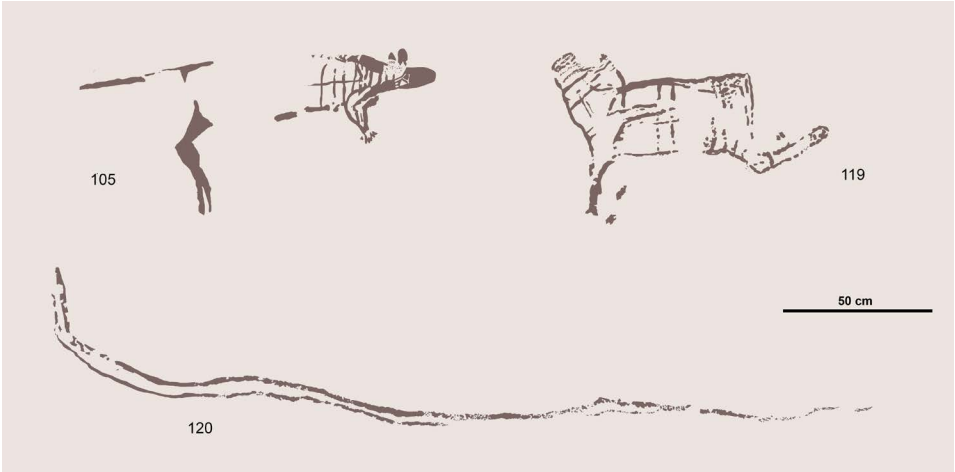


Figure 7.13. Photo-tracing of the large animals from the lower art layers. Motif #105: macropod; motif #119: unidentified (and possibly incomplete).

Figure 7.14. Bar rows (#478–#480) on Art Panel C (above Art Panel A2). Note the row of superimposed Gwion figures (#481–#484) with legs curving under the overhang of the panel. (Photograph by Ken Mulvaney).

Figure 7.15. Bar row (#124) above the main area of Art Panel A3. Motif width: 47cm. (Photograph by Leigh Douglas).

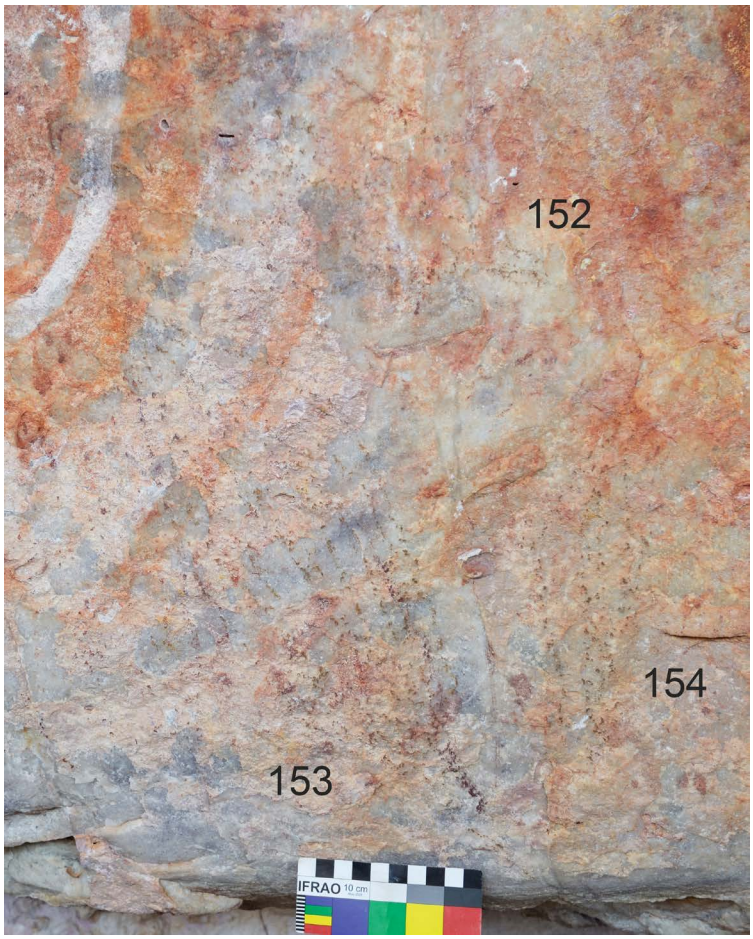


Figure 7.16. Three dry pigment drawings in dark red pigment. Motif #153 length: 39cm. (Photograph by Robert Gunn).

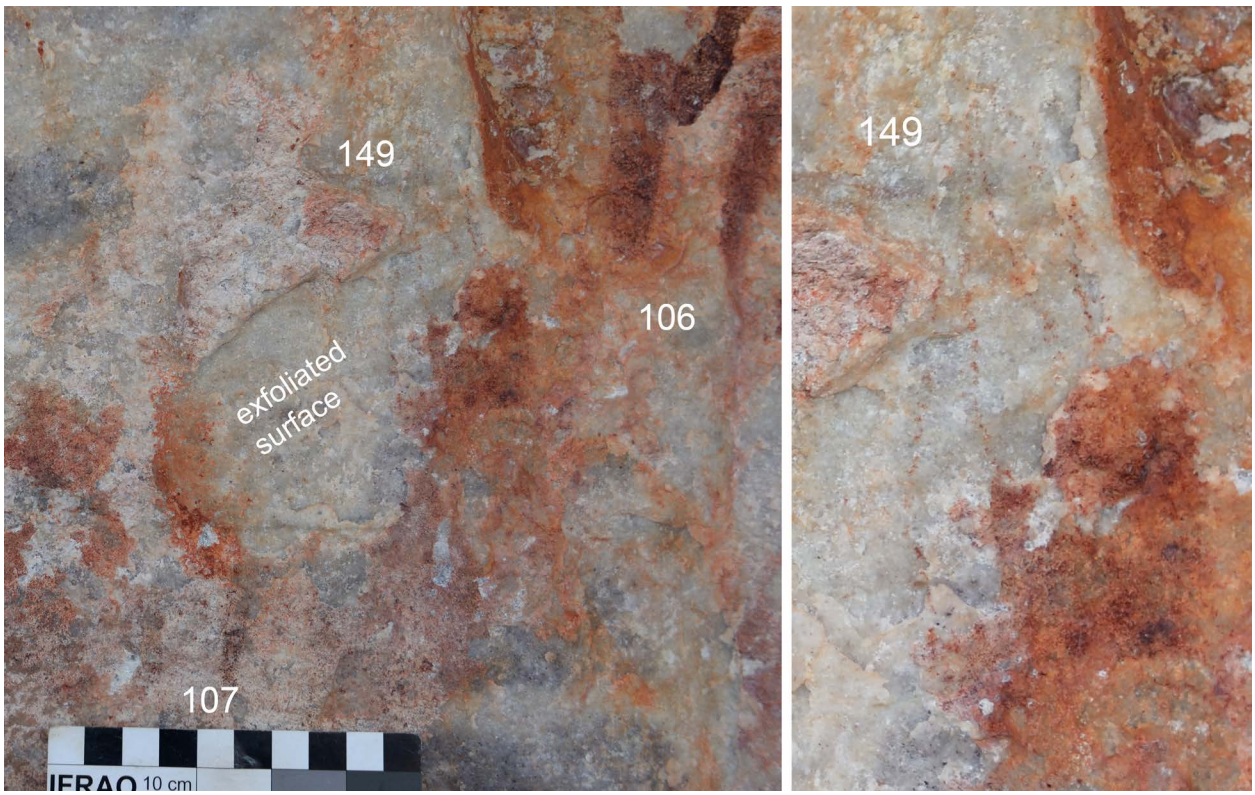


Figure 7.17. Red drawing (#149) over exfoliated surface that has damaged hand stencils #106 and #107. Detail of Red drawing (#149) at right. (Photographs by Robert Gunn).

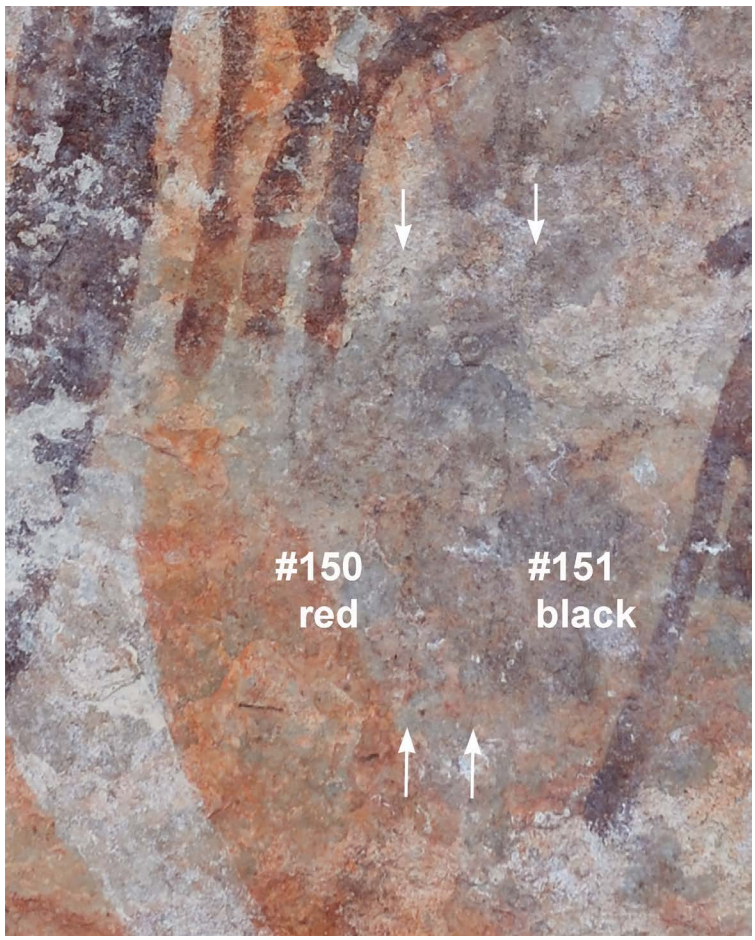


Figure 7.18. Red line drawing (#150) and parallel black line drawing (#151) overlying the white of the Wanjina image (#138). Neither line could be accurately measured. (Photograph by Robert Gunn).

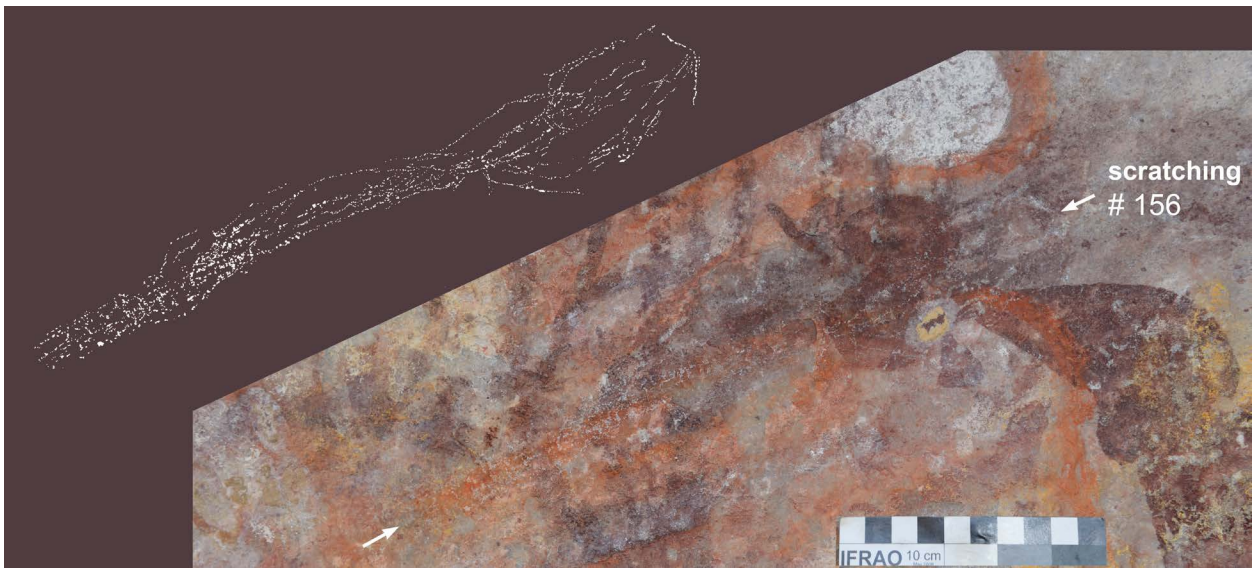


Figure 7.19. Scratched simple design (#156): photo-tracing and flash photograph. Motif length: 28cm. (Photograph by Robert Gunn).

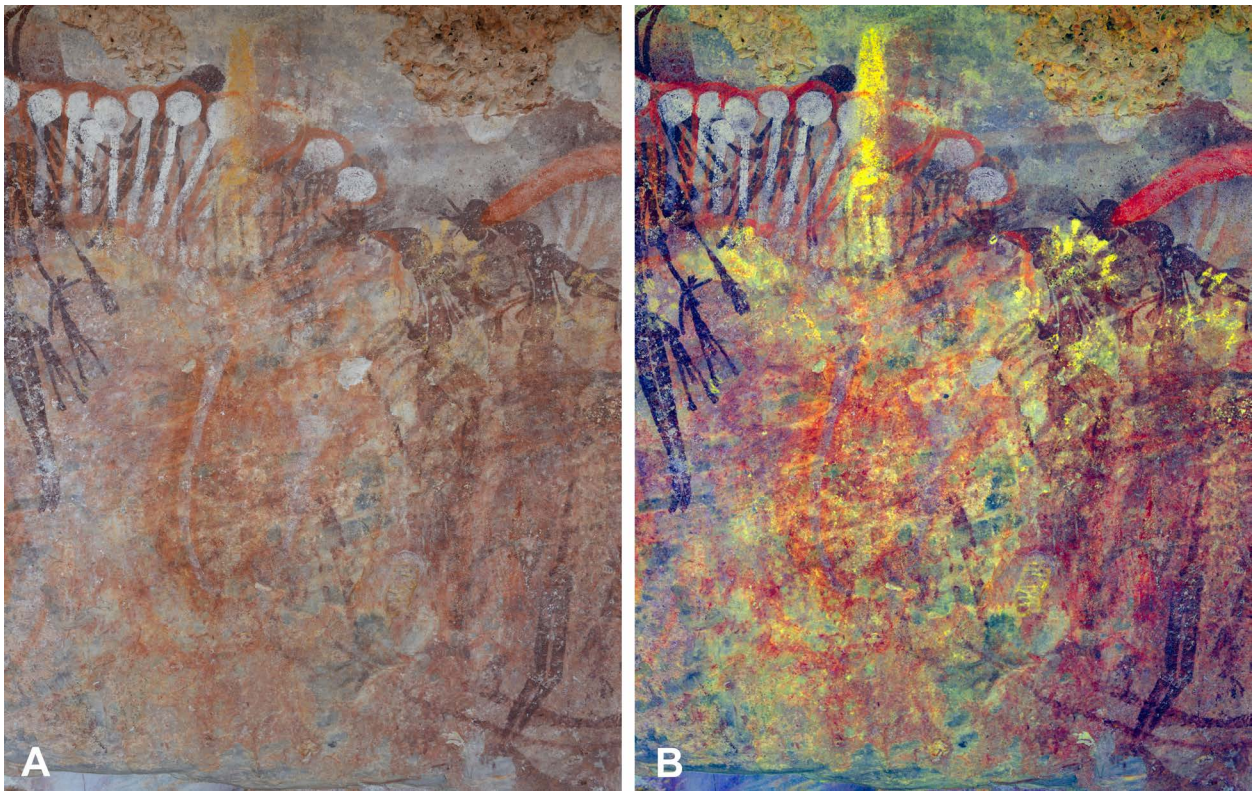


Figure 7.20. Yellow+white painting (#155): Flash photograph and DStretch_lds10. Height of yellow pigment area *c.* 110cm. (Photograph by Robert Gunn).

Figure 7.21. Red painting infill (#157) of dark red boomerang stencil (#115). Boomerang width: 44cm. (Photograph by Robert Gunn).

by superpositioning. Motif #155 is extremely deteriorated so that its original shape cannot be determined (Figures 7.6 and 7.20). This motif overlies the Wanjina (motifs #138 and #138a). On the basis of colour and condition, motif #157 appears to be contemporaneous with the red outlining of the Wanjina headdress (Figures 7.6 and 7.21).

Chapter 8
The Art of Art Panel A4

Art Panel A4 is 3.7m wide, 1.6m high and contains 111 motifs (Table 8.1; Figures 8.1–8.10; Appendix 1). It contains the dominant image of the entire site—the motif after which the shelter was named—the large (226 × 93cm), well-embellished image of a hopping macropod ('*manbur*'; Figure 8.1).

Art Panel A4 has been damaged by a large area of exfoliation in the panel's top-centre, and its surface integrity suffers from numerous mud-wasp nests which variably lie both under and over the art. There is minor exfoliation in the area of the art in the upper part of the art panel. The remnants of a single termite mud-tube run up the right-hand side of the panel.

The *manbur* motif (#177; Figure 8.11) is the most visually dominant motif in the shelter. It is positioned centrally within the most decorated part of the panel and is painted in a bright orange-red colour (Art Panels A3–A5; Figure 3.10). The macropod is depicted as if in mid-flight although, uncharacteristically for a macropod, the tail is short and droops downwards (cf. Archer *et al.* 1985). The position of its hind and fore legs is more suggestive of a running quadruped or punting macropod rather than of a hopping macropod, yet the hind leg and head are distinctively kangaroo-like. The downward tail position is uncharacteristic of any long-tailed animal in flight. These readings suggest that the *manbur* image, while considered a macropod today by Kwini Traditional Owners, may originally have been a composite Being or a macropod in multiple configurations or motions. The original motif (#177) was the focus of

Table 8.1. Art Panel A4, summary of the art by technique. 'Fragments' includes fragments in all techniques.

Characteristic	Number
Drawing	
Line	1
Line set	2
Oval	1
Simple design	2
Painting	
Dala Gwion (?)	1
Ngunuru Gwion	1
Yowna Gwion	4
Other Anthropomorph	4
Foot	1
Flying fox	1
Flying fox set	1
Flying fox ears	1
Macropod	3
Other mammal	1
Bird track	2
Bar	3
Bar pair	3
Bar row set	1
Complex design	2
Design simple	6
Disc	1

Characteristic	Number
Dot	2
Dot row	1
Line	6
Line pair	1
Line set	7
Barred oval	2
Ovoid shape	2
Boomerang	2
Area	1
Pounding	
Area	6
Pounding & Abrading	
Area	2
Scratching	
Line	1
Line set	2
Spray	
Standard hand stencil	21
Variant hand stencil	1
Object stencil (boomerang)	1
Total	**100**
Fragments	12

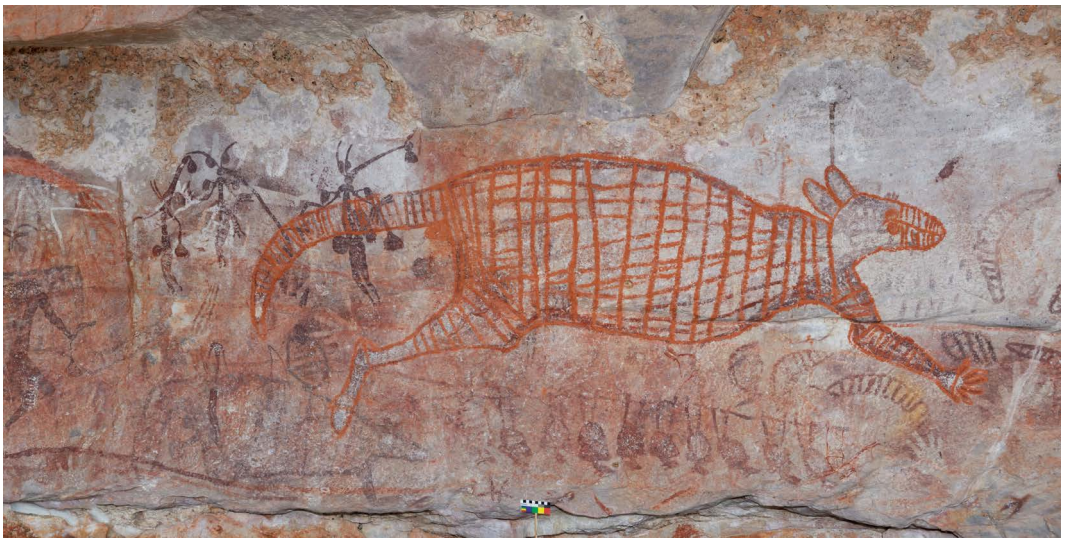


Figure 8.1. Art Panel A4, flash photograph. (Photograph by Robert Gunn).

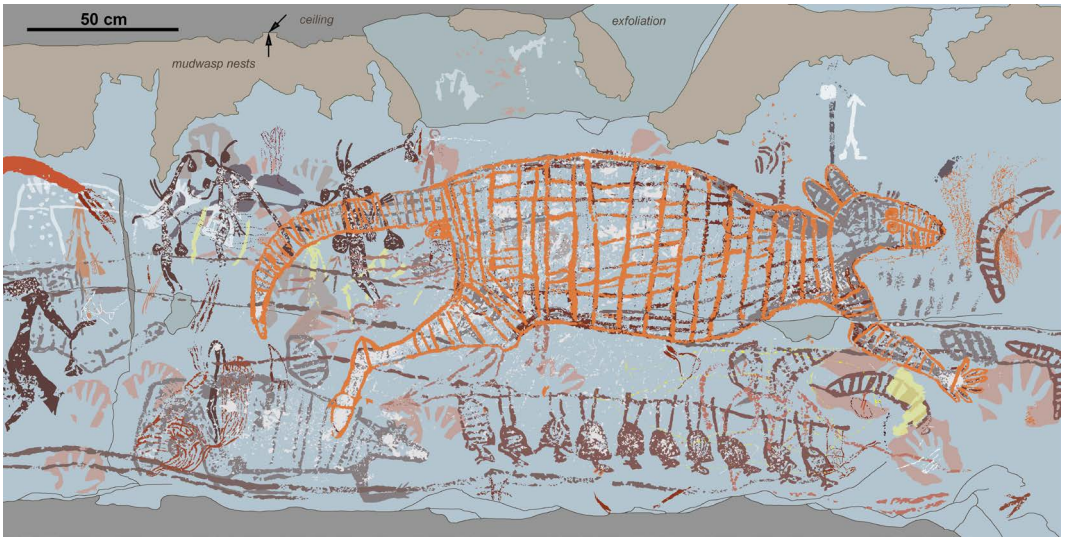


Figure 8.2. Art Panel A4, photo-tracing.

Figure 8.3. Art Panel A4, hand stencils in red and deep red pigments.

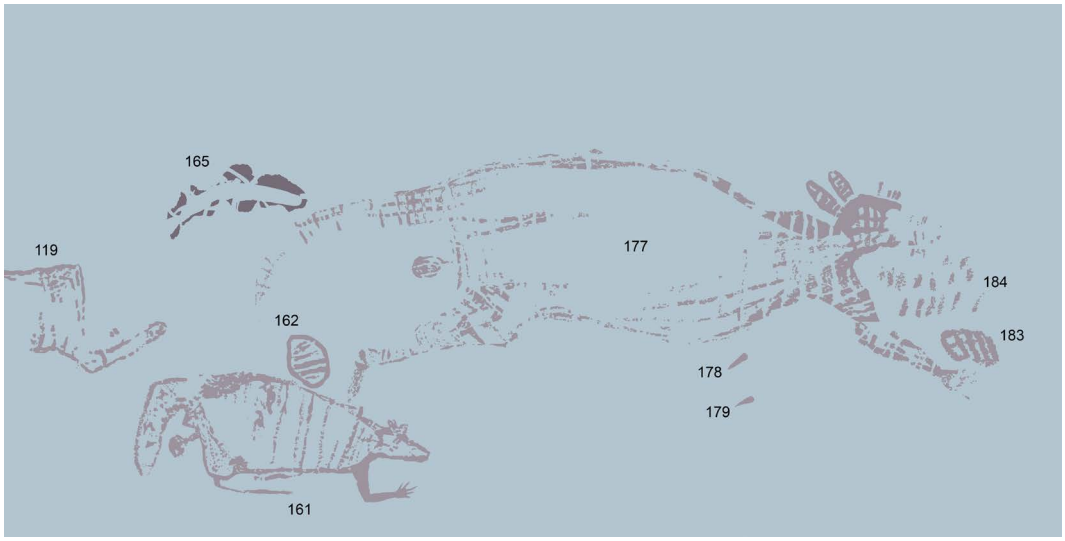


Figure 8.4. Art Panel A4, animal motifs from the Irregular Infill Animal Period, including the initial painting of the *manbur* motif, and a boomerang stencil (#165).

Figure 8.5. Art Panel A4, Yowna Gwion (#136, #188–#191), Ngununu Gwion (#187) and remnant Dalal Gwion (#192).

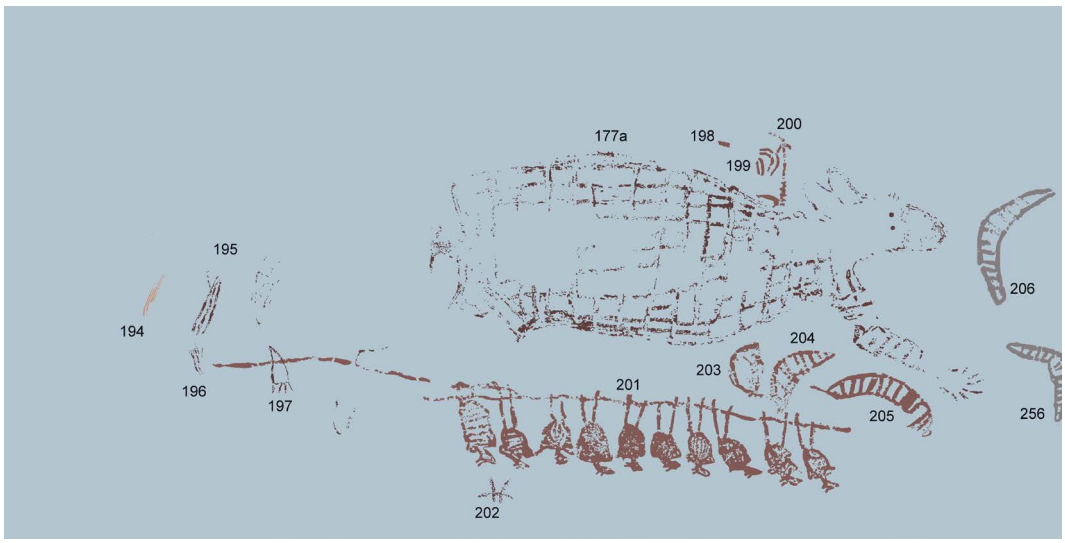


Figure 8.6. Art Panel A4, first re-painting of the *manbur* image (#177a), and a row of flying foxes hanging from a branch (#201) and other assorted motifs.

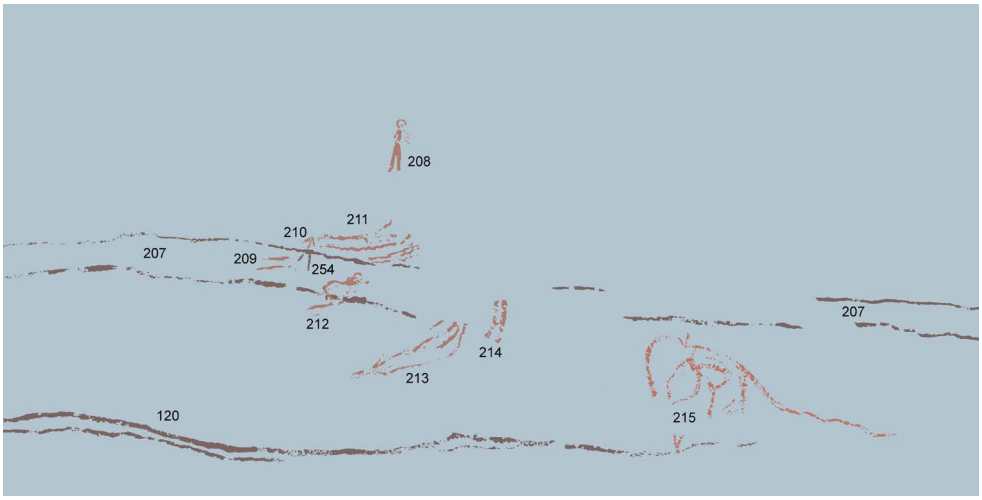


Figure 8.7. Art Panel A4, small anthropomorph (#208; 18cm tall), and various non-figurative motifs. Motif #120 is the tail-half of the snake that began on Art Panel A3.

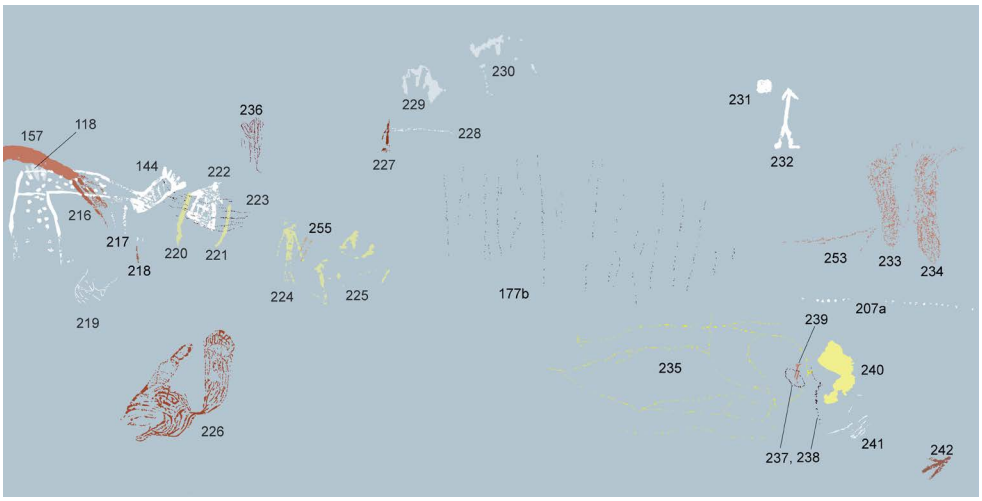


Figure 8.8. Art Panel A4, assorted motifs in a range of colours and techniques. The complexity of the design of motif #226 is unique at this site. The set of drawn black lines (#177b) are all across the body of the *manbur* motif and overlie motifs #177 and #177a.

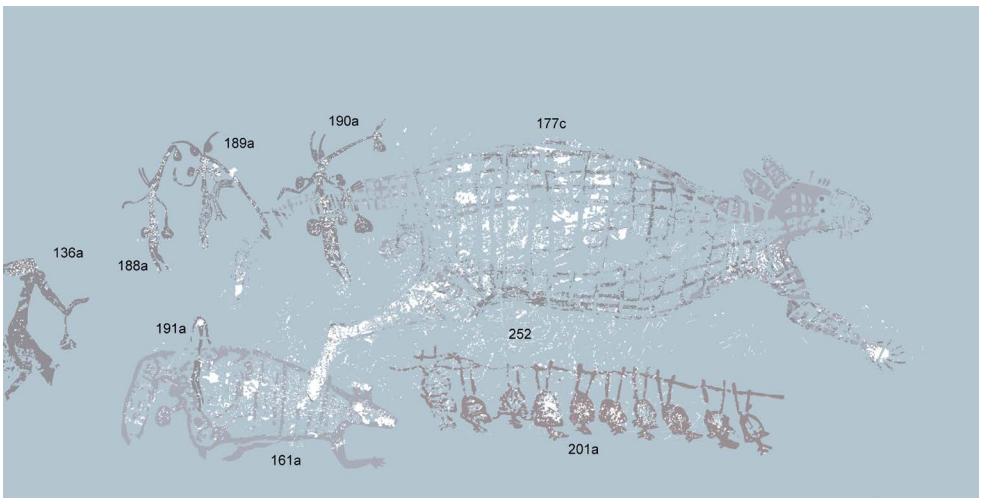


Figure 8.9. Art Panel A4, highlighting the battering (depicted in white) present on the art panel and the painted motifs impacted by the battering.

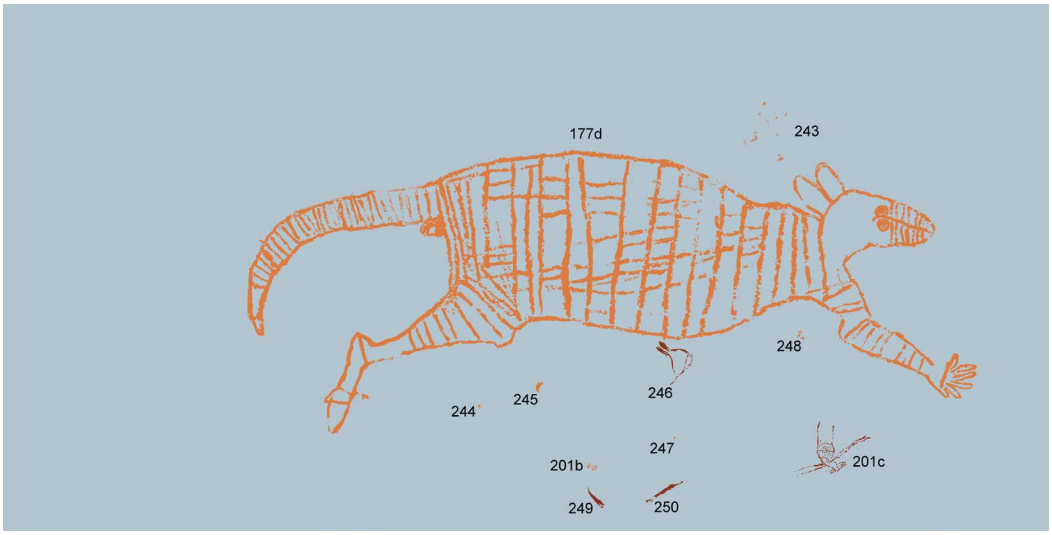


Figure 8.10. Art Panel A4, the uppermost (most recent) re-painting of the *manbur* motif, and other motifs that are also in very good condition. Motifs #201b and #201c are superimposed additions to the row of flying foxes (#201).

Figure 8.11. Photograph and photo-tracing of the *manbur* macropod. (Photograph by Robert Gunn).

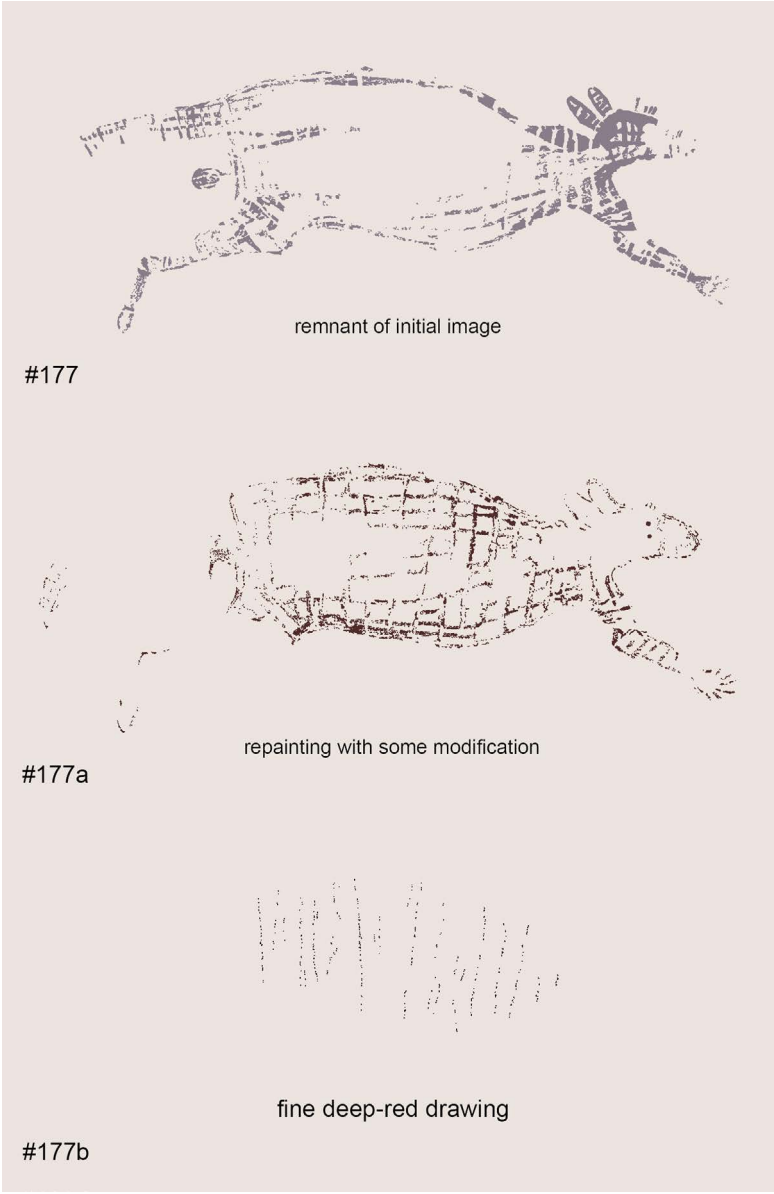


Figure 8.12. Initial *manbur* motif (#177) and the first two stages of subsequent engagement (#177a and #177b).

at least four later, systematic modifications or enhancements of one kind or another (Figures 8.11–8.18), indicating its recurrent (re-emergent or changing) significance over long periods of time. The original motif was painted in deep-red pigment. Subsequent engagements include:

- Repainting with slight modifications in another dark red (particularly the insertion of a pair of eyes on the head, and a penis over the earlier scrotum; #177a).
- The addition of parallel vertical, deep red dry pigment lines over the body (#177b).
- A degree of precise and selective battering highlighting the tip of the tail, hind foot and forepaw, with the hind leg and body receiving extensive lighter battering but avoiding the head, forearm and tail (#177c).
- Most recently, the repainting in thick orange-red paint has included minor variations of the body infill pattern, the highlighting of the eyes and the inclusion of a cloacal protuberance, ignoring the penis and scrotum of the earlier (underlying) versions (#177d). This repainting event appears to be one of the most recent paintings in the whole site (see Chapters 23 and 25).

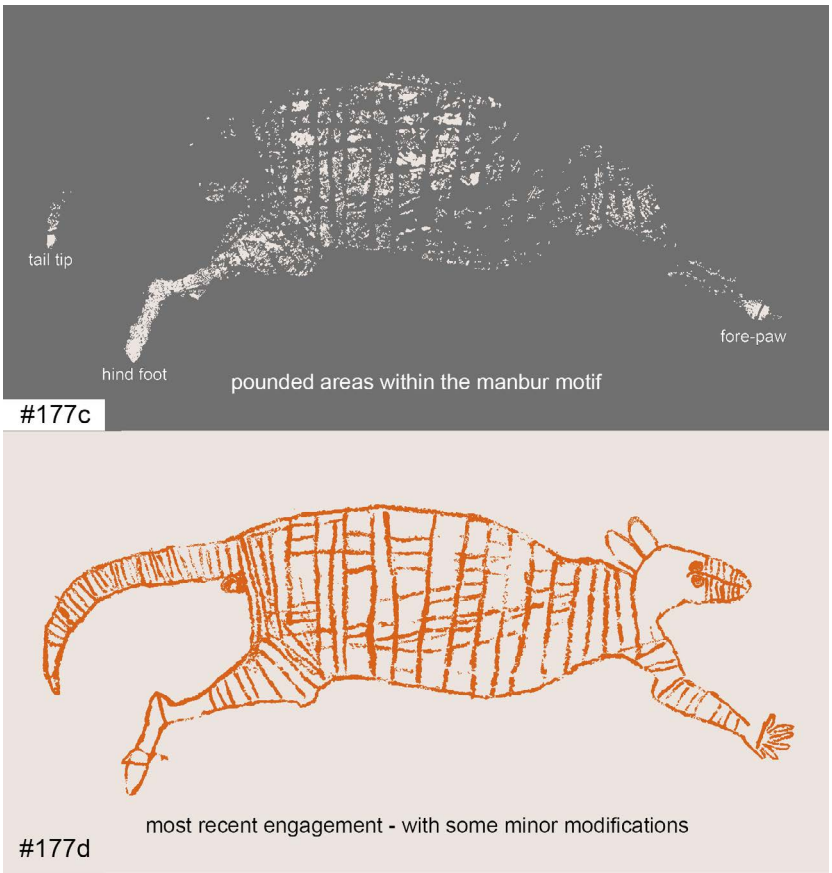


Figure 8.13. Final two modifications of the *manbur* motif (#177c and #177d).

Figure 8.14. *Manbur* motif highlighting aspects of re-engagement with the motif. (Photograph by Robert Gunn).

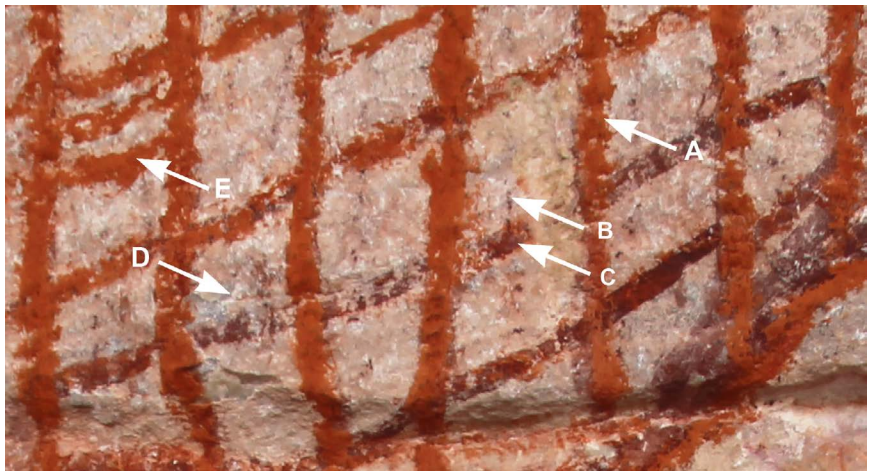


Figure 8.15. Detail of the body of the *manbur* motif highlighting aspects of re-engagement. A: Most recent repainting (#177d). B: Deep-red drawing (#177b). C: First repainting over original image (#177a). D: Battering (#177c). E: Addition to original body-infill design during the most recent repainting (#177d). (Photograph by Ken Mulvaney).

Figure 8.16. The concentrated battering of the tip of the tail of the *manbur* motif (#177), which was subsequently over-painted by motif #177d. (Photograph by Robert Gunn).

Figure 8.17. Detail of the head of the *manbur* motif, highlighting the earlier smaller solid eyes (arrowed) beneath the more recent larger ovals. (Photograph by Robert Gunn).

The uppermost pigment layer on the *manbur* figure was painted in orange-red pigment. It includes a revised infill pattern and highlighted eyes.

The *manbur* motif (#177) is visually related to a similar macropod head (#406) on the adjacent panel (see Art Panel A5, Chapter 9). The two images face one another and both have been repainted, most recently in the same orange-red pigment that links them as contemporaneous (Figure 8.19).

Five Yowna Gwion occur on this panel: motifs #136 and #188–#191 (Figure 8.5). Motif #136 has already been discussed with Art Panel A3 (Chapter 7). It has a heavier body and limbs than those on the other four figures. Motifs #188–#190 form a compositional trio (Figure 8.20). All are in the same pigment colour and suffer similar levels of deterioration, suggesting contemporaneity. All are well decorated, face the same direction and carry a single boomerang. However, none of the accoutrements of the three are identical, with the largest figure (#190) being the most decorated. Together, they appear to form a scene comprised of three different individuals of a common affiliation.

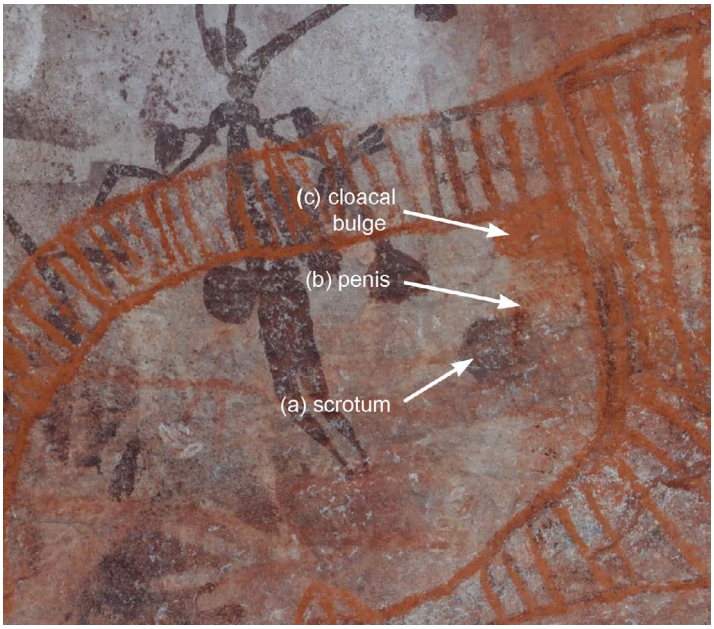


Figure 8.18. Modifications of the sex attributes of the *manbur* motif over time. (Photograph by Robert Gunn).

Figure 8.19. The spatial relationship between the *manbur* motif (#177) on Art Panel A4 and adjacent macropod head (#406) on Art Panel A5. (Photograph by Robert Gunn).

Motif #191 is an uncompleted Gwion, lacking a head, waist, arms or ornaments (Figure 8.21). Its identification as a Yowna Gwion rests on its thin, parallel legs that are bent at the knees, as with Welch's Bent-Knee figures (Welch 2016: 32–39). The lack of a head and other decorative attire cannot be attributed to weathering, so the motif gives further insight into the way such Gwion images were painted. As Walsh also found elsewhere in the Kimberley (2000: 36–38), there is no indication here that a preliminary drawing or painted outline was produced to guide the final painting. Why this and other Gwion at other sites were left incomplete remains an intriguing question, although the deterioration of a second, less enduring colour, such as white or yellow, may well explain the missing parts.

Art Panel A4 also contains a single Ngununu Gwion (#187; Figure 8.22). The image is very faint, dark red in colour, and partially obscured by overlying motifs. The figure has arm bands at its elbows, a single arm tassel, and holds a pair of boomerangs in its right hand and a dilly-bag and other objects in its left. Motif #192 (Figure 8.23) is a very poorly preserved and partially overpainted image that was most likely a Dalal

Figure 8.20. Yowna Gwion figures (#188–#190). Flash photograph and photo-tracing. (Photograph by Robert Gunn).

Figure 8.21. Partial (uncompleted?) Yowna Gwion (#191; 32cm tall). Photograph, Dstretch_lab10 enhancement, and photo-tracing. (Photograph by Robert Gunn).

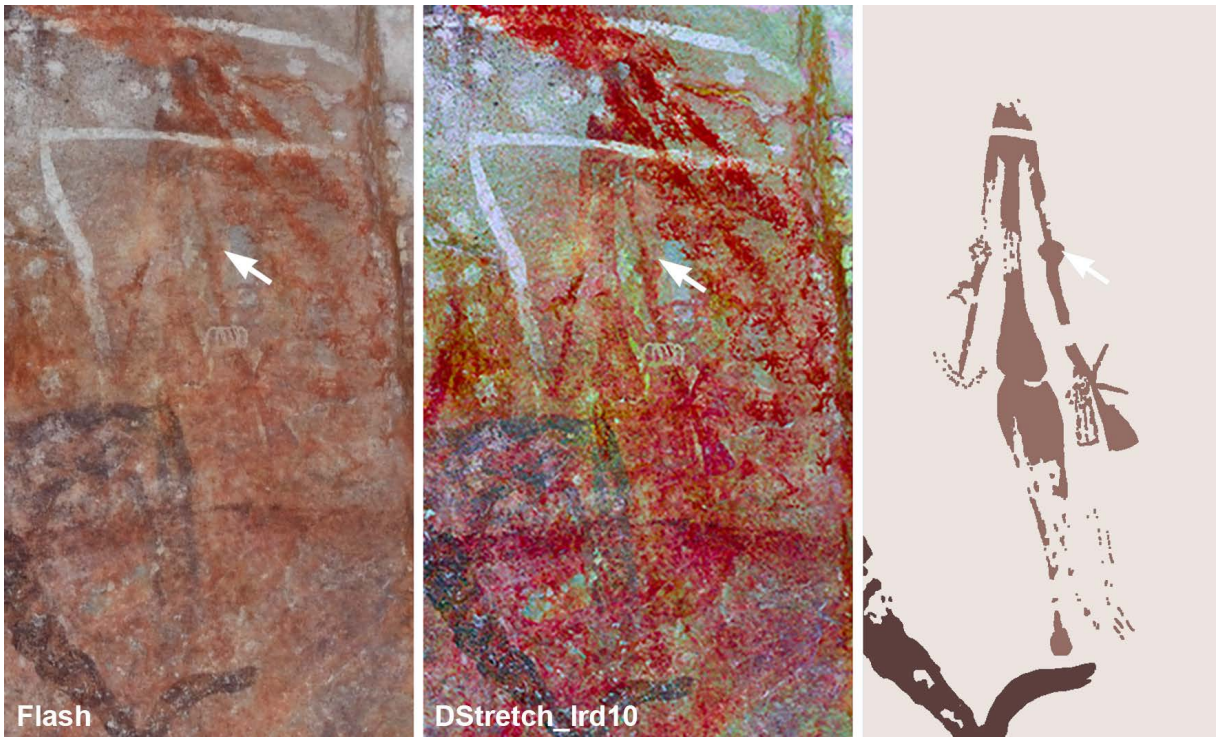


Figure 8.22. Faint Ngunuru Gwion (#187; 45cm tall). Photograph, Dstretch_lrd10 enhancement, and photo-tracing. (Photograph by Robert Gunn).

Figure 8.23. Possible remnant Dalal Gwion (#192; *c.* 30cm tall). (Photograph by Robert Gunn).

Figure 8.24. Crescent-shaped boomerang stencil with supporting finger stencil at right (A). Motif #165; 50 × 4.5cm. (Photograph by Robert Gunn).

Figure 8.25. Indeterminate mammal (#161; 96cm long). (Photograph by Robert Gunn).

Gwion. While it has superficial similarities with motif #3 on Art Panel A1 (Figure 5.7; cf. Walsh 2000: 306), there are not enough attributes to make a firm conclusion on its motif type.

A well-defined mulberry-coloured stencil of a crescent boomerang underlies the three Gwion figures (#188–#190). This stencil also includes one of the supporting fingers at right (Figure 8.24).

The large snake-like motif and indeterminate animal (#120 and #119) are discussed with Art Panel A3 (Figure 7.13). Art Panel A4 also has another large animal motif (#161; Figure 8.25). It has the body, head, forelimb and prominent genitalia of a macropod. Although it has a downward curving tail similar to that of the *manbur* motif, here it is exceptionally thicker. The lack of a neck and hindleg, however, makes a taxonomic identification speculative, for, as with the *manbur* motif, it may also be a composite figure (such as a small macropod with an exceptionally thick tail). We need to keep in mind the generally figurative, but not naturalistic, nature of depictions across this region (cf. Walsh 2000).

Beneath the *manbur* motif (#177) is a row of flying foxes hanging in a conventional resting manner upside-down from a branch-like line (#201; Figure 8.2, 8.26–8.29). The whole design is 202cm long. The initial image (#201) contains ten flying foxes all facing to the right, with the individual flying foxes measuring (from left to right) 29cm, 27cm, 24cm, 30cm, 27cm, 25cm, 25cm, 24cm, 26cm, 25cm and 17cm in height. Each flying fox is depicted in a similar but not identical manner: all heads are shaped slightly differently and, while the body patterns are difficult to discern due to later battering, three appear to be decorated with horizontal lines, three with vertical stripes, one with a hatched pattern, and three with solid infill. The flying fox at the far left has a body length about twice that of the others, but shorter legs, keeping it within the general size range of the others. At a later stage, all the flying foxes were battered to varying degrees (#201a), with the greatest amount of battering positioned on the body of the tallest of the images, fourth from the left (30cm; Figure 8.27). This fourth figure was further decorated again at a later date, when its ears were outlined in a fresh-looking orange-red pigment akin in every way to that of the *manbur* (#201b; Figure 8.28). At another time, an eleventh flying fox was added to the right end of the row (#201c; 17cm). This later addition is superposed over motif #201 (Figures 8.27 and 8.29). This added image (#201c) was painted with a finer brush than the earlier images, giving it a totally different visual character to the

Figure 8.26. Row of flying foxes hanging from branch-like line (#201; photograph and photo-tracing). (Photograph by Robert Gunn).

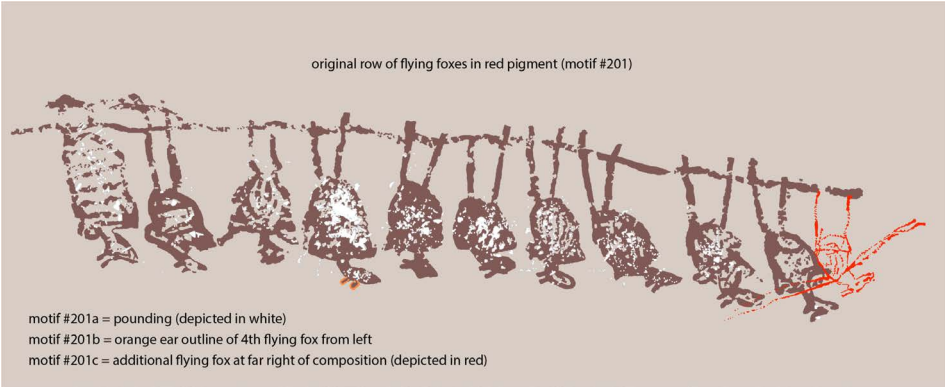


Figure 8.27. Detail of motif #201 (flying fox) showing subsequent modifications to the original motif (#201b and #201c).

Figure 8.28. Later outlining with orange-red pigment (#201b) of the ears of one of the flying foxes. Note also the battering on the head, and brush marks from the nose. (Photograph by Robert Gunn).

Figure 8.29. Detail of the flying fox (#201c; 17cm tall) added to the row of flying foxes (#201) at a later date. (Photograph by Robert Gunn).

Figure 8.30. Unusual red painted complex design (#226; 48cm long). (Photograph by Robert Gunn).

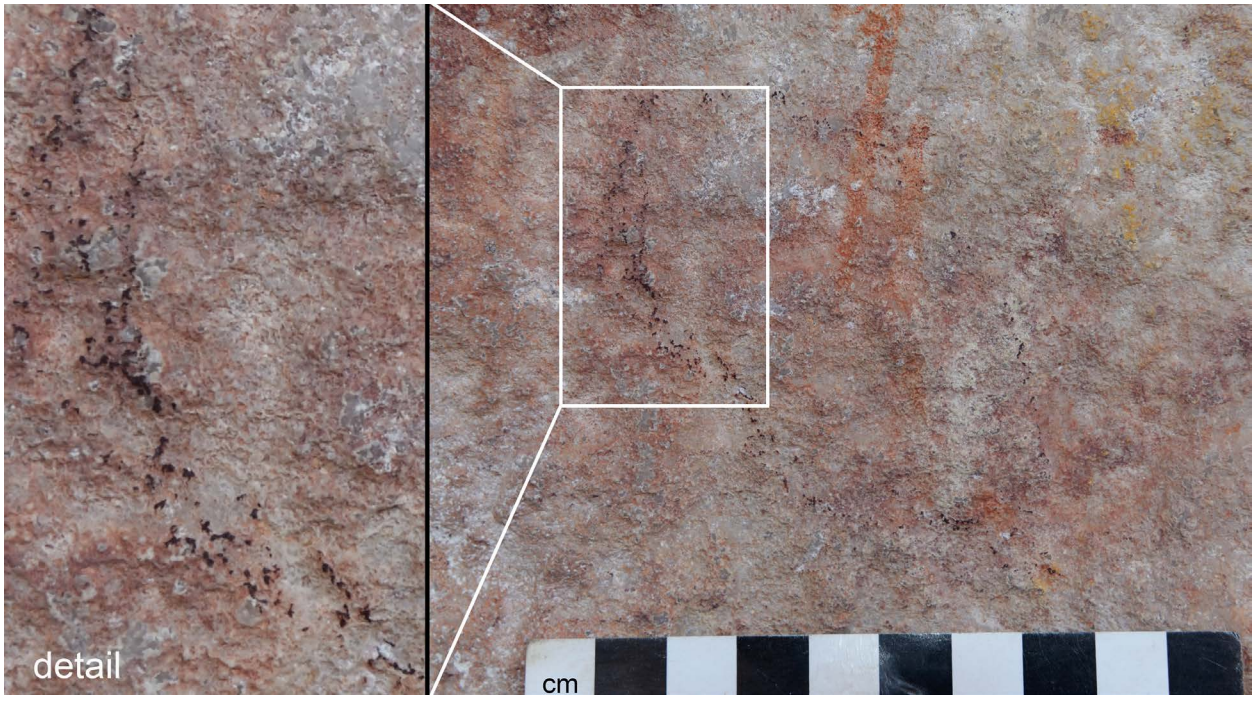


Figure 8.31. Oval-shaped drawing in dark red pigment (#237; 8cm long). (Photograph by Robert Gunn).

others in the row. This more recent motif is decorated with vertical stripes on its body but, unlike any of the earlier motifs, also has two lone lines passing across its shoulders. These lines are painted with a deliberately wavy stroke and are therefore unlikely to represent spears. One line crosses over the flying fox, while the other is broken at the image, suggesting either it passes behind it or is joined to the image. This most recent flying fox (#201c) is painted in a similar manner and colour to motif #246 (Figure 8.10), a non-figurative design or possibly an unfinished animal. The two motifs appear to be contemporaneous, although their state of preservation suggest that they are not quite as recent as the adjacent orange-red motifs mentioned above. Art Panel A4 also has a number of painted non-figurative motifs. Most are simple linear forms, but one, motif #226, is an unusually intricate design (Figure 8.30), the only such one

Figure 8.32. Anthropomorphic figure with raised arms drawn in dark-red pigment (#236; 19cm tall). (Photograph by Robert Gunn).

at Pundawar Manbur. Although plant-like in form, it does not have any particular characteristics that allow its classification as a type of plant.

Dry pigment drawings occur across the panel, some of which appear to be more recent than others. While most are small simple non-figurative motifs (e.g., Figure 8.31), three stand out for their contents rather than their clarity. Motif #236 appears to be an outlined anthropomorph with arms raised and decorated with striped infill (Figure 8.32). The lower half of the figure is no longer apparent. Motifs #233 and #234 form a pair of large, solid ovoid shapes with a tang extending at the upper right of each (Figure 8.33). Although weathered, their forms are still distinct, but whether they represent a pair of objects, animal tracks or an abstract concept cannot be determined. The third of these unusual drawings is a large, non-figurative design (#235; *c.* 90 × 50cm). It was drawn in pale yellow pigment and, because of its pale hue and weathered condition, is difficult to notice amongst the rich graphic activity of its many underlying and more visible motifs (Figure 8.34).

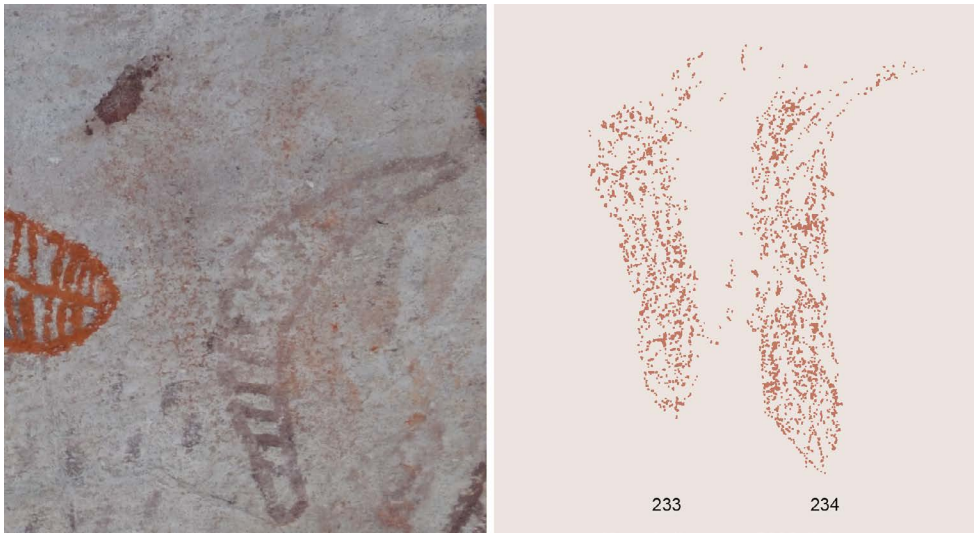


Figure 8.33. Solid ovoid designs or implements in orange-red pigment. Motifs #233 and #234 (32cm and 35cm long, respectively). (Photograph by Robert Gunn).

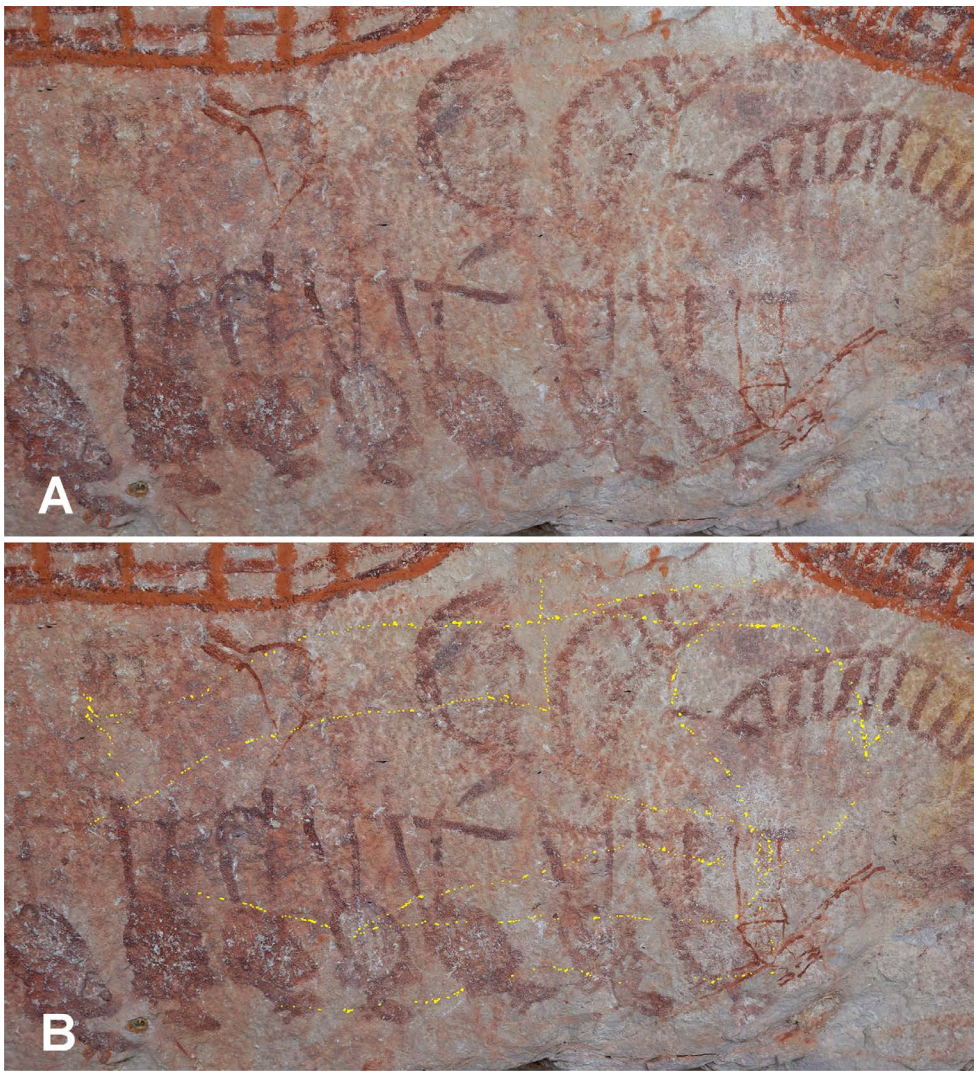


Figure 8.34. Faint yellow drawing (#226) overlying all the other motifs it touches. It is thus the most recent motif on this part of the art panel. A: Flash photograph of motif #226. B: Motif #226 highlighted by tracing on the photograph. (Photograph by Robert Gunn).

Chapter 9
The Art of Art Panel A5

Art Panel A5 is 5.1m wide, 2.0m high and contains 179 motifs (Table 9.1; Figure 9.1–9.11; Appendix 1). It is the largest sub-panel of the five in Art Panel A area-wise, and has the greatest number of motifs, but its overall art density is slightly lower than on the adjacent, smaller Art Panel A4 (Table A.2). Art Panel A5 has witnessed only minor exfoliation.

Visually, Art Panel A5 is dominated by motifs on its left-hand side, including a repainted kangaroo's head (#406) on the upper left, a pair of horizontal hand + arm stencils (#265 and #269), a large unidentified animal (possum or lizard? #318), and a pair of dark, mulberry-coloured Yowna Gwion (#349 and #350) (Figure 9.1). Many of the motifs in the lower right of the panel are indistinct, most notably a large red anthropomorph (#384) that has been partially, and possibly intentionally, smeared.

The repainted kangaroo head (#406) was initially painted in mulberry red but then retouched and altered in orange-red (#406a), ignoring the previous solid shoulder shape and adding a pair of eyes in the process (Figure 9.12). At the same time as the retouching, or soon after, the remarked ears were erased to form a

Table 9.1. Art Panel A5, summary of the art by technique. 'Fragments' includes fragments in all techniques.

Characteristic	Number
Abraded	
Area	3
Drawing	
Area	2
Catfish	1
Longtom	1
Other anthropomorph	1
Unidentified object	1
Flicking	
Band	11
Painting	
Ngununu Gwion	4
Yowna Gwion	3
Unidentified Gwion	1
Other anthropomorph	4
Macropod	1
Macropod head	3
Macropod track	1
Bandicoot	1
Unidentified fauna	2
Unidentified fish	1
Wading bird	1
Unidentified plant	1
Grass seed-head	1
Vine	1
Yam	1
Arc pair	3

Characteristic	Number
Bar	3
Bar set	1
Bar row	1
Bar row set	1
Apex design	5
Complex design	5
Simple design	6
Disc	2
Line	1
Oval	1
Paint dribbles	1
Smear	4
Boomerang	2
Other objects	3
Pounding	
Area	8
Pounding & Scratching	
Area	3
Printing	
Grass	16
Spray	
Standard hand stencil	46
Variant hand stencil	1
Object stencil (boomerang)	1
Total	**160**
Fragments	20

Figure 9.1. Art Panel A5, photograph. (Photograph by Robert Gunn).

Figure 9.2. Art Panel A5, photo-tracing.

Figure 9.3. Art Panel A5, red and dark red hand stencils, and fish motif (#271) from the Irregular Infill Animal Period.

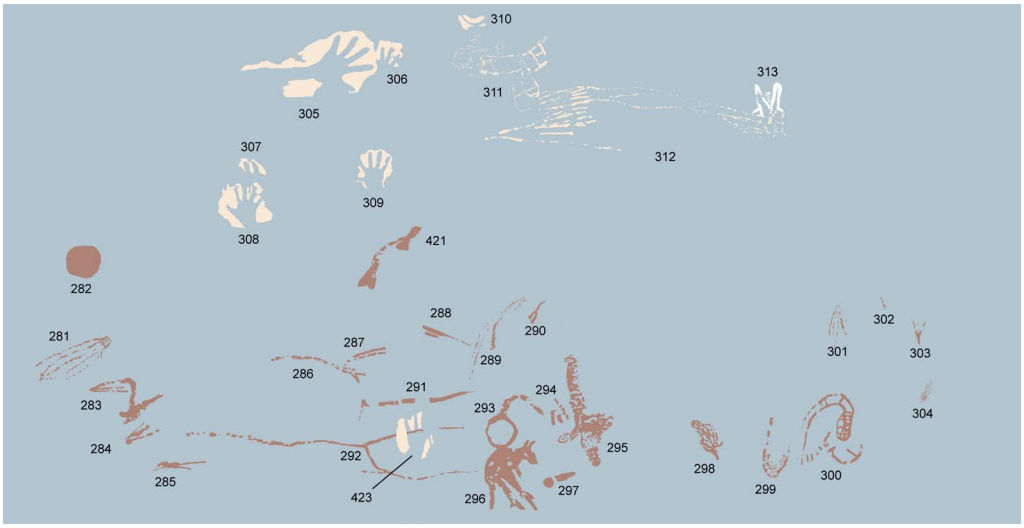


Figure 9.4. Art Panel A5, white hand stencils and painting, along with an assortment of red paintings.

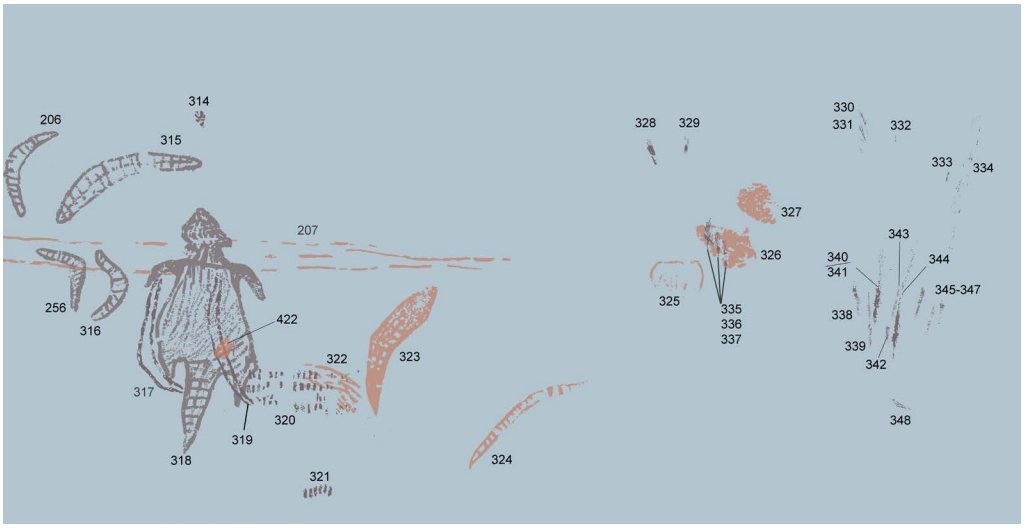


Figure 9.5. Art Panel A5, large unidentified animal (#318), grass prints (#314, #328–#337), and other assorted red paintings.

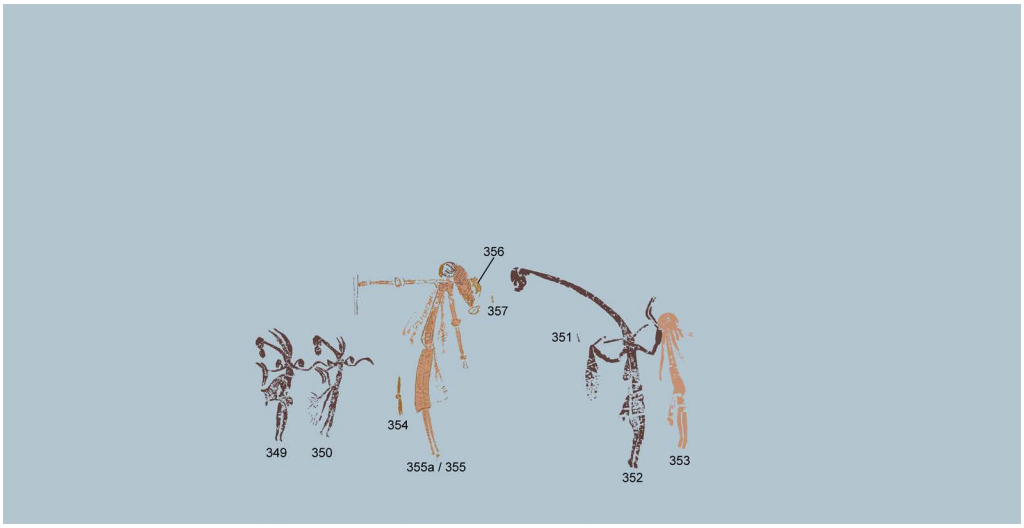


Figure 9.6. Art Panel A5, Ngununu Gwion (#353 and #355) and Yowna Gwion (#349, #350 and #352).

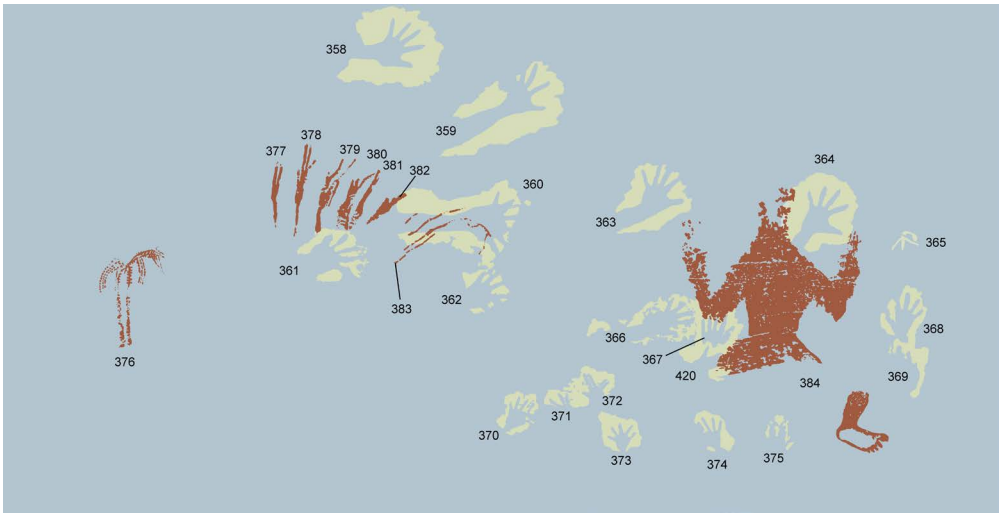


Figure 9.7. Art Panel A5, yellow hand stencils, red anthropomorph (#384), grass prints (#377–#383) and an unusual tree-like design (#376). Note also the small half-anthropomorph with headdress (#365), which may be an unfinished Gwion figure.

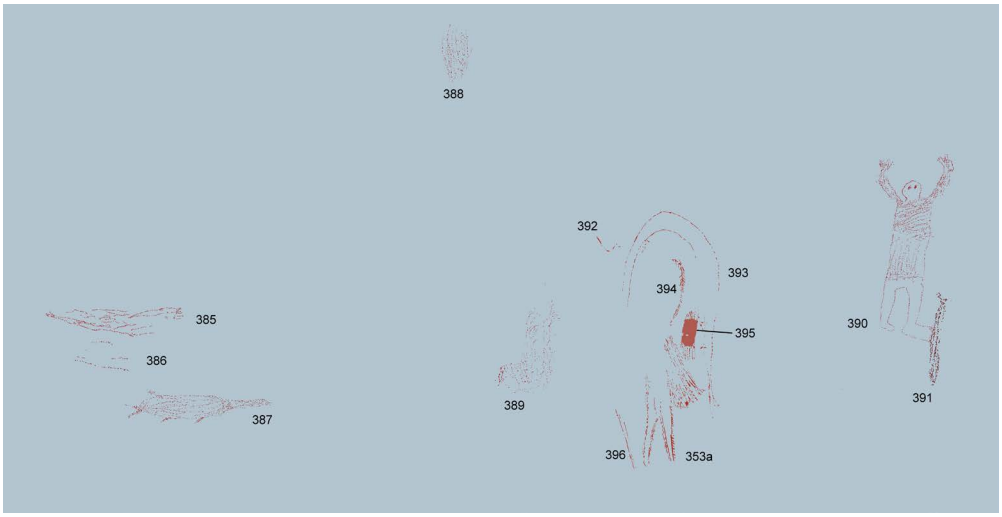


Figure 9.8. Art Panel A5, red drawings including a large anthropomorph (#390; 76cm tall) and two fish motifs (#385 and #386), along with a cluster of finely painted motifs (#392–#396).

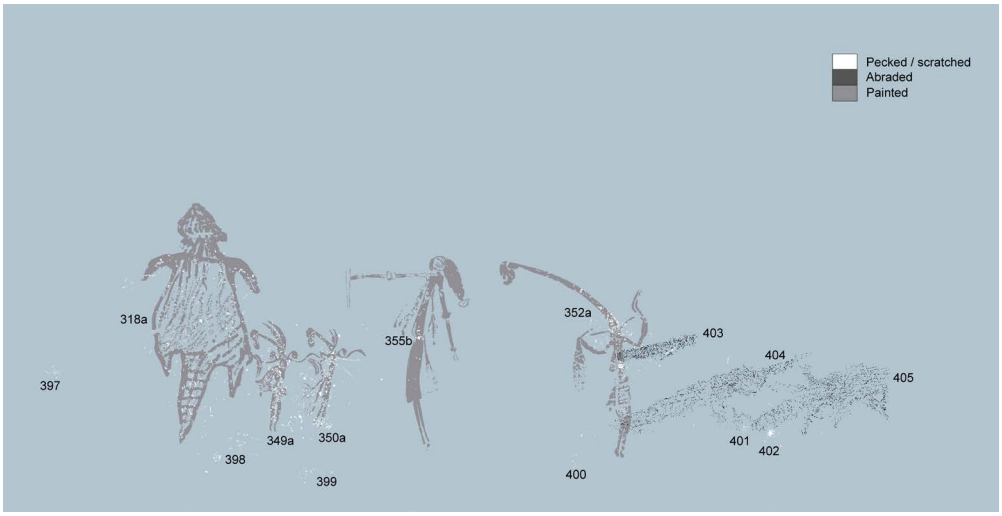


Figure 9.9. Art Panel A5, highlighting the battering (#318a, #349a, #350a, #352a, #355b, #397–#402), abraded motifs (#403–#405) and painted motifs (shown in grey; #318, #349, #350, #352, #355) impacted by the battering.

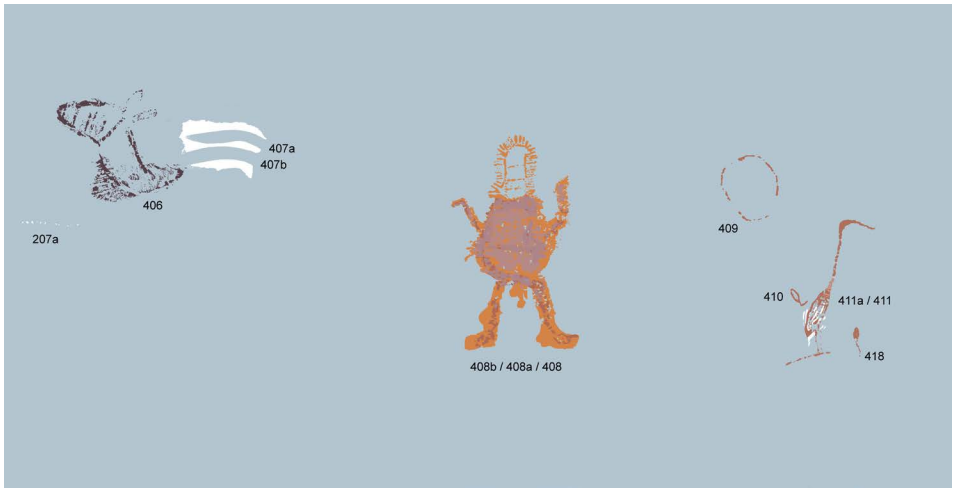


Figure 9.10. Art Panel A5, large anthropomorph painted in orange-red, later embellished with brown-red highlight, after which the body was again infilled with purple-red pigment (#408; 89cm tall). Motif #406 is a macropod head similar in shape and colour to that on the *manbur* motif on Art Panel A4. Art Panel A5 also contains a pair of white boomerang stencils (#407a and #407b) and a red painting of a waterbird-shaped motif that has been subsequently embellished with white (#411 and #411a, respectively), and other motifs.

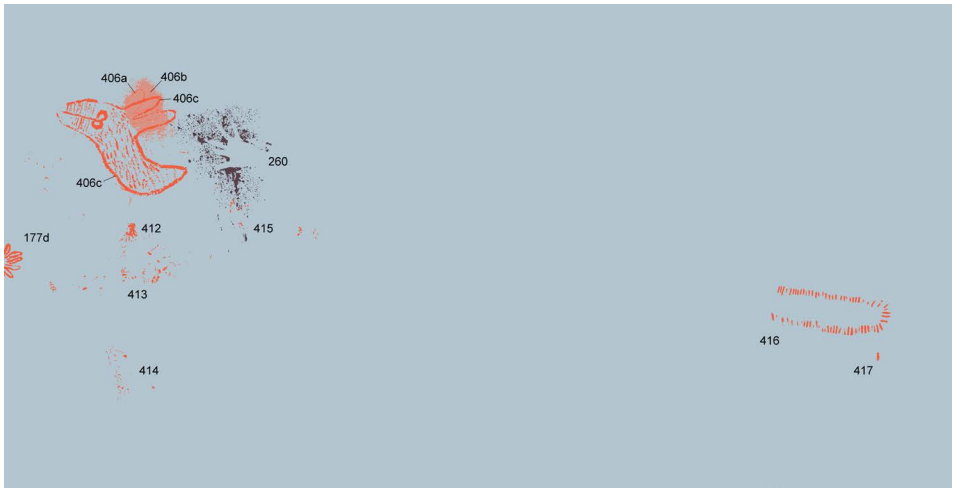


Figure 9.11. Art Panel A5, the repainted macropod head at the upper-left corner of the panel reveals the repainting episodes of motif #406 (see Figures 9.10 and 9.12), with #406a being the first repainting event and #406c the most recent. The orange-red-coloured motifs here are all in very good condition and among the most recent on this art panel.

smear (#406b) and the ears were realigned to sit further back on the head (#406c). It is the stark contrast between the initial dark mulberry colour and the freshness of the orange-red pigment that give this image such prominence on the panel. The two-colour changes parallel the sequence of changes that occurred on the adjacent *manbur* motif (#177), as do the forms of the two orange-red heads (Figure 8.19).

The pair of right hand + arm stencils is stacked vertically, with one (#265) above the other (#269) (Figure 9.13). It is their symmetry that makes the pair stand out from the many other hand stencils on this panel. Although the upper stencil (#265) is better preserved than the lower, both were produced using the same colour pigment. Their similarity of size, colour, positioning and general execution indicate that they were

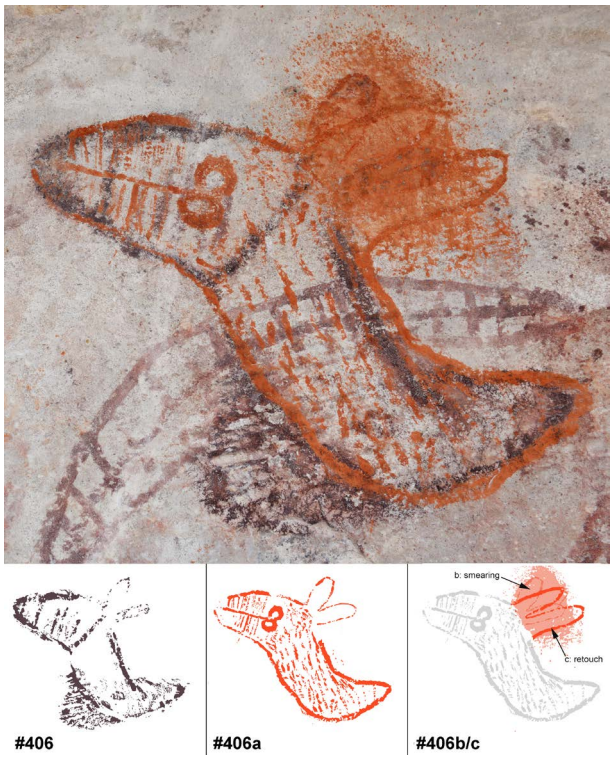


Figure 9.12. Sequence of modification of motif #406 (#406, #406a and #406c). (Photograph by Robert Gunn).

Figure 9.13. Two parallel hand+arm stencils (#265 and #269). (Photograph by Robert Gunn).

both produced by the same person, although the fingers on the two hands are too deteriorated to permit metrical comparison. This pair of stencils does not occur in isolation but, based on relative preservation and superpositioning, echoes an earlier red left hand + arm stencil (#266), and it is again later repeated by another pair of left hand + arm stencils in yellow (#259 and #260) (Figure 9.14).

The unidentified animal (#318) is prominent because of its size (97 × 30cm), patterned infill and relatively clear background (Figure 9.1). The animal is in a splayed plan view, with heavily infilled head and forearms, angled striped torso infill and a cross-hatched tail (Figure 9.15).

Despite their small size compared to other anthropomorphs on this panel, the pair of Yowna Gwion (#349 and #350) are conspicuous because of their dark colours and intricate designs (Figures 9.1 and 9.16). Pigment colour, weathering and positioning adjacent to each other indicate that the pair are

Figure 9.14. Grouping of hand+arm stencils over time. The initial red hand+arm stencil (#266) underlies the dark red stencil (#265), which is one of a parallel pair with motif #269. A yellow hand stencil (#361), which overlies the dark red stencil (#265), is contemporaneous with the parallel pair of yellow hand+arm stencils (#359 and #360), as determined by similar states of preservation. Hence the yellow hand+arm pair are the most recent in this sequence, given that the yellow superposes both the dark red and red stencils.

Figure 9.15. Large unidentified animal (#318). (Photograph by Robert Gunn).

contemporaneous and form a unified composition. Both Gwion figures face to the right, have elongated headdresses with end and tassel pom-poms and shoulder decorations, and each holds a single boomerang in its left hand. The two figures, however, also display some differences in their paraphernalia. The left-hand figure (#349) has a pair of 'bent wings' on its cap, a large sash hanging from its chest, wears a waist pom-pom and holds two boomerangs in its right hand. The right-hand figure (#350) has a pair of elongated 'feathers' on its cap, wears a pair of plant-like tassels from its wait and holds three boomerangs in its right hand.

Figure 9.16. Yowna Gwion pair (#349 and #350). (Photograph by Robert Gunn).

Two other images on the panel have been subject to repainting: a 'recent' anthropomorph (#408) and an 'early' Gwion figure (#355). The original figure of motif #408 was a large round-bodied anthropomorph, painted in pink-red, with arms raised and legs spread apart, prominent penis and testicles, and wearing a tall radiating headdress (Figure 9.17). The anthropomorph has been retouched on at least two occasions, each in a different colour: Motif #408a was retouched in brown-red, and motif #408b in purple-red. These retouching events (#408a and #408b) most likely took place during separate site visits, as the water-based pigments exhibit no signs of mixing. Both the original image and its retouched areas were coarsely painted with thick, slow-drying pigments (Figure 9.17). Despite its size (89cm tall) and prominent positioning, the anthropomorph is not visually prominent, largely due to the muted tones of the pigment colours.

Motif #355 is a Ngunuru Gwion that appears thematically linked to motifs #354 (a tasselled object) and #356 (a mouse-like 'companion animal'), as the three motifs appear to be contemporaneous, being painted and repainted in the same sequence of pigments. The Ngunuru Gwion (#355) is decorated with:

- A pony-tail form headdress with a pom-pom at the end.
- Arm and wrist bands.
- Underarm decorative strings.

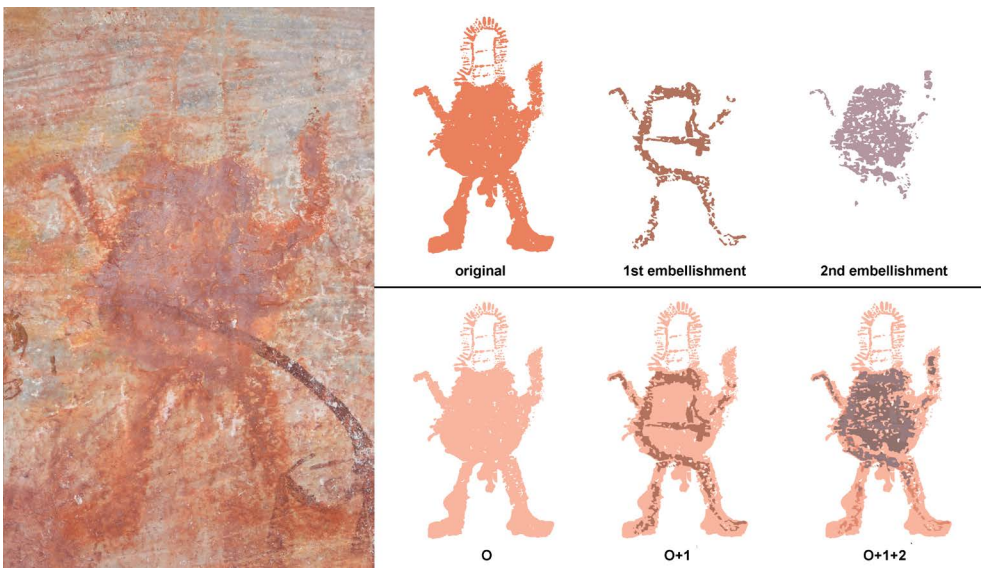


Figure 9.17. Sequence of modifications of motif #408.

- A tassel apron.
- Some sort of covering over its thighs (a skirt-like item).
- A pair of short, straight stick-like objects that it holds in its outstretched hand.

After the initial Ngununu Gwion was painted, further body decoration and a companion animal (#356) were added in a darker brown-red colour. The small companion animal was positioned next to the Ngununu Gwion's pony-tail headdress. The formal pose of the Ngununu Gwion suggests it is holding out the sticks it holds in a choreographed gesture. Both motifs #354 and #355 were painted during the first painting phase of the composition (see Chapter 24 for details of the relative chronology), when these motifs were painted in solid red infill with carefully painted outline and decorative infill (Figure 9.18, a and b). The companion animal (#356) was added when, at an apparently later time as determined by the colour used on both motifs, the infill of the Ngununu Gwion was repainted (Figure 9.18, c). This final repainting does not carefully follow the solid red form of the original figure (Figure 9.18, a + b + c). The infill of the small animal (#356) is painted in the same colour as its outline but was applied as a thin wash, whereas the outline was applied as a thicker, and hence less translucent, pigment (Figure 9.18). What the tasselled object (#354; Figure 9.18) situated by the thighs of the Gwion (#355) represents is unknown, but it may be a form of what Walsh called 'ceremonial objects' (Walsh 2000: 330–331). While Walsh's ceremonial objects have a variety of forms similar to that of motif #354, none are quite the same, but all are of similar size and, like here, occur very close to its associated Gwion figure.

The 'companion animal' by the headdress of Gwion #356 appears to be a small quadruped with a large head and large ears, short straight tail, and short backward pointing legs (Figure 9.19). The shape of the animal most closely conforms to the silhouette of the small rock-dwelling Australian marsupial, the False Antechinus *Pseudantechinus* spp. (cf. Menkhorst and Knight 2001: 61). The close association of such 'companion animals' with Ngununu Gwion, often with the former painted on the shoulder, hair or head of the latter (as with motifs #355 and #356), is a recurrent theme in Kimberley rock art (Walsh 2000: 328–330).

Another large anthropomorph also occurs at the far right-hand side of Art Panel A5: Motif #384 (Figure 9.20). This very weathered red figure is large (113cm tall) and, like motif #408 discussed above, has upraised arms and spread legs, and appears to also have had a similar tall, outlined headdress. The painting of the upper portion of this anthropomorph is coarsely applied, and the lower half is noticeably damaged.

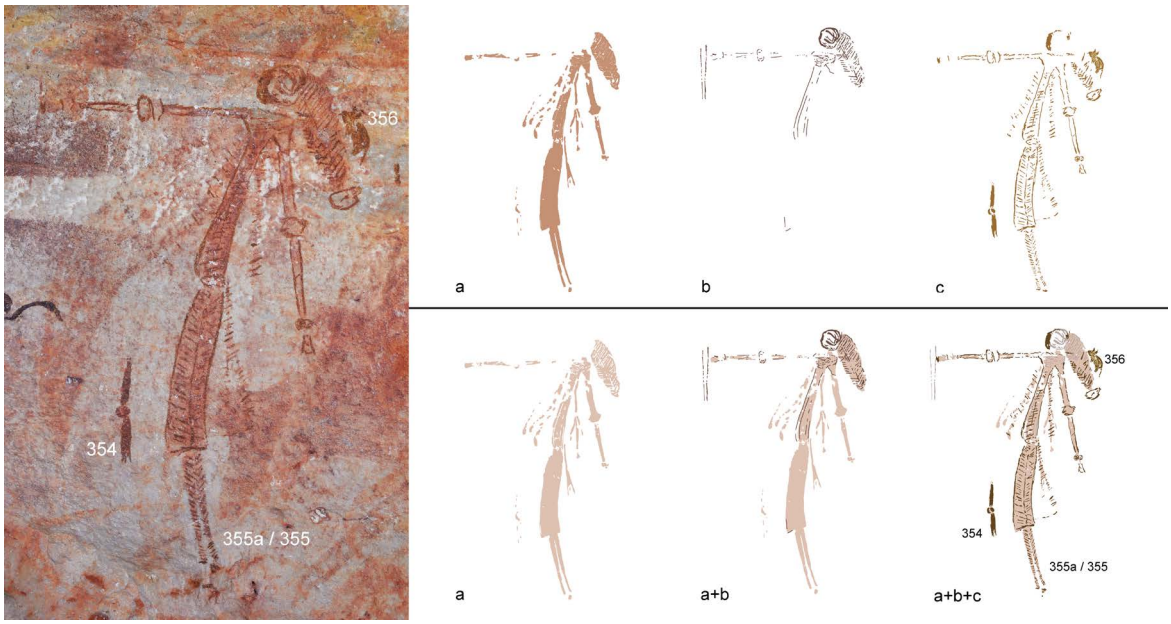


Figure 9.18. Sequence of modifications of motifs #354, #355 and #356.

Figure 9.19. Motif #356, a 'companion animal' to Ngunuru Gwion motif #355. (Photograph by Robert Gunn).

Figure 9.20. Large anthropomorphic motif #384. Note that the outlined foot lies over the hand stencil at lower right (arrowed). (Photograph by Robert Gunn).

Whether this happened as a result of natural processes or by manual erasure is unclear. While most of the figure has a solid red infill, the shape of its left foot is in outline with toes appended. The other foot has weathered away and cannot be seen, even with digital enhancement. Given the poor preservation of this figure, little more can be said about what once would have been a visually imposing anthropomorph.

Adjacent to motif #384 is yet another large anthropomorph (#390), drawn in outline and partial infill with dry red pigment (Figure 9.21). The head has two prominent eyes but no other infill. The arms are in solid infill, with the infilling strokes running parallel to the outline. In contrast, the upper half of the torso was infilled with closely spaced diagonal lines, and the lower half with carefully delineated vertical lines. The outlined legs have no infill. The vertical stripes on the abdomen suggest body-paint. The anthropomorph has no sexual characteristics. A particular feature of this motif is the difference between the right and left feet: its right foot is small and sock-like, while its left foot is large with all toes differentiated.

The three large, recent-looking anthropomorphs (#384, #390 and #408) all have their arms raised. Motif #408 has prominent genitalia, and the pigment on both the painted figures (#384 and #408) was coarsely applied. For Walsh (1997), who examined other sites in this and other parts of the Kimberley, this meant that paintings similar to motifs #384 and #408 at Pundawar Manbur were made in relatively recent times, albeit prior to the painting of some of the Wanjina figures he wrote about. Walsh also interpreted these anthropomorphs as malevolent spirits, such as Argula, as documented for parts of the Kimberley in the early to mid-1900s (cf. Capell 1939; Crawford 1986:91; Petri 1950).

What appears to be the most recent image on the panel (as determined by the excellent condition of the pigment), is a red dry pigment drawing of a club-like motif (#391; Figure 9.22). Lacking any defining characteristics, its formal identification signalled by its attributed motif label is indicative only. Other dry pigment drawings in good condition include two recognisable images of fish: a catfish (#385) and a possible sawfish (#387) (Figure 9.23).

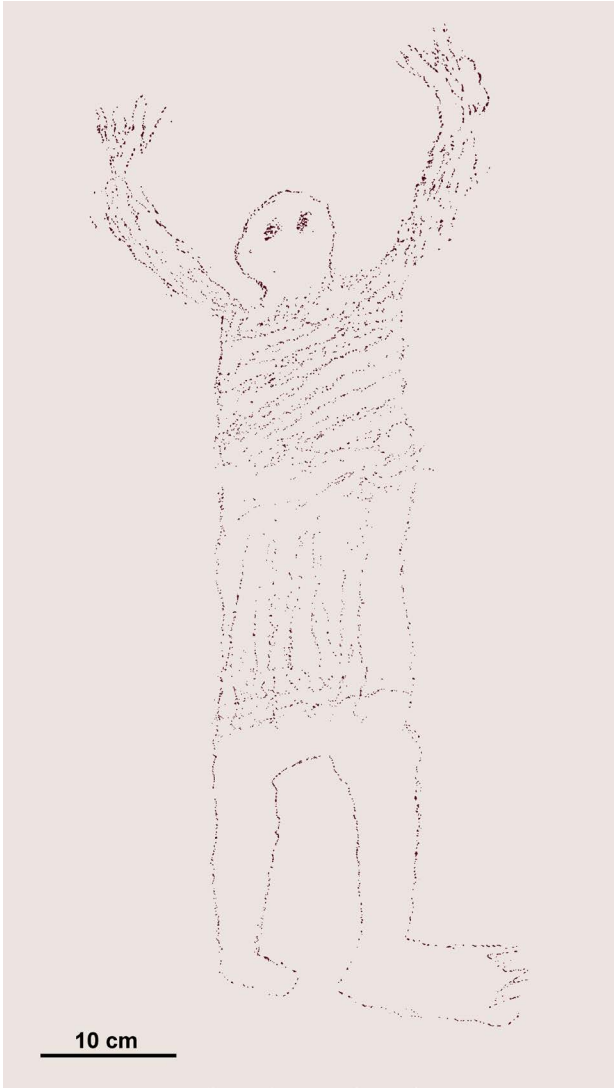


Figure 9.21. Large drawn anthropomorph (#390; 76cm tall).

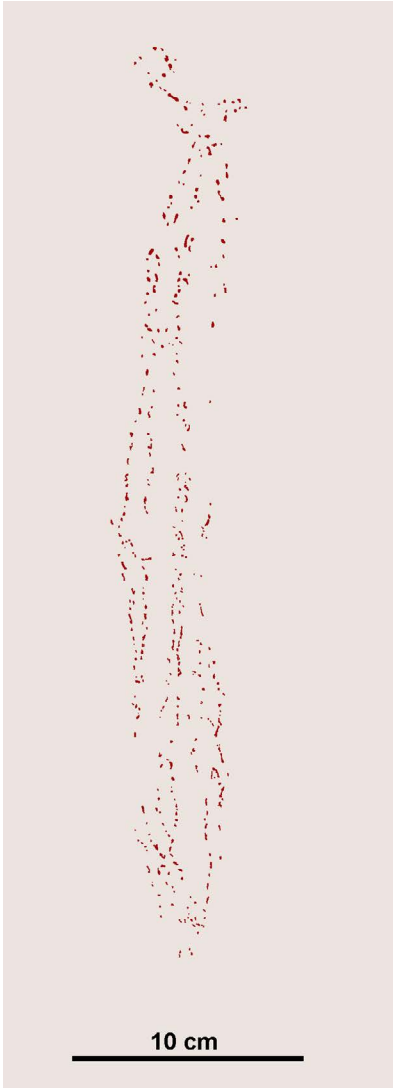


Figure 9.22. Drawing of an unidentified object (#391; 36cm long).

Two other features of note on this panel are 14 grass prints and an unusual splatter of pigment associated with a narrow, vertical band of red pigment. The splatter is reminiscent of those made when a pigment-laden object is flicked, struck or brushed against the rock, such as grass stalk prints (e.g., Figure 9.24). While similar in technique to the making of grass prints (e.g., see Grey 2023), the resultant impressed (printed) image here is less well-defined, and has an unusual vertical band of irregular spots above the impression. A similar marking can be obtained by swiping a pigment-laden object onto the rock face, with the splatter derived from projected pigment as the object approached the rock face, and the banding when it hit and moved down the rock.

Battering here, as on the other panels, is focused on the Gwion figures, but also with some lighter battering on the unidentified animal (#318) and on other small areas apparently unrelated to any other nearby painted image (Figure 9.9). Art Panel A5 also contains another form of subtractive image making: three abraded areas (#403, #404 and #405; Figure 9.25). While motif #2 (Art Panel A1) has abraded line infill on its headdress, the abraded motifs consist of three near-horizontal areas without outline. Their maximum dimensions are 34 × 8cm, 83 × 13cm and 68 × 40cm, respectively. While motifs #403 and #404 are band-shaped and with relatively uniform widths, #405 is more irregular in shape, but trending

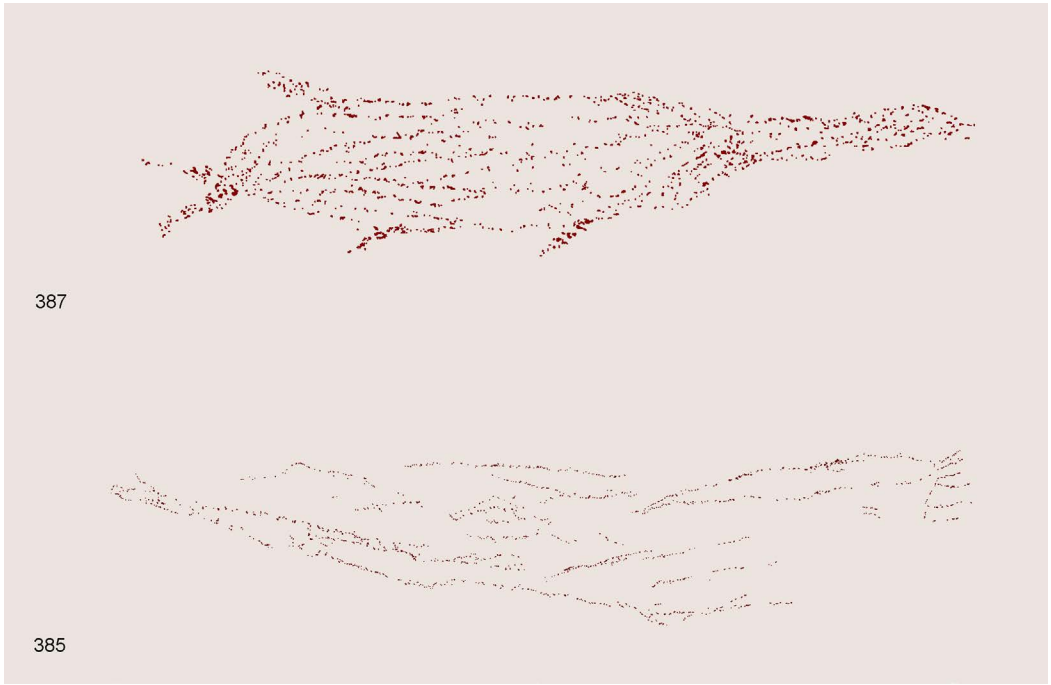


Figure 9.23. Two dry pigment drawings of fish. Motif #387's form is reminiscent of a Freshwater Sawfish (?); 62cm long. Motif #385 Catfish; 39cm long.

in a similar direction to the other two abraded areas. Unlike some vertical rock wall areas that were repeatedly abraded over many generations as part of ritual ceremony (cf. Mountford 1976) in other parts of Australia, rendering them comparable to horizontal grinding patches, motifs #403, #404 and #405 were only lightly abraded and may represent one-off events.

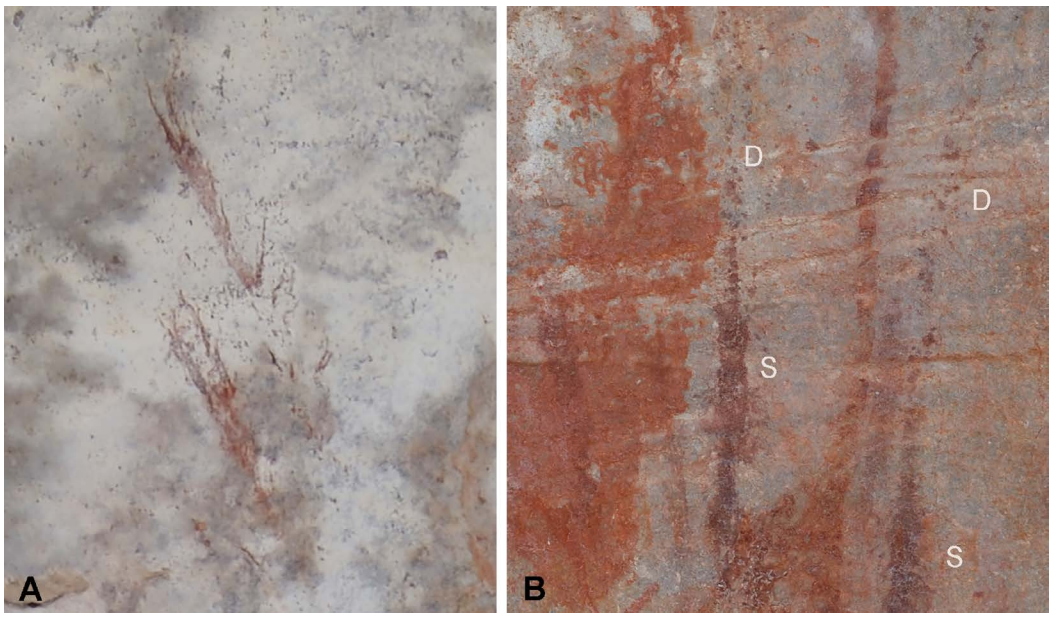


Figure 9.24. Two versions of grass prints. A: Grass seed-head prints. B: Flicked and impressed pigment. The art panel was struck with a pigment-laden applicant (S), such as a handful of grass stalks, so that a fine spray of paint first landed on the rock (D), followed by a solid vertical band when the body of the applicant stroke the rock surface. (Photograph by Robert Gunn).

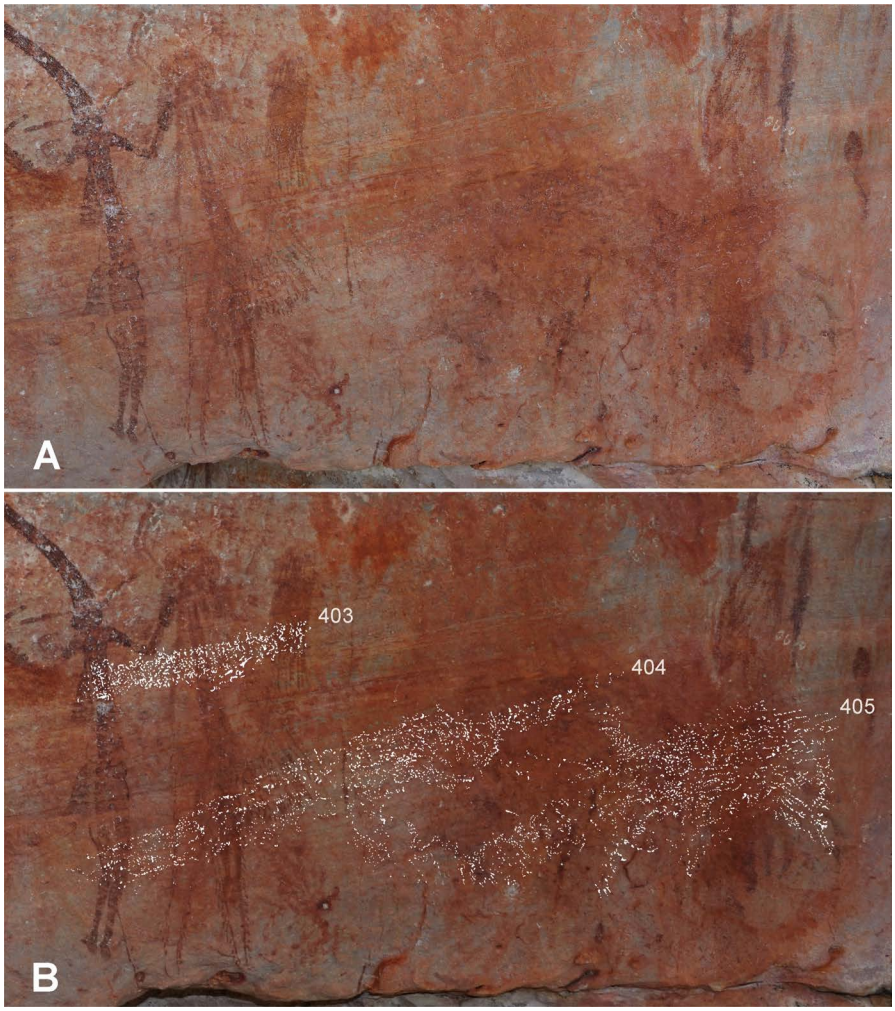


Figure 9.25. Abraded areas. A: Original photograph. B: The abraded areas made clearer by superimposing a photo-tracing of the abrasions over a darkened photograph. (Photograph by Robert Gunn).

PART B
Pundawar Manbur Art Panels B–L

Introduction
Art Panels B–L

The major aim of this study is to undertake an analysis of the sequence of superpositions at Pundawar Manbur. As Art Panel A is the largest and most prominent of the Art Panels, with the greatest number of motifs and instances of superposition, it is this Art Panel that occupies most of this volume. The descriptions of the smaller, artistically less rich Art Panels B–L serve to provide a context for the art of Art Panel A, and also to present a complete record of the art at the Pundawar Manbur shelter.

As was the case for Art Panel A, the motifs of Art Panels B to L were enhanced using DStretch, digitally traced from photographs, illustrated, numbered and catalogued. Also as with Art Panel A, these panels were all carefully manually recorded in the field (including their superpositions) as well as photographically (noting that, for convenience, there is no "Art Panel I"). Art Panels B–L occur both above and below Art Panel A. Most of these other Art Panels are small (*c.* 1.0 × 0.5m), with the exception of Art Panel L that encompasses the entire ceiling (*c.* 16.0 × 6.0m) although its art is limited to an area directly above the wall panels (*c.* 1.0 × 0.5m). Together, Art Panels B–L contain 241 motifs, 212 of which were clear enough to classify to type, and 29 indeterminate fragments.

Chapter 10
The Art of Art Panel B

Art Panel B is located near the centre of the rear wall, on the vertical face of its cornice. The panel overhangs Art Panels A3 and A4, with the underside forming the surface for Art Panel K (Figures 3.9 and 10.1). Art Panel B is horizontally aligned, 2m above the large rock slab that lies on the floor of the shelter. The panel measures *c.* 4.8 × 0.8m in area, and has 57 motifs (Table 10.1) in three sub-panels: Art Panel B1 (20 motifs; Figures 10.2–10.4), Art Panel B2 (20 motifs; Figures 10.5–10.11) and Art Panel B3 (17 motifs; Figures 10.12–10.14). Art Panel B's surface is irregular, with a slight horizontal dogleg (Figure 10.1). It has been damaged by exfoliation, mud-wasp nests, and salt deposits. Most of the art is faint and difficult to decipher without photo-enhancement. Art Panels B1–B3 are illustrated individually in this chapter, but their motif counts are tallied for a combined presentation.

The visually dominant motifs are two hand stencils (#102 and #112), two bar rows (# 440 and #465) and a dark red smear (#466). Numerically, however, the panel is dominated by 35 grass-stalk prints (#424–#439, #442–#453, #468–#476). These prints are all angled to the right of vertical, suggesting they were produced by right-handed people swatting across the body, downward to the left.

Art Panel B also contains seven string-skein prints (#454–#460), six other hand stencils (one very faint in white, #426), and seven paintings (Table 10.1). The paintings are the two bar rows mentioned above, a set of four widely spaced vertical lines (#464), a small non-figurative linear design (#467), a large non-figurative, white outlined design (#477), a smear (#466) and a fragment (#423). All of these motif types except the string-skein prints are also found on Art Panel A.

Prints of string skeins were thought by previous researchers (e.g., Walsh 2000: 119; Welch 2015: 152) to have been produced by throwing pigment-soaked string against the rock. They occur in both Kimberley and Arnhem Land rock art, invariably on high and usually horizontal (overhanging) rock ceilings (some such decorated upper wall surfaces and ceilings are up to 20m above the ground). They are considered by some researchers to be one of the earlier forms of rock art in the Kimberley and Arnhem Land (Chaloupka 1993: 92; Walsh 2000: 119–120). However, no hand or grass prints have ever been dated, they almost never occur in superposition with other motif types, and for many archaeologists their antiquity cannot therefore be assumed.

Table 10.1. Art Panel B art summary.

Characteristic	Number
Painting	
Bird	1
Bar row	1
Bar row pair	1
Simple design	1
Line set	1
Smear	1
Printing	
Grass	35
String skeins	7
Spray	
Standard hand stencil	8
Total	**56**
Fragments	1

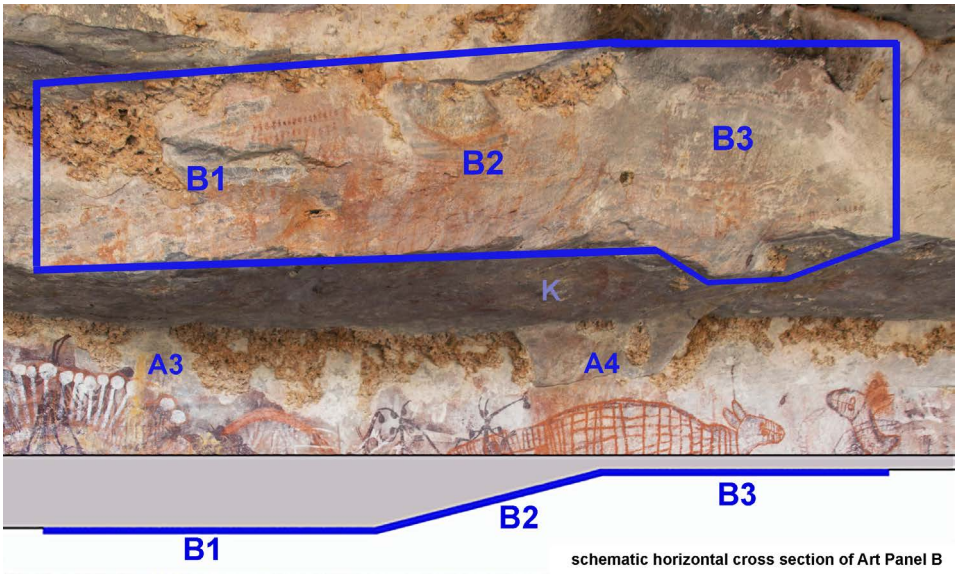


Figure 10.1. Subdivisions of Art Panel B (Art Panels B1–B3).

Figure 10.2. Art Panel B1, daylight photograph. Composite (stitched image). (Photographs by Ken Mulvaney).

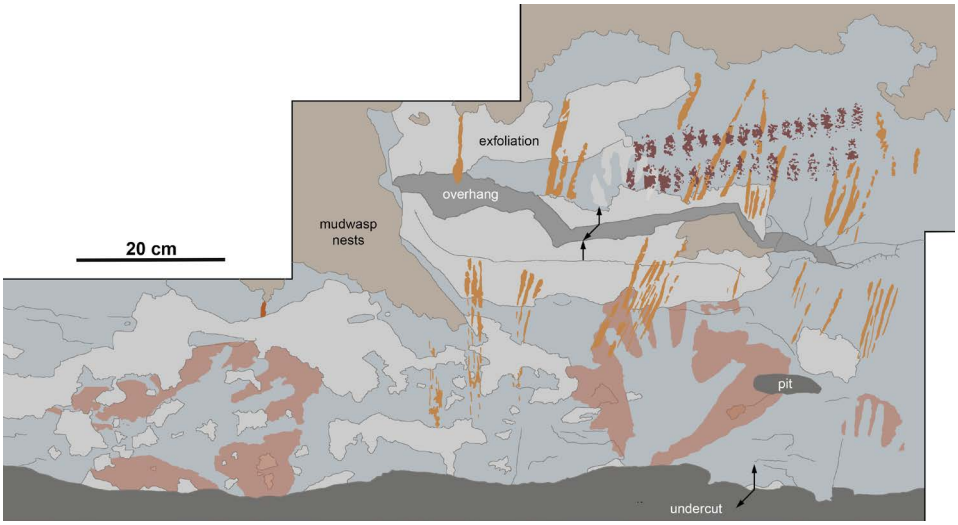


Figure 10.3. Art Panel B1, photo-tracing.

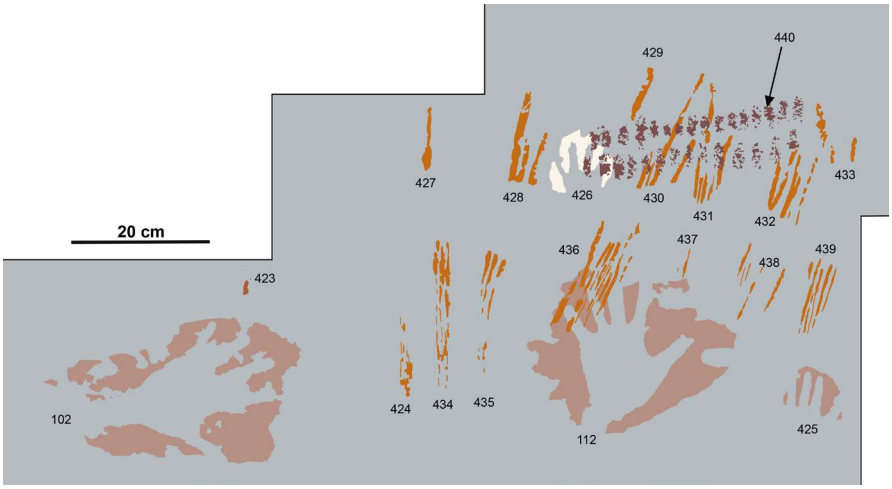


Figure 10.4. Art Panel B1, motif interpretation.

Figure 10.5. Art Panel B2, daylight photograph. (Photograph by Ken Mulvaney).

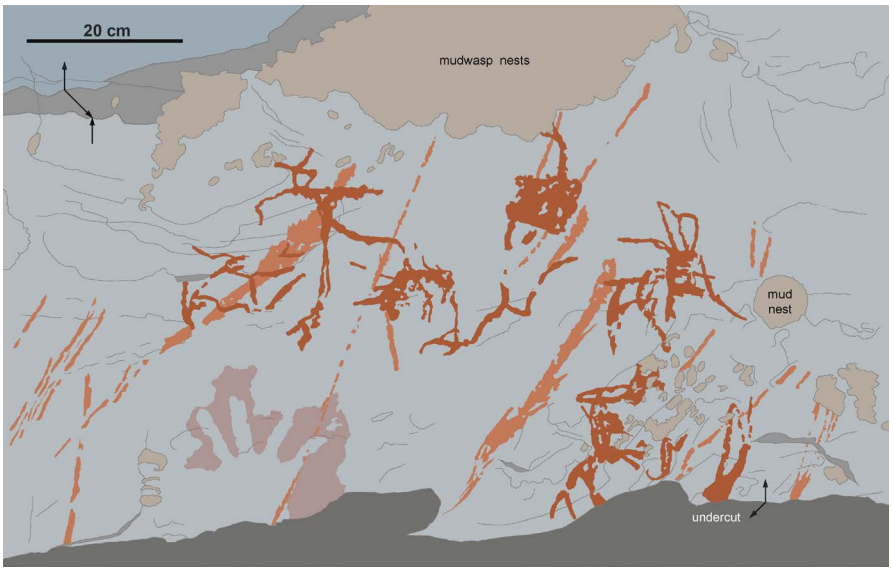


Figure 10.6. Art Panel B2, photo-tracing.

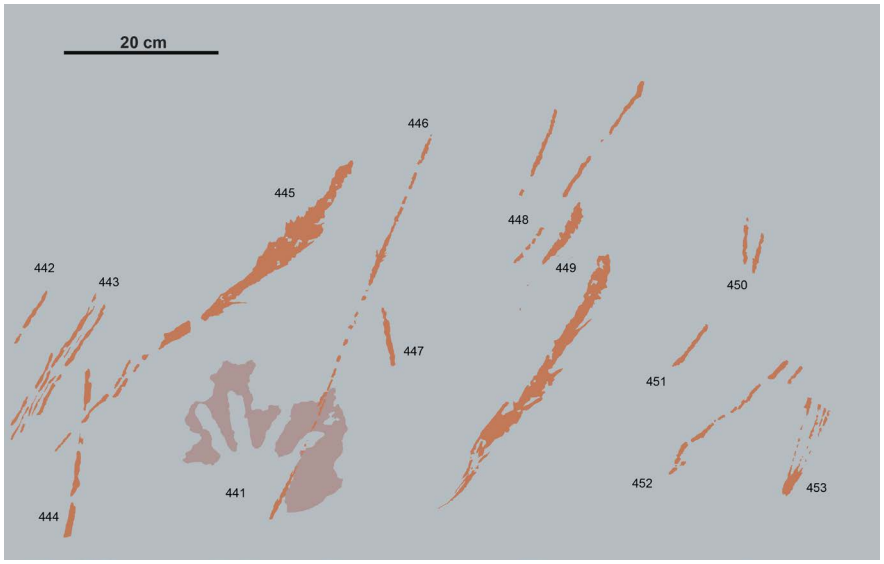


Figure 10.7. Art Panel B2, grass prints (#442–#453) and hand stencil (#441).

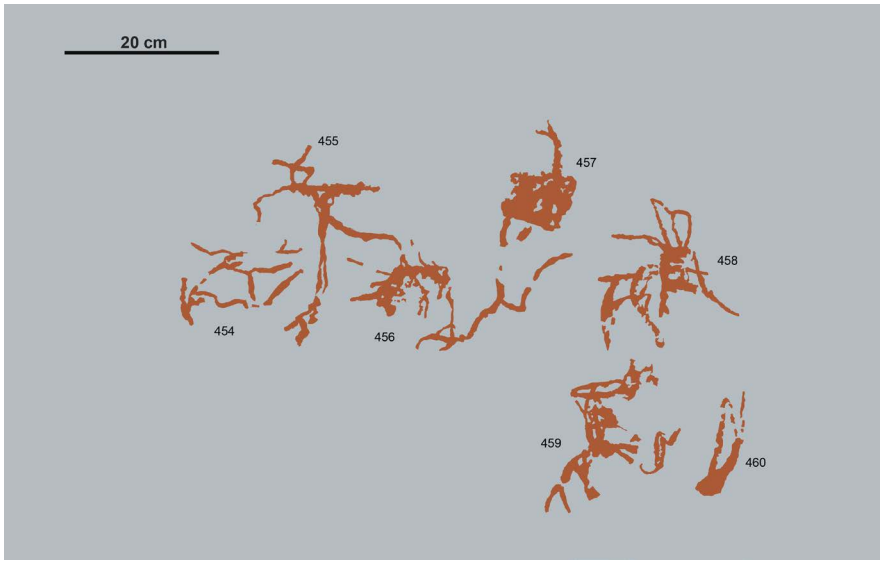


Figure 10.8. Art Panel B2, string skein prints (#454–#460).

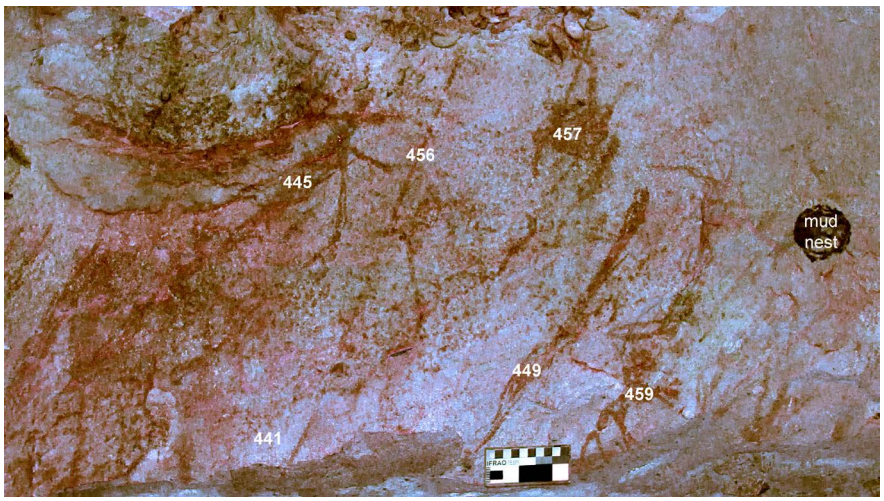


Figure 10.9. Art Panel B2, photograph enhanced in DStretch_lye10.

Figure 10.10. Art Panel B3, daylight photograph. (Photograph by K. Mulvaney).

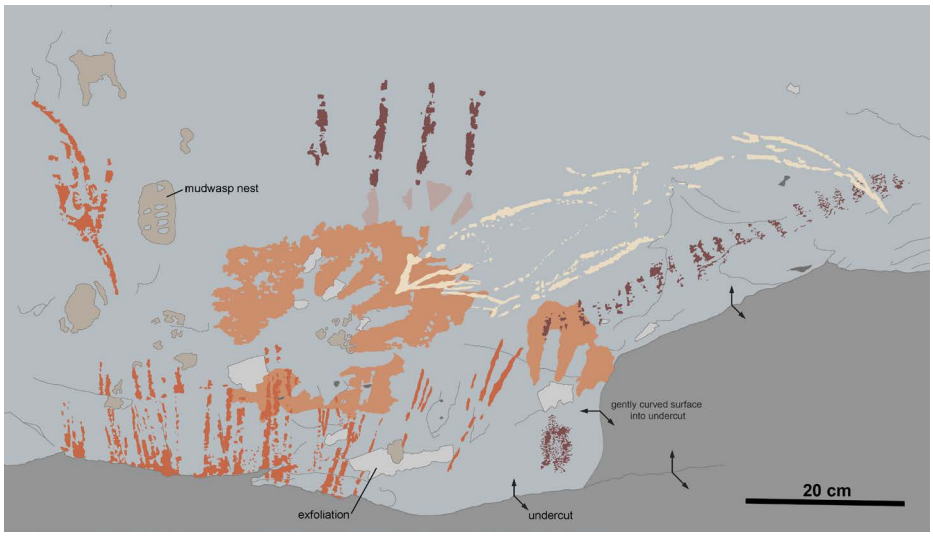


Figure 10.11. Art Panel B2, photo-tracing.

Figure 10.12. Art Panel B3, hand stencils (#461–#463), line set (#464), bar row (#465), and smear (#466).

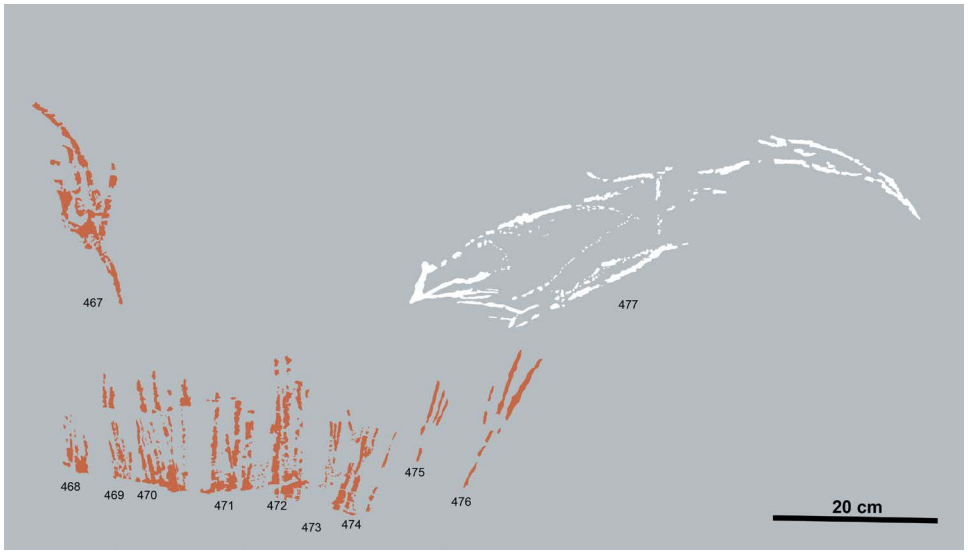


Figure 10.13. Art Panel B3, grass prints (#467–#476) and white fragment (#477).

Figure 10.14. Art Panel B3, dark red- (mulberry) coloured smear (#466). (Photograph by Ken Mulvaney).

Chapter 11
The Art of Art Panel C

Art Panel C is located towards the eastern side of the rear wall, on the vertical face above Art Panel A2 and 2.5m above the effective floor of the shelter (Figures 3.9 and 11.1). The art panel is *c*. 1.3m long × 0.6m high and has an essentially flat surface with a narrow shelf running beneath it. A small section of this shelf has been incorporated into the art (see below). The panel contains seven motifs (Table 11.1). The surface of the rock is light grey in colour, has been damaged by mud-wasp nests and salt deposits, and has a termite trail over parts of the art.

Most of the seven motifs are clear and distinct (Figures 11.1–11.4). These motifs comprise three sets of bars (#478, consisting of a pair of bar rows; and #479 and #480, being two single bar rows; Figure 11.2), and a group of four Ngununu Gwion (#481–#484). The group of Gwion, which underlies the row of bars (#480), is a composition of standing figures in similar poses. As a composition it is unusual, as the lower legs and feet of each figure are positioned on a different rock plane (the step below the panel) to that of their bodies, giving the impression that the figures are walking along the step (Figure 11.3).

While the rows of bars are reminiscent of those on Art Panel A, the form and arrangement of Art Panel C's Gwion motifs is unique at this site, as is the utilisation of the rock ledge in their presentation, which gives them the appearance of walking along the ledge.

Table 11.1. Art Panel C, summary of the art.

Characteristic	Number
Painting	
Ngununu Gwion	4
Bar row	2
Bar row pair	1
Total	**7**

Figure 11.1. Art Panel C, daylight photograph. (Photograph by Ken Mulvaney).

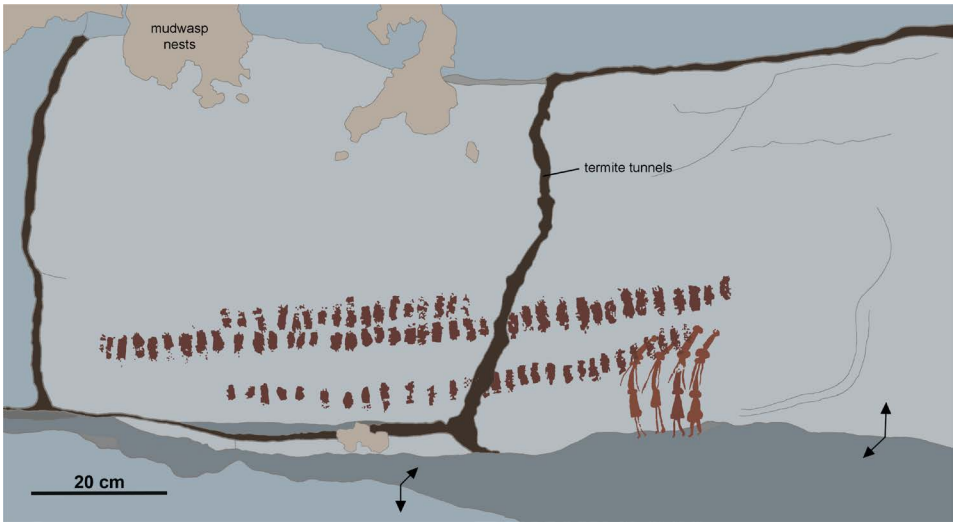


Figure 11.2. Art Panel C, photo-tracing.

Figure 11.3. Art Panel C, motif interpretation.

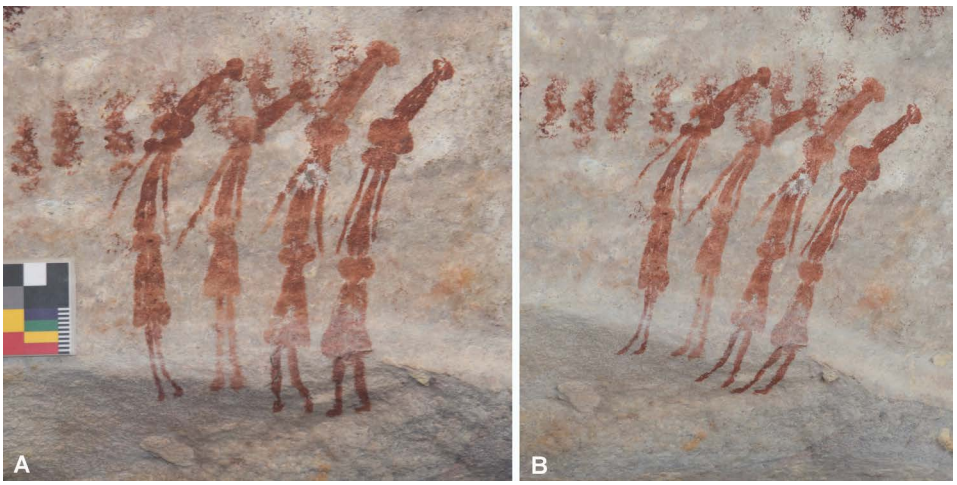


Figure 11.4. Art Panel C, group of Ngununu Gwion (#481–#484). A: Daylight photograph (by Ken Mulvaney). B: Photograph taken with oblique flash, showing the change of plane of the lower limbs of the figures (photograph by Leigh Douglas).

Chapter 12
The Art of Art Panel D

Art Panel D is located in the lower left-hand side of the rear wall, on the vertical face below Art Panels A1–A3 (Figures 3.9 and 12.1). Art Panel D is a long, narrow panel, weathered light-brown in colour, and *c.* 6 × 0.4m in area. The panel has 22 motifs (Table 12.1) distributed across three sub-panels: D1 (5 motifs: Figures 12.2–12.6), D2 (7 motifs: Figures 12.7–12.10) and B3 (17 motifs with six engagements: Figure 12.11–12.15). The panel's surface is slightly convex and has been damaged by well weathered and apparently fresh exfoliation, mud-wasp nests, and salt deposits (Figure 12.1). Much of the art is faint, with some difficult to decipher without photo-enhancement. Art Panels D1–D3 are illustrated individually in this chapter, but the numerical totals combine the tallies from all three sub-panels to give an overall result for Art Panel D.

The art of the three sub-panels varies, with Art Panel D1 dominated by a large area of battering that is unrelated to any pigment art (#487). Art Panel D2 is dominated by hand stencils and a single incomplete Gwion figure (#494). Art Panel D3 has a set of heavily battered Yowna Gwion figures (#501–#506). It also has a set of bar rows and a bird track (#499 and #500) positioned within what appears to be a 'fresh' area of exfoliation. Their similar colours and states of preservation suggests that this set of bars is contemporaneous with other sets of bars on other art panels. As the sets of bars in Art Panel D3 are also of similar colour and state of preservation as Irregular Infill Animal Period motifs on Art Panel A4, such as the initial *manbur* motif #177 (see Chapter 8), it is likely that they belong to that period. Consequently, the exfoliated area on which the set of bars in Art Panel D3 is painted must be contemporary with, or pre-date, the Irregular Infill Animal Period, that is, it must be at least 12,000 years old (see Chapter 25). This also implies that the progressive weathering of the exfoliated areas themselves is very slow.

The group of Yowna Gwion (#501–#506) consists of two larger figures to the left and four smaller figures to the right. The largest figure (#502) overlooks the four smaller ones (#503–#506), but the smaller figures do not appear to form a coordinated composition as all are in different poses and on different 'ground-levels'. Motif #504 does not have a head, and motif #503 has only an incomplete pair of legs and an indication of a body with no upper body at all. It appears that both motifs were left incomplete. Similarly, Motif #494 appears to be an incomplete Ngunuru Gwion, indicating that for these two figures the legs were the first segments painted, prior to the addition of the upper body and decoration (cf. Walsh 2000: 66–70). It would appear, then, that the way individual paintings were gradually completed varied with different artists.

Table 12.1. Art Panel D art summary.

Characteristic	Number
Battering	
Area	8
band	1
Drawing	
Line set	1
Painting	
Ngunuru Gwion	1
Yowna Gwion	6
Bird track	1
Bar	1
Bar row pair	1
Line	1
Spray	
Standard hand stencil	5
Variant hand stencil	1
Total	**27**
Fragments	1

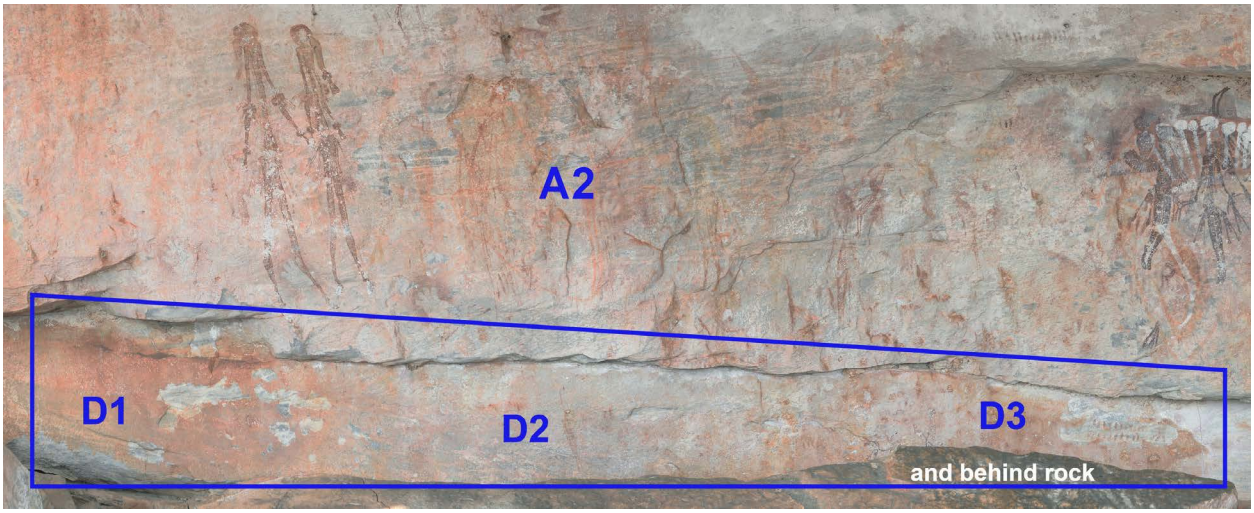


Figure 12.1. Art Panel D, showing the panel's sub-divisions.

Figure 12.2. Art Panel D1, flash photograph. (Photograph by Leigh Douglas).

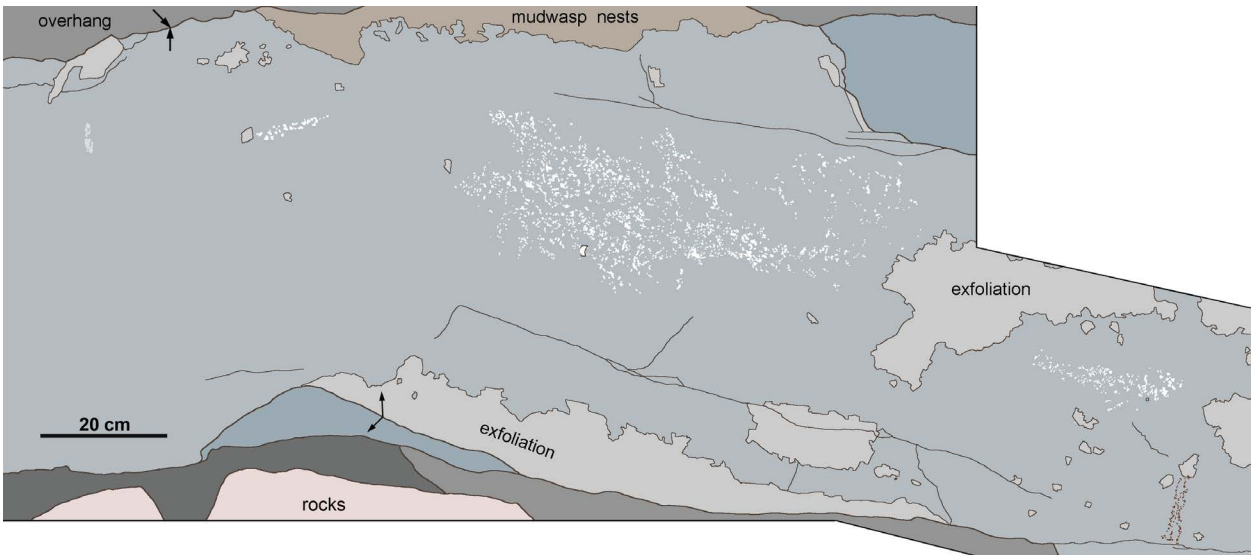


Figure 12.3. Art Panel D1, photo-tracing.

Figure 12.4. Art Panel D1, battered area (#487) and other battered motifs, and a single set of drawn lines (#489).

Figure 12.5. Art Panel D1, detail of battering (#487). (Photograph by Robert Gunn).

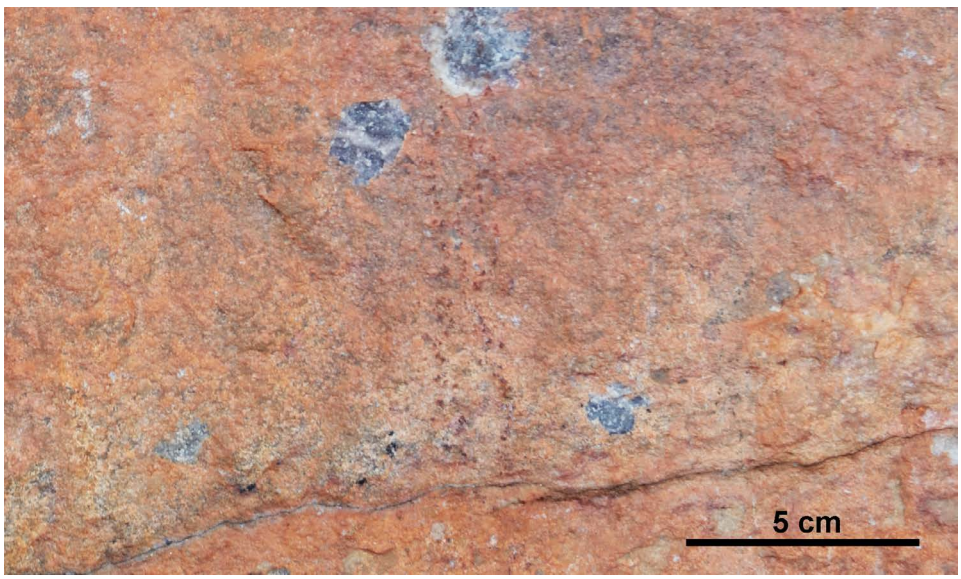


Figure 12.6. Art Panel D1, set of vertical drawn lines (#489). (Photograph by Robert Gunn).

Figure 12.7. Art Panel D2, flash photograph. (Photograph by Leigh Douglas).

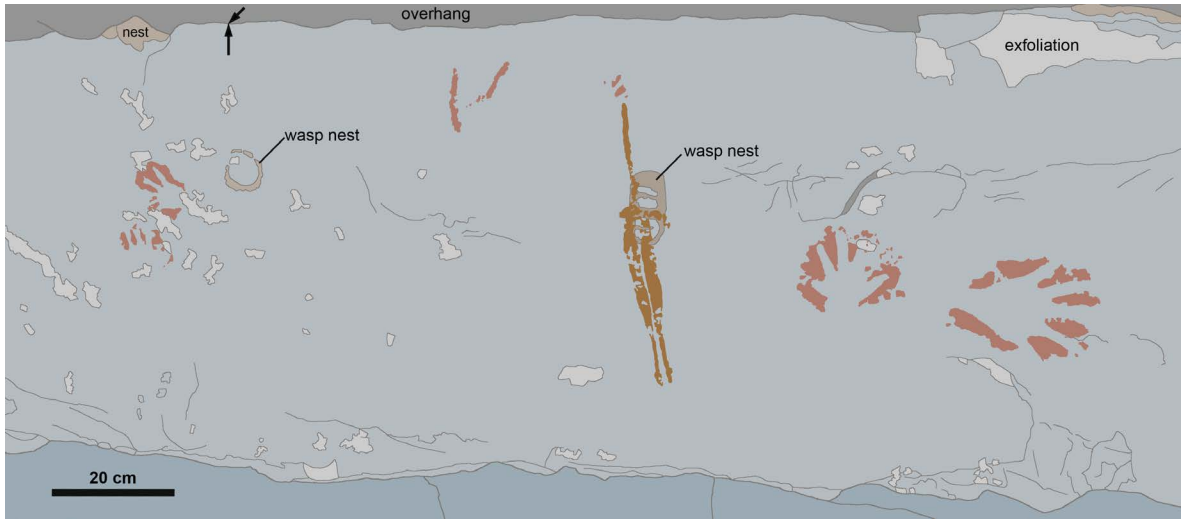


Figure 12.8. Art Panel D2, photo-tracing.

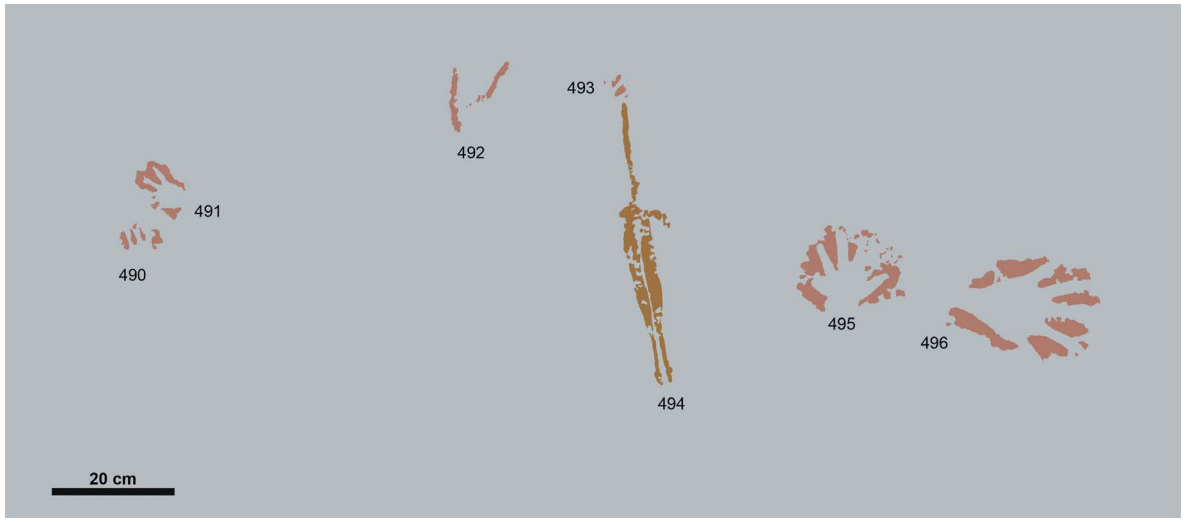


Figure 12.9. Art Panel D2, apparently uncompleted Gwion figure (#494), four hand stencils and a fragment (#492).

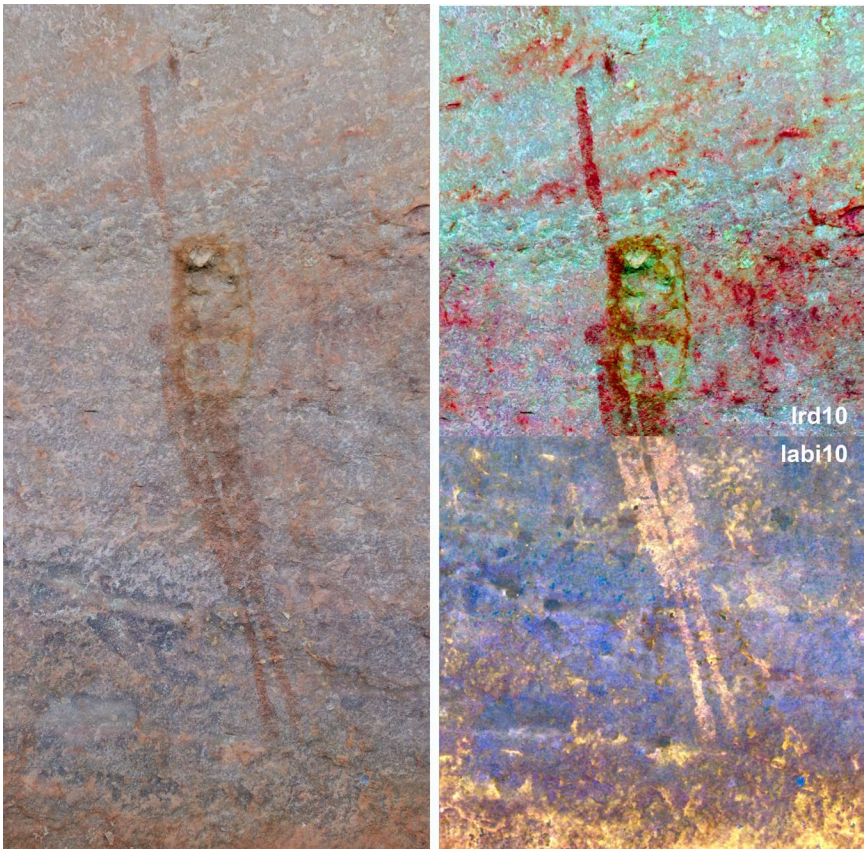


Figure 12.10. Art Panel D2, details of incomplete Ngununu Gwion (#494). Two DStretch enhancements (lrd10 and labi10) highlight different characteristics of the motif. (Photograph by Robert Gunn).

Figure 12.11. Art Panel D3, flash photograph. (Photograph by Leigh Douglas).

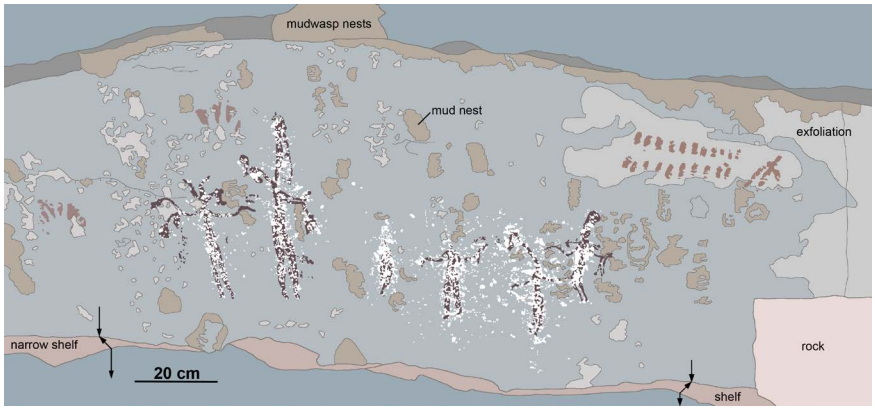


Figure 12.12. Art Panel D3, photo-tracing.

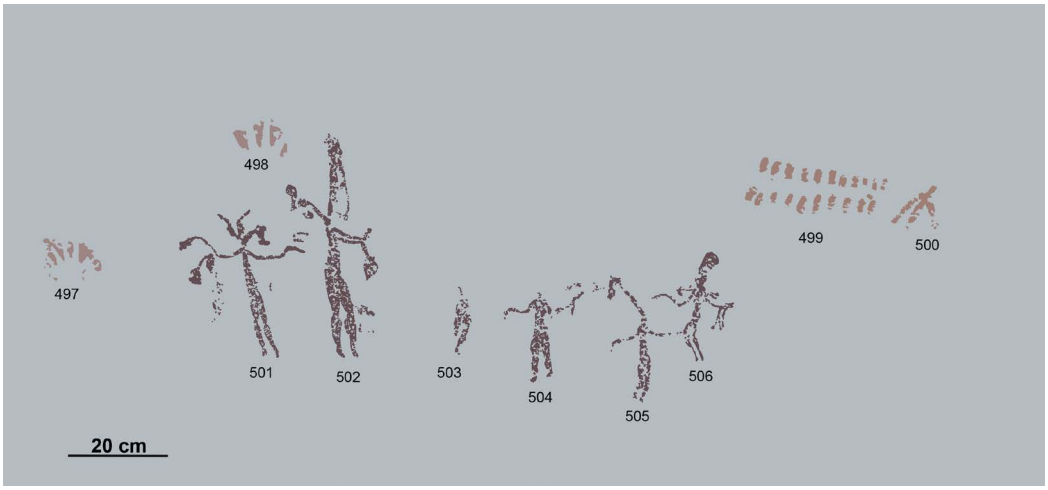


Figure 12.13. Art Panel D3, row of Yowna Gwion, hand stencils, a pair of bar rows (#499) and a bird track (#500).

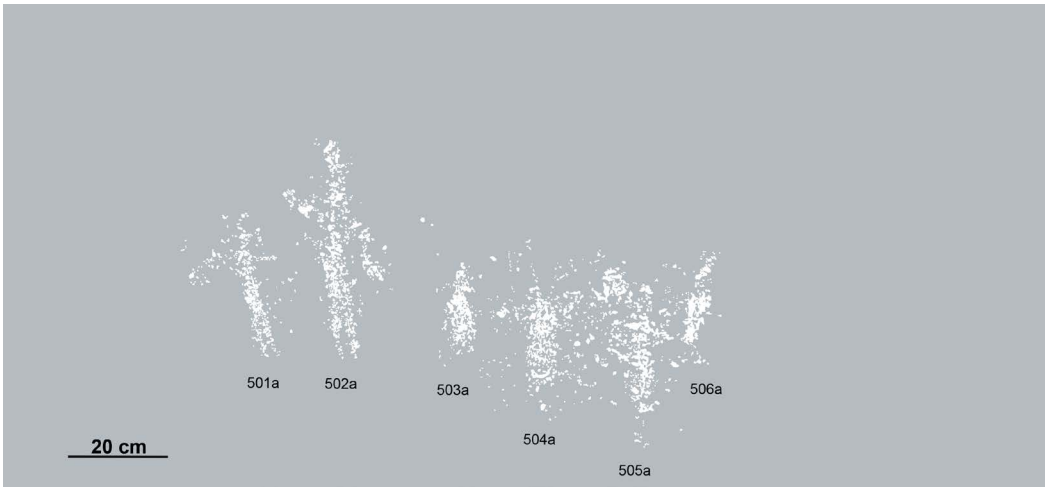


Figure 12.14. Art Panel D3, battering of the Yowna Gwion figures.

Figure 12.15. Art Panel D3, detail of battered Gwion figures (#503–#506 and #503a–#506a). (Photograph by Leigh Douglas).

Chapter 13
The Art of Art Panel E

Art Panel E is located near the centre of the rear wall, on the vertical face below Art Panels A3 and A4 (Figures 3.9 and 13.1). Art Panel E is a small, diamond-shaped panel, *c.* 0.6 × 0.5m in area, and has two motifs (Table 13.1; Figures 13.1–13.2). The panel surface is flat (Figure 13.1) and has been damaged by exfoliation, mud-wasp nests, and salt deposits. The white area of the salt deposit corresponds with the area of the art panel. It was most likely first used because of its size and colour-contrast relative to the initial red hand stencil. Because of the white deposit, the art is clear and distinct.

The two motifs are a red variant right hand stencil (#507; with the little finger stumped) and a red drawing of a simple design (#508). The drawing has been placed deliberately over the centre of the hand stencil.

Table 13.1. Art Panel E, summary of the art.

Characteristic	Number
Drawing	
Simple design	1
Spray	
Variant hand stencil	1
Total	**2**

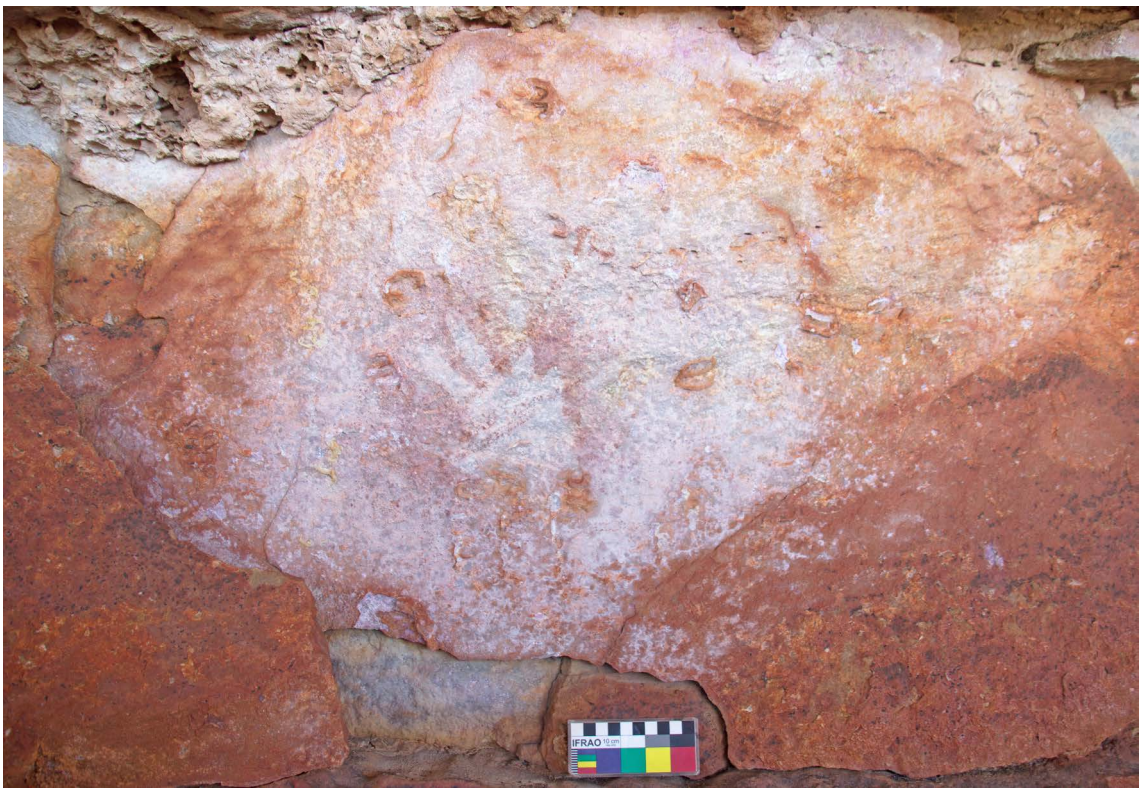


Figure 13.1. Art Panel E, flash photograph. (Photograph by Robert Gunn).

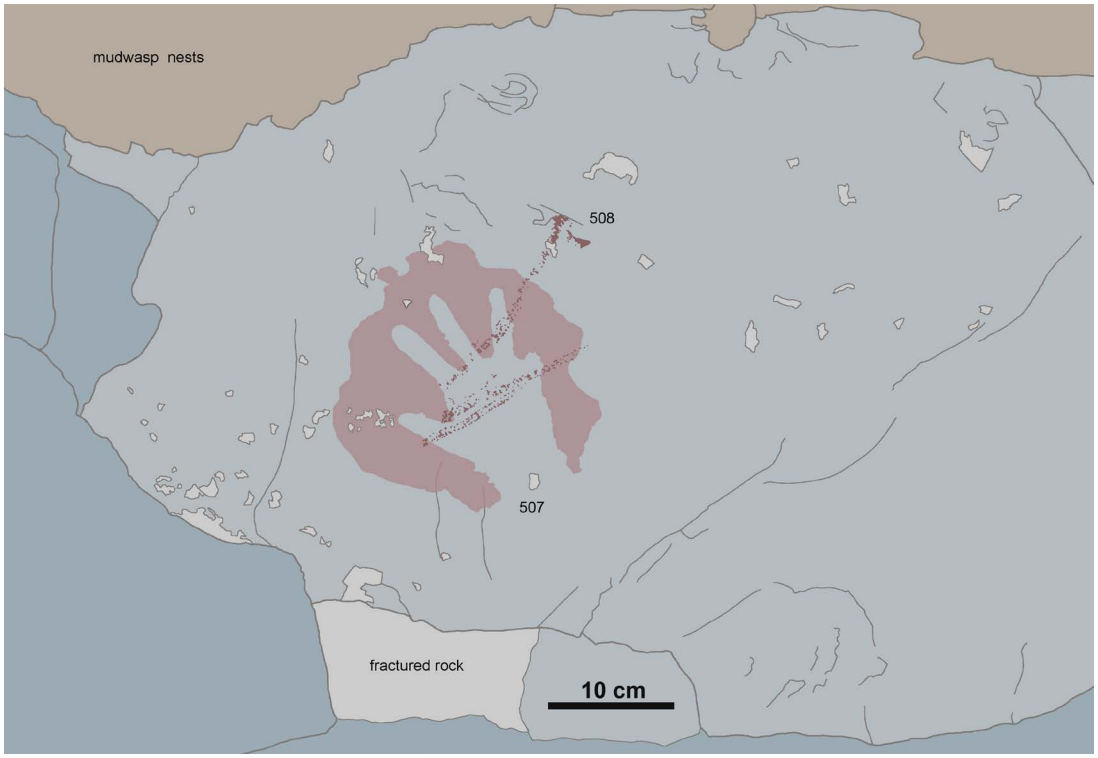


Figure 13.2. Art Panel E, photo-tracing of the panel and motifs.

Chapter 14
The Art of Art Panel F

Art Panel F is located near the centre of the rear wall, on the vertical face below Art Panel A4 (Figures 3.9 and 14.1). Art Panel F is a small, horizontal, rectangular-shaped panel, *c*. 0.9 × 0.4m in area. It has four motifs (Table 14.1; Figures 14.1–14.4). The panel surface is flat with a weathered light brown colour (Figure 14.1). It has been damaged by exfoliation, mud-wasp nests, and minor salt fracturing. All of the motifs are near the centre of the rock panel, so that superpositioning was unavoidable, a factor that would probably have been recognised by the later artists, and that therefore probably featured in the art placement's decision making.

The four motifs consist of two red hand stencils (#509 and #510), a red boomerang stencil (#512) over the hand stencils, and, most recently, a red vertical smear (#511). The pigment from the boomerang stencil has dribbled at the left side. The smear is possibly a hand-wipe, such as is often seen where there are hand prints, but as no hand prints occur here, it may have been a hand-wipe to clean excess pigment off the hand after it was used to apply pigment onto another art panel, or from hand-mixing paint on a palette.

Table 14.1. Art Panel F, summary of the art.

Characteristic	Number
Painting	
Smear	1
Spray	
Standard hand stencil	2
Variant hand stencil	
Object stencil (boomerang)	1
Total	**4**

Figure 14.1. Art Panel F, flash photograph. (Photograph by Leigh Douglas).

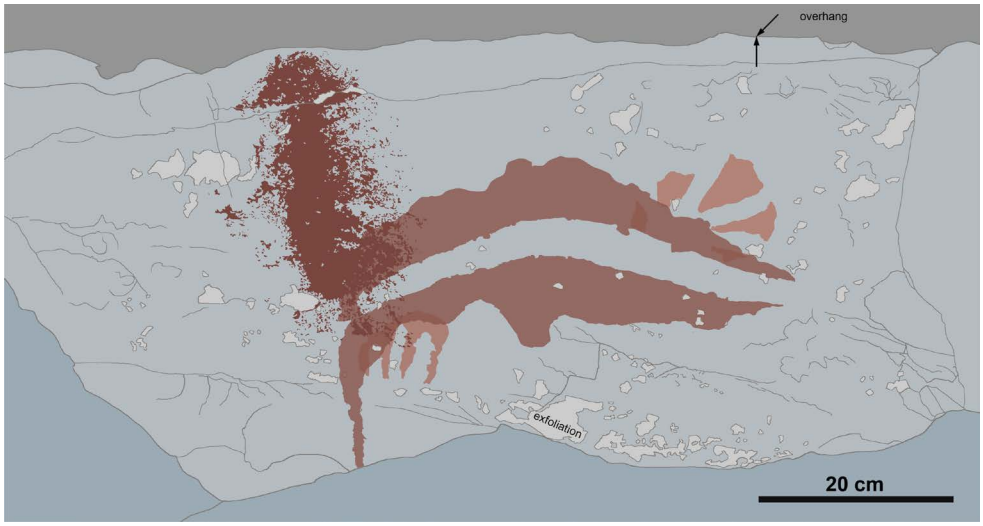


Figure 14.2. Art Panel F, photo-tracing.

Figure 14.3. Art Panel F, the two hand stencils (#509 and #510), and the area of smeared paint (#511).

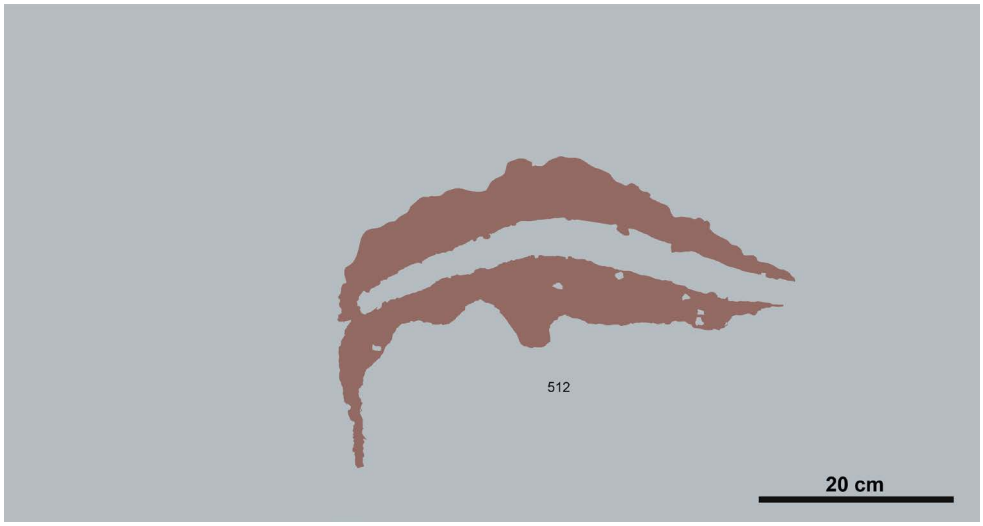


Figure 14.4. Art Panel F, the boomerang stencil.

Chapter 15
The Art of Art Panel G

Art Panels G, H and J form a triptych at the western end of the rear wall, on the vertical face below Art Panel A5 (Figures 3.9 and 15.1). Art Panel G is a small, vertical panel of irregular shape, *c.* 0.9 x 0.5m in area. It has eight motifs (Table 15.1; Figures 15.2–15.6), one of which (#515) has been modified at least twice. The panel's surface is flat and weathered yellow- to red-brown (Figure 15.2). It has been damaged by exfoliation and mud-wasp nests. The motifs are distributed across the panel.

The eight motifs consist of a red hand stencil (#514), a faint and indistinct red unclassified anthropomorph (#519), a structurally simple apex design and a line (#517 and #518), an unusual, elongated anthropomorph (#520), a visually dominant Ngununu Gwion (#515), and two red fragments (#513 and #516). The yellow Ngununu Gwion (#515) was repainted in a darker red (#515a) and then decorated with a dark brown-red (#515b) (Figure 15.6). With the exception of the face and hair ornaments, most of the original yellow motif (#515) is now covered by the later repainting (#515a). Motif #520 is an unusual anthropomorph with thin linear arms and legs, a three-lined upper torso and a rectangular outline lower body with three internal vertical stripes. The head area appears to be a convergence of the three lines of the upper body.

Table 15.1. Art Panel G, summary of the art.

Characteristic	Number
Painting	
Ngununu Gwion	1
Other anthropomorph	1
Line	1
Apex design	1
Simple design	1
Spray	
Standard hand stencil	1
Total	**6**
Fragments	2

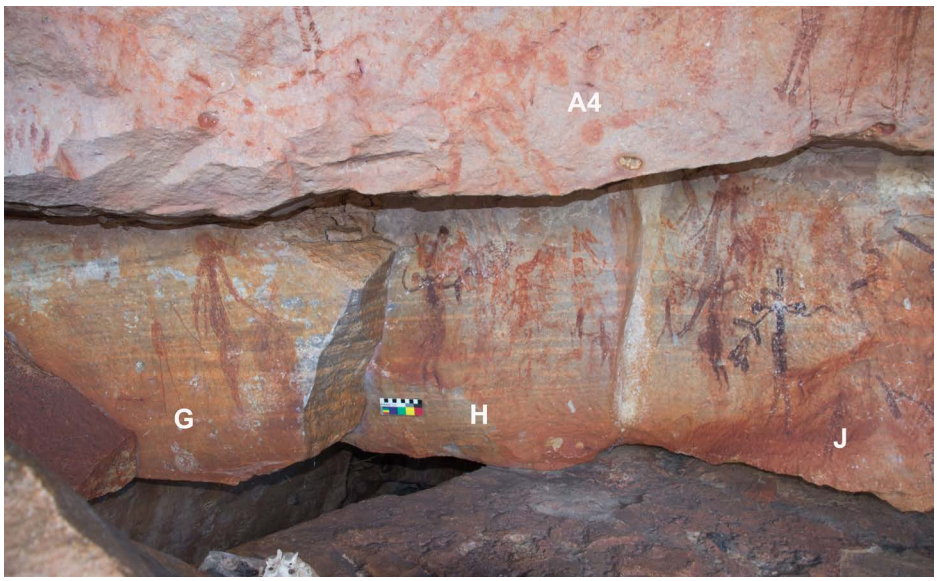


Figure 15.1. The triptych-like Art Panels G, H and J below Art Panel A3. (Photograph by Ken Mulvaney).

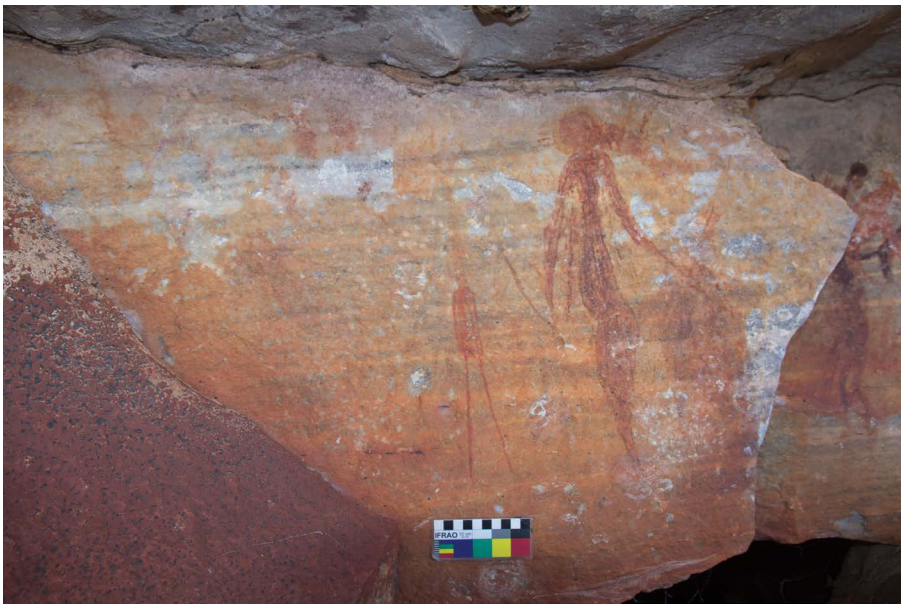


Figure 15.2. Art Panel G, flash photograph. (Photograph by Ken Mulvaney).

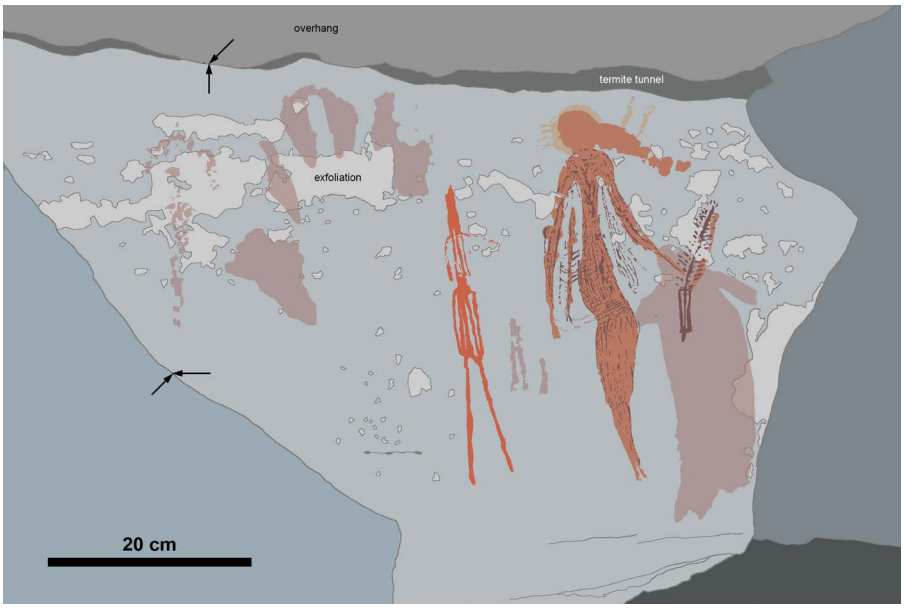


Figure 15.3. Art Area G, photo-tracing.

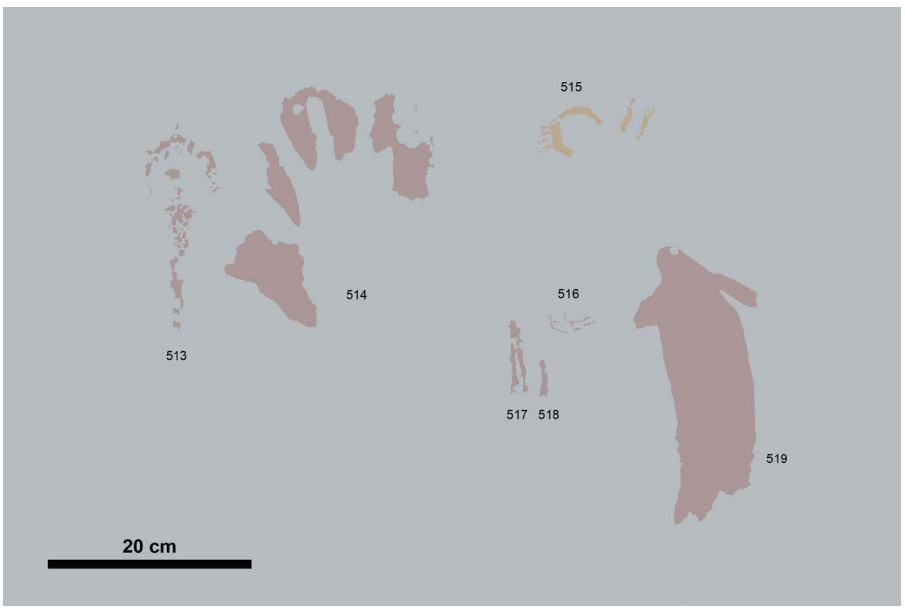


Figure 15.4. Art Panel G, various motifs including all that is visible of what appears to have been the original painting of a Ngunuru Gwion (#515).

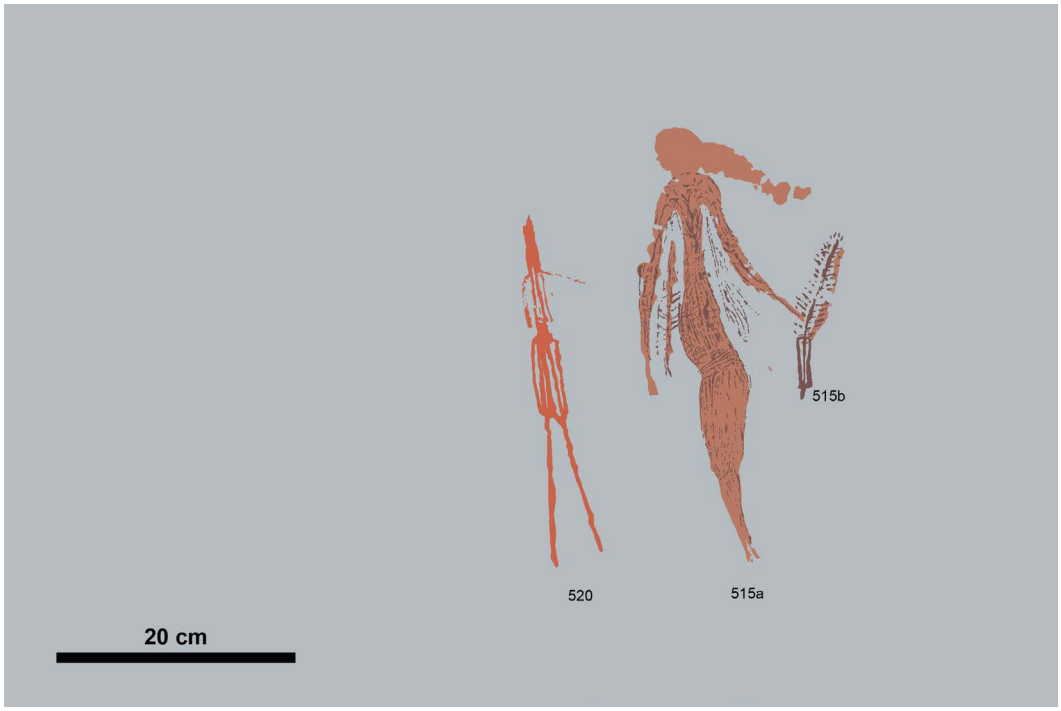


Figure 15.5. Art Panel G, unclassified anthropomorph (#520) and subsequent additions to the Ngunuru Gwion (#515a and 515b).

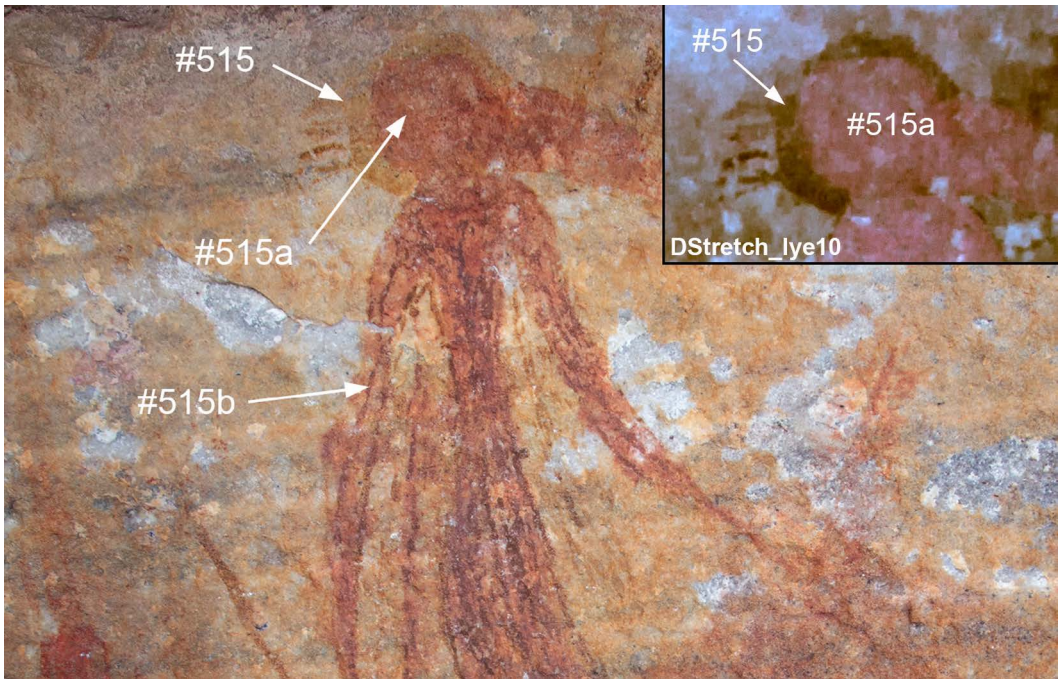


Figure 15.6. Art Panel G, detail of sequential modifications to motif #515. (Photograph by Ken Mulvaney).

Chapter 16
The Art of Art Panel H

Art Panel H sits between Art Panels G and J at the western end of the rear wall, on the vertical face below Art Panel A5 (Figures 3.9, 15.1 and 16.1). Art Panel H is a small, vertical and square-shaped panel, *c.* 0.6 × 0.7m in area. It has 34 motifs (Table 16.1; Figures 16.2–16.4), one of which (#526) was modified at least once. The panel surface is slightly concave, with its lower left corner broken away. The rock surface's colour varies from light-grey to red-brown (Figure 16.1). The panel has been damaged by salt deposition, a section of rock at the bottom of the panel has fallen away, and there is minor exfoliation across the panel. The motifs are distributed across the panel, but are concentrated along a central horizontal band. They consist of six red anthropomorphs (at least two Dynamic Gwions #531 and #532, and other unidentified figures #531, #533, #534, #537 and #539); a poorly-preserved deep-red Yowna Gwion that has

Table 16.1. Art Panel H, summary of the art.

Characteristic	Number
Painting	
Yowna Gwion	1
Yowna Gwion repainting	1
Other anthropomorph	6
Macropod	2
Plant	8
Line	1
Ovoid	1
Simple design	1
Flicking	
Area	2
Line	1
Total	**24**
Fragments	12

Figure 16.1. Art Panel H, flash photograph. (Photograph by Ken Mulvaney).

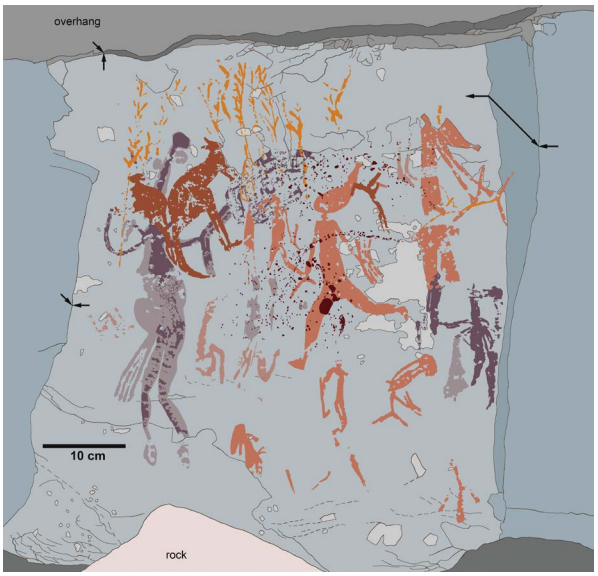


Figure 16.2. Art Panel H, photo-tracing.

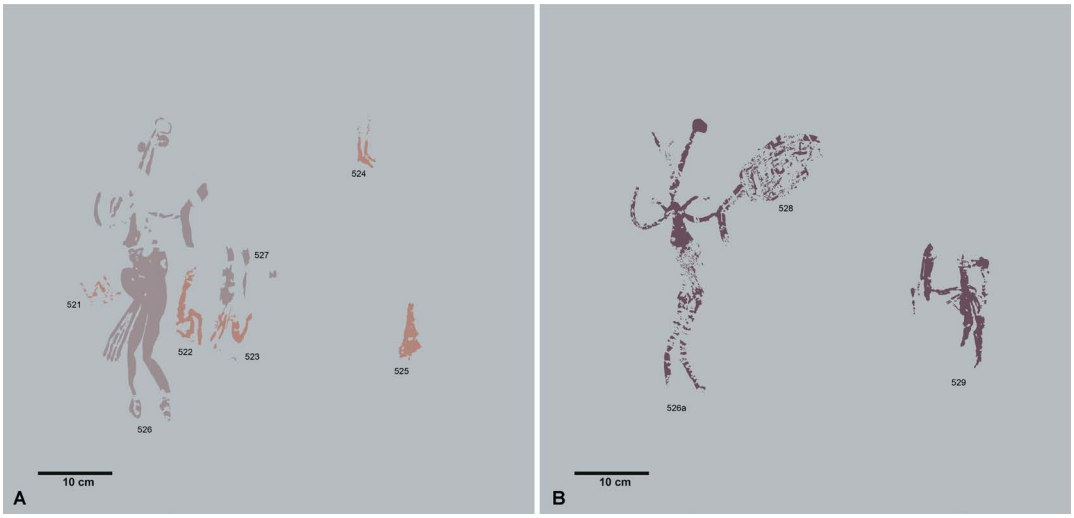


Figure 16.3. Art Panel H. A: Yowna Gwion (#526) and various motifs. B: Repainted Yowna Gwion (#526a) and fragment.

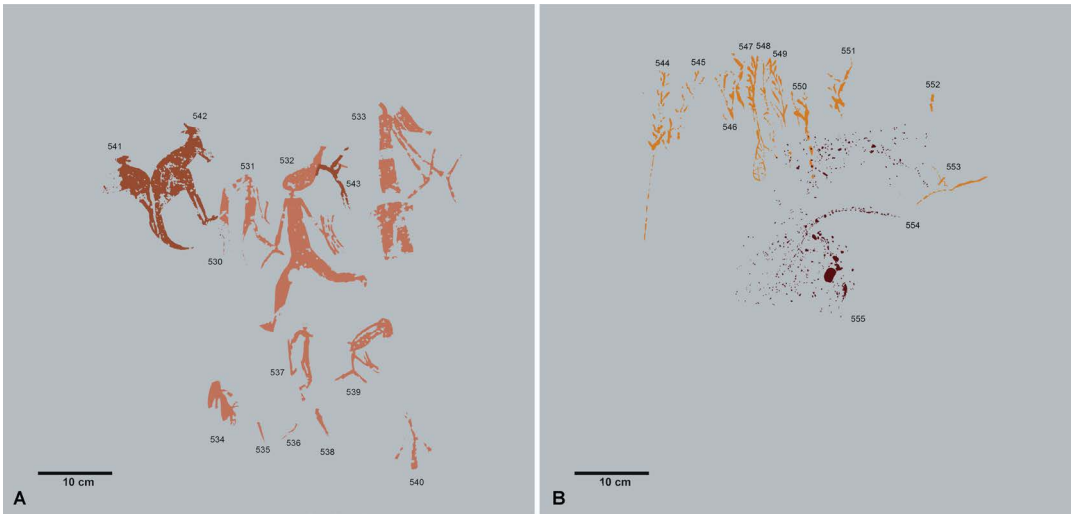


Figure 16.4. Art Panel H. A: Back-to-back macropods (#541 and 542), various Dynamic Gwions, and other anthropomorphs. B: Suite of painted plants in orange-red pigment and dark red fragments of apparently flicked pigment.

Figure 16.5. Art Panel H, detail of the 'back-to-back macropods' composition (#541 and #542). (Photograph by Ken Mulvaney).

Figure 16.6. Art Panel H, DStretch_yye10 enhancement of two of the plants (#544 and #552). (Original photograph by Ken Mulvaney).

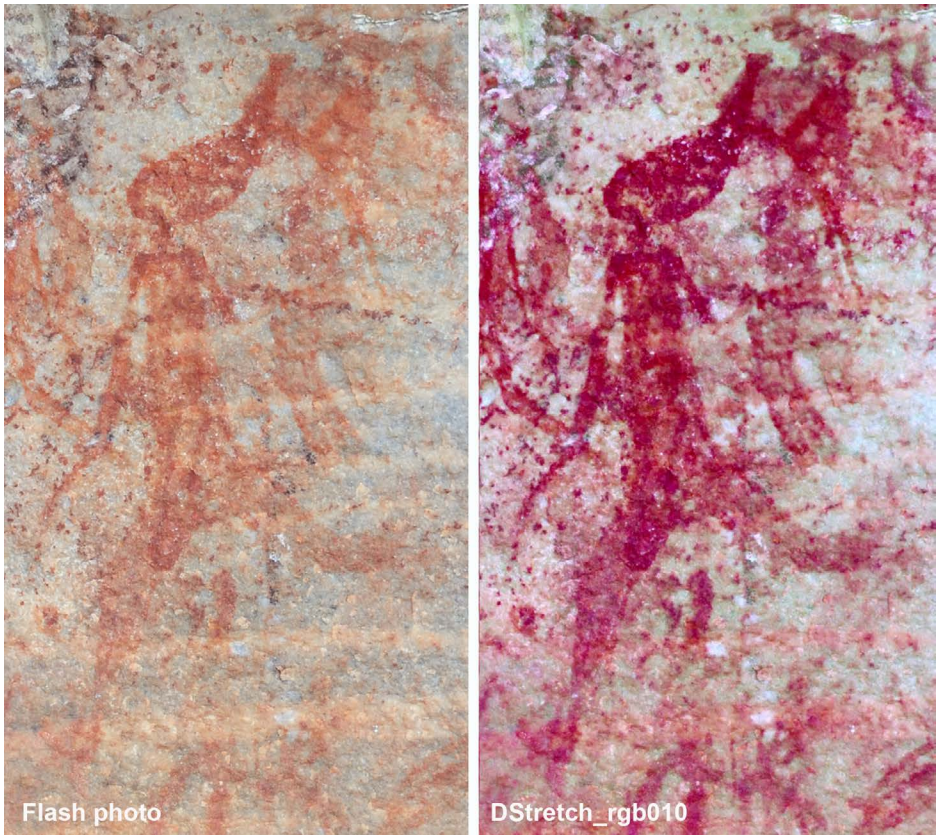


Figure 16.7. Art Panel H, detail of the 'running' anthropomorph (#532) and DStretch-rgb010 enhancement. (Photograph by Ken Mulvaney).

been repainted in a darker red (mulberry) pigment (#526 and #526a); a pair of back-to-back macropods (#541 and #542); a set of at least nine plants across the top of the panel (#544–#552); and a variety of other, mainly fragmented motifs.

Art Panel H is illustrated by Welch (2015: 263), noting that the macropods overlie a Dalal Gwion. He also mentions and illustrates that, at another site, a Dynamic Gwion style macropod is superposed by a Yowna Gwion (2015: 261).

Small naturalistic macropods are a feature of the Dynamic Gwion Period (Walsh's Elegant Action Figures; see Walsh 2000: 150–155 and Welch 2015: 263). The back-to-back macropod composition of Art Panel H

(Figure 16.5; note the parallel placement of the tails) has not previously been mentioned for the Kimberley, but the design feature is common across much of Arnhem Land to the east (Taçon *et al.* 2022). In the more recent phases of southern Arnhem Land's rock art, such back-to-back motifs are expressions of the major religious tradition of Jabuduruwa, where they occur at select sites as large, prominent images (see Maddock 1970).

The plant motifs (Figure 16.6) occur as a horizontal row of vertical, leafed stems across the top of the panel. These are mostly faint and fragmented, but one example (#547) has what appears to be a bulb at its base. Unlike the one small, probably round (cheeky)-yam (*Dioscorea bulbifera*?) (#412) and a possible vine/decoration (#394), both on Art Panel A5, these on Art Panel H are the only clear plant forms at Pundawar Manbur.

The prominent 'running figure' (#532; Figure 16.7) is unusual for the Kimberley, for while it is similar to Dynamic Gwion (the Elegant Action Figures of Walsh 2000: 150–155), it lacks the characteristic deft solid painting, and is rather unevenly painted and with outline + infill.

Chapter 17
The Art of Art Panel J

Art Panel J lies to the right of Art Panel H, at the western end of the rear wall on the vertical face below Art Panel A5 (Figures 3.9, 15.1 and 17.1). Art Panel J is small, rectangular in shape, *c.* 1.3 × 0.7m in area, and has 44 motifs (Table 17.1; Figures 17.1–17.7). Five of these have been modified at least once. The panel's rock surface is essentially vertical but irregular. It has a lower, outward lip and minor central ridge. The colour of the panel varies from 'rusty' red-brown on the right to light-grey on the upper left. The left-hand side of the panel is protected more than the right-hand side by the slightly greater overhang of Art Panel A5. The top of the panel has been damaged by salt deposition and wasp nests. The left-hand side has a strip of white salt and the right-hand side has a strip of dark-grey salt. The rust-colour on the right-hand side may be partially attributed to a combination of dust and moisture on the more exposed parts of the panel. There is only minor exfoliation on the panel, and the rock detachment scars at the top of the

Table 17.1. Art Panel J, summary of the art.

Characteristic	Number
Drawing	
Line	1
Band	2
Painting	
Ngununu Gwion	1
Yowna Gwion	8
Gwion part	2
Other anthropomorph	5
Apex design	1
Y-shape	1
Simple design	1
Unidentified object	2

Characteristic	Number
Battering	
Area	6
Spray	
Standard hand stencil	3
Area	1
Scratching	
Line	1
Apex design	1
Scribble area	1
Total	**31**
Fragments	12

Figure 17.1. Art Panel J, flash photograph. (Photograph by Leigh Douglas).

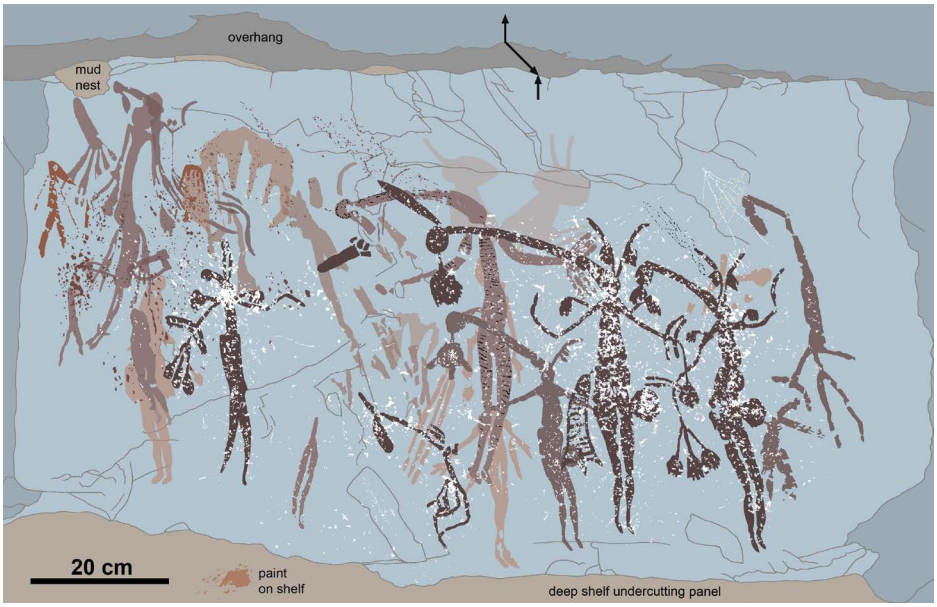


Figure 17.2. Art Panel J, photo-tracing.

Figure 17.3. Art Panel J, suite of fragmented red motifs including two horned-figure heads (#562 and #563).

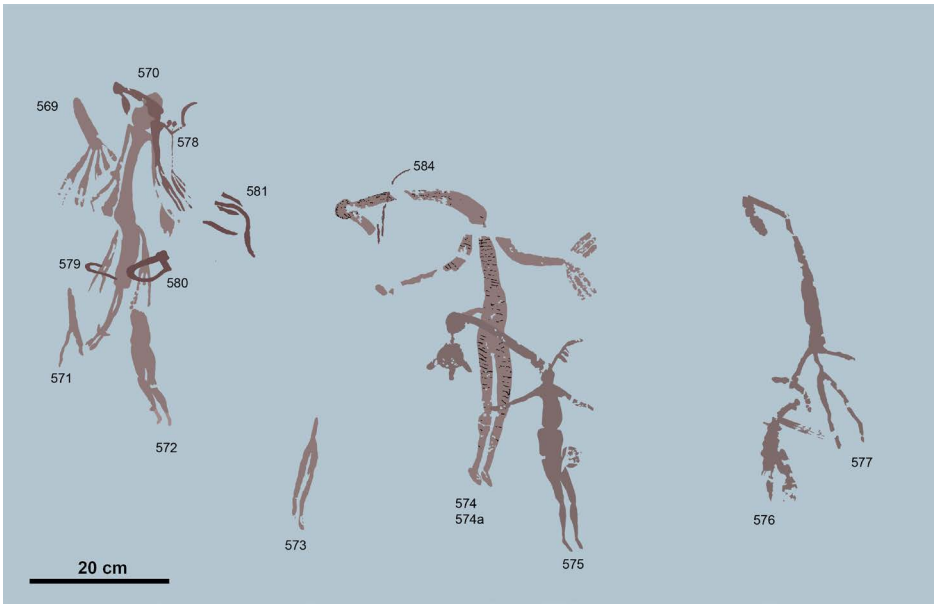


Figure 17.4. Art Panel J, three Yowna Gwion (#574, #575 and #578), a Ngununu Gwion (#570), other anthropomorphs (#572, #573, #576 and #577) and fragments.

Figure 17.5. Art Panel J, three Yowna Gwion (#582, #586 and #587), a stick figure with Yowna Gwion attributes (#585) and an object often associated with Yowna Gwion (#583).

Figure 17.6. Art Panel J, a hand stencil (#591), an indistinct pigment spray (#596), an anthropomorph (#588), three drawings (#592 and #593), two scratchings (#594 and #595) and fragments.

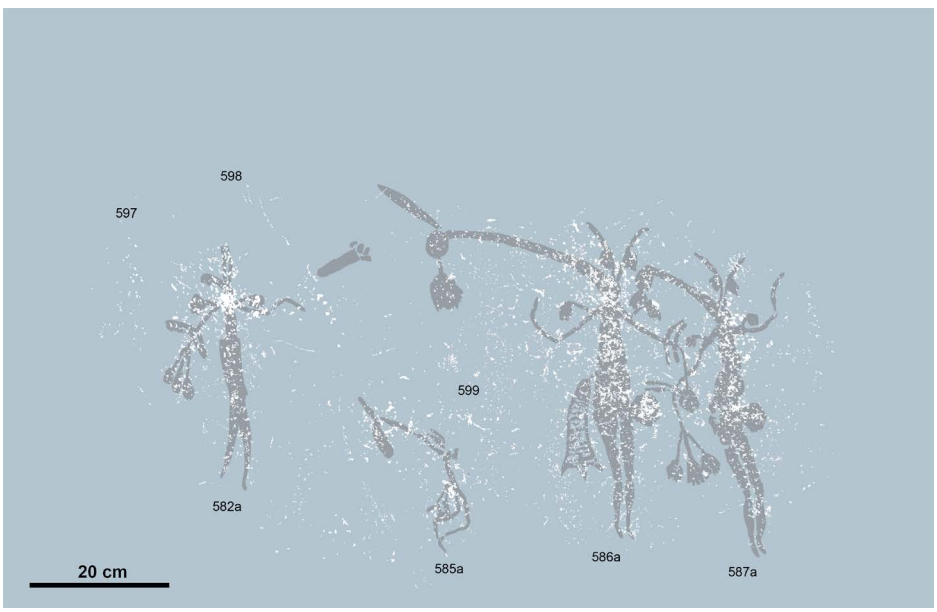


Figure 17.7. Art Panel J, position of battering across the panel.

Figure 17.8. Art Panel J, distribution of the dark red (mulberry) coloured paintings.

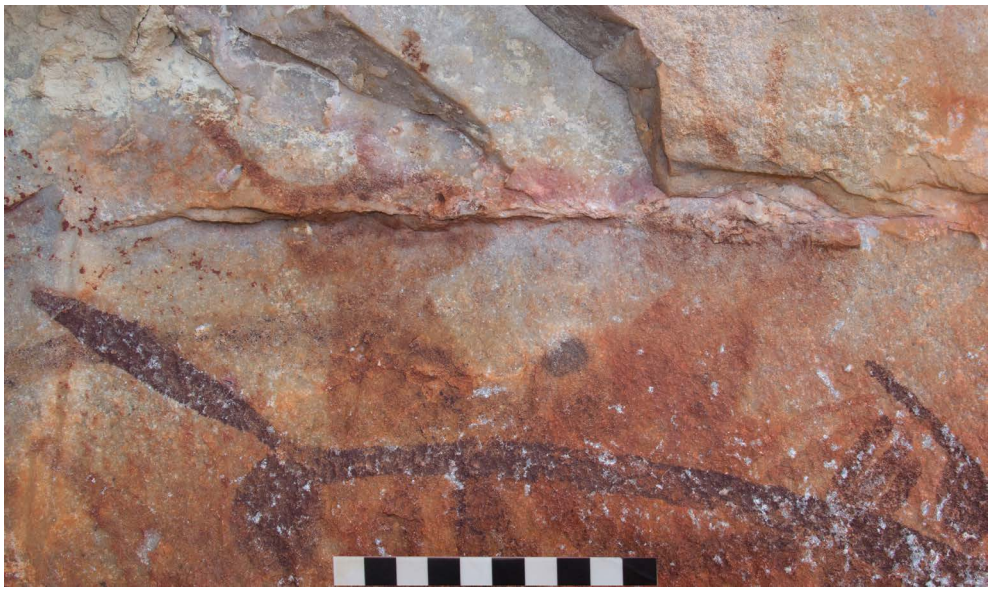


Figure 17.9. Art Panel J, details of the horned-figure heads (#562 and #563). (Photograph by Leigh Douglas).

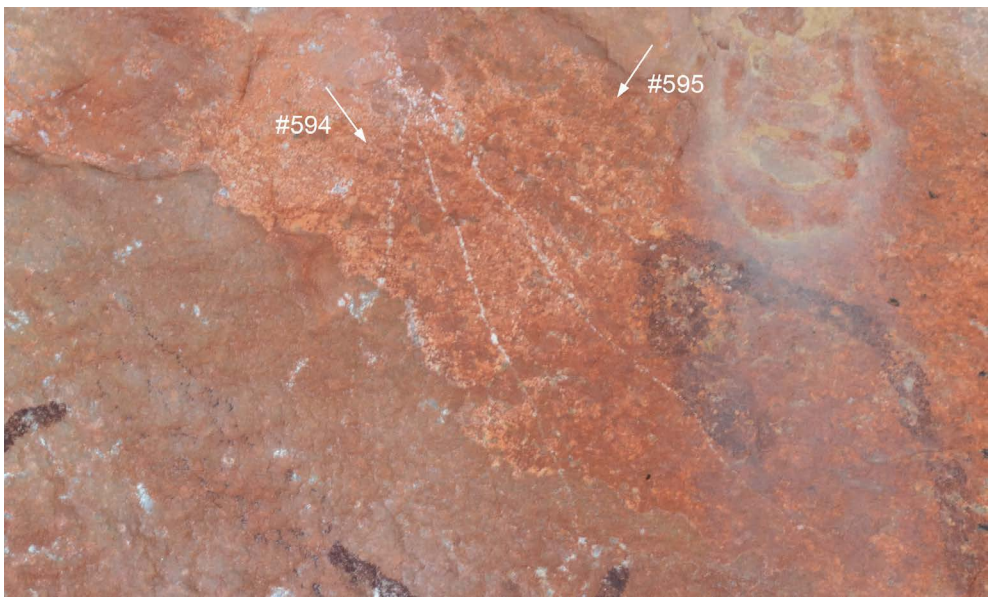


Figure 17.10. Art Panel J, details of the superposed scratchings (#594 and #595). Motif #594 overlies motif #595. (Photograph by Leigh Douglas).

panel pre-dates some of the earliest art (#562). The motifs tend to form two groups, one to the left and one to the right of the central ridge.

Fifteen dark red (mulberry) paintings dominate the panel. They consist of Gwion, other anthropomorphs, objects and fragments (Figure 17.8). These include a Ngunuru Gwion (#570) and seven Yowna Gwion (#574, #575, #578, #582, #586 and #587). A stick-like figure (#585) has the wing headdress and bent knees usually associated with Yowna Gwion. A probable Ngunuru Gwion also occurs in a fainter red pigment (#567).

The art panel has two examples of Yowna Gwion overlying Ngunuru Gwion (#578 over #570, and #574 over #567).

Five of the Yowna Gwion have been modified, but it is only the more recent of these (#582, #585–#587) that were battered. The earlier Yowna Gwion (#574) has body decoration and headdress embellishments painted in very dark (more recent?) black pigment.

Other motifs include:

- Two unusual horned heads at the top of the panel (#562, #563). Unusually, the painting of these possibly once large figures appears to have ignored the unevenness of the rock, with the head of motif #563 being on three separate rock faces (Figure 17.9).
- In the upper right of the panel, a scratched apex design (#594), slanted from upper left to lower right, overlies an earlier scratched design slanted in the opposite direction from upper right to lower left (#595) (Figure 17.10).
- A hand stencil on the left-hand side of the panel (#590) appears to be associated with a splash of pigment on the ledge below it (#590a), suggesting that the pigment used was unusually liquid.
- A spray of dark red pigment (#596) over the paintings on the left-hand side of the panel—one of the most recent motifs, as determined by its excellent preservation and its superpositioning over other motifs—does not appear to be a stencil, but rather a light spray onto the wall. The positioning of the sprayed area on the panel does not seem to have targeted any earlier motifs, though it partially overlies several.

Chapter 18
The Art of Art Panel K

Art Panel K is located on the underside of an overhanging rock face above Art Panel A3 and beneath Art Panel B (Figures 3.9 and 18.1). Art Panel K is horizontally aligned 2m above the effective shelter floor (i.e., standing on the rock slab that lies on the ground). The panel measures *c.* 6.3 × 1.5m in area (Figure 18.2) and has 44 motifs (Table 18.1). For convenience of illustration, the panel has been subdivided into two sections: Art Panel K1 (southeastern half, 28 motifs, Figures 18.3–18.5) and K2 (north-western half, 14 motifs, Figures 18.6–18.8). The panel's rock surface is relatively flat but dotted with mud-wasp nests, with some additional damage through exfoliation, fractures and salt deposits. Much of the art is faint and difficult to decipher without photo-enhancement. One stencil (#635) has been all but destroyed. Art Panels K1 and K2 are individually illustrated in this chapter, but the counts for Art Panel K are combined tallies from the two panels.

Table 18.1. Art Panel K, summary of art.

Characteristic	Number
Drawing	
Line	1
Painting	
Quadruped	1
Bar	1
Bar row	1
Line	1
Print	
Grass stalks	5
String skeins	18
Spray	
Standard hand stencil	11
Variant hand stencil	1
Object stencil	2
Total	**42**
Fragments	2

Figure 18.1. Oblique view of Art Panel K with Madelaine Kelly providing the human scale. (Photograph by Leigh Douglas).

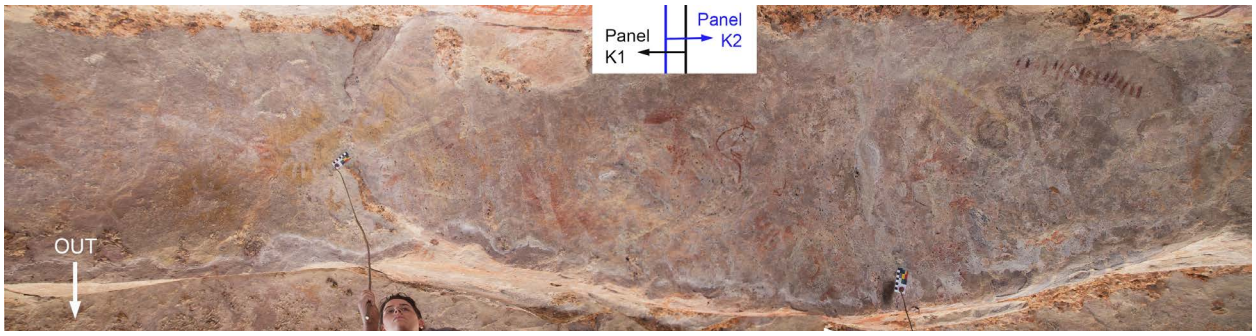


Figure 18.2. Art Panel K, photomosaic. Note differences in scale lengths – K1 and K2. (Photographs by Ken Mulvaney).

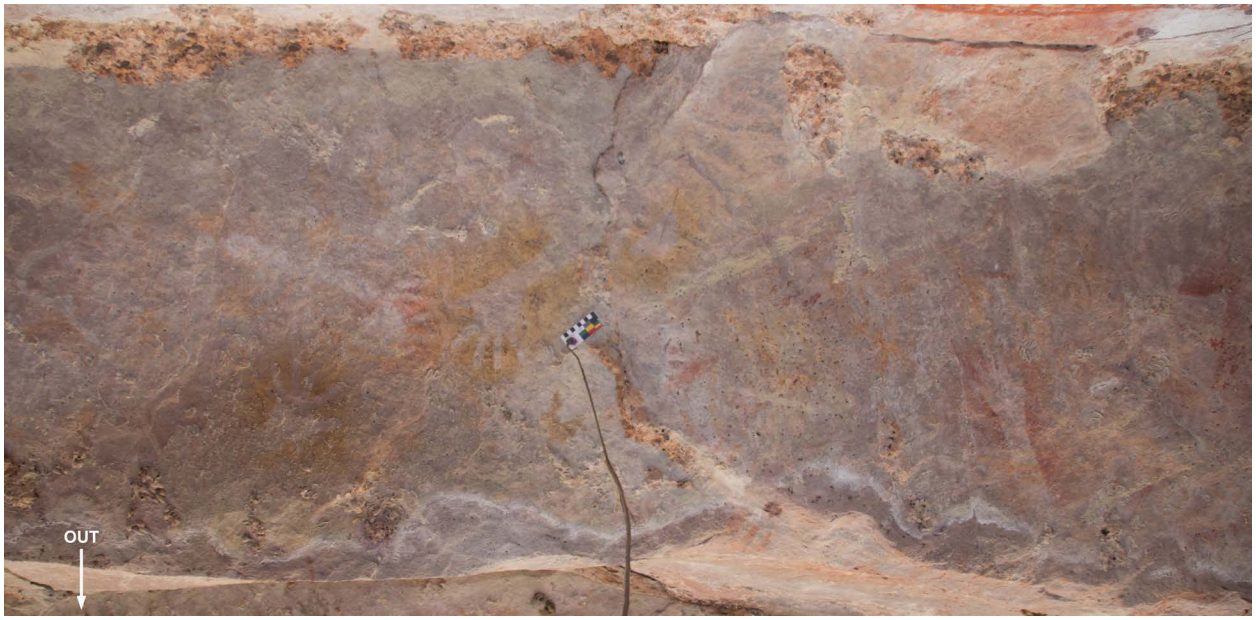


Figure 18.3. Art Panel K1, flash photograph. (Photograph by Ken Mulvaney).

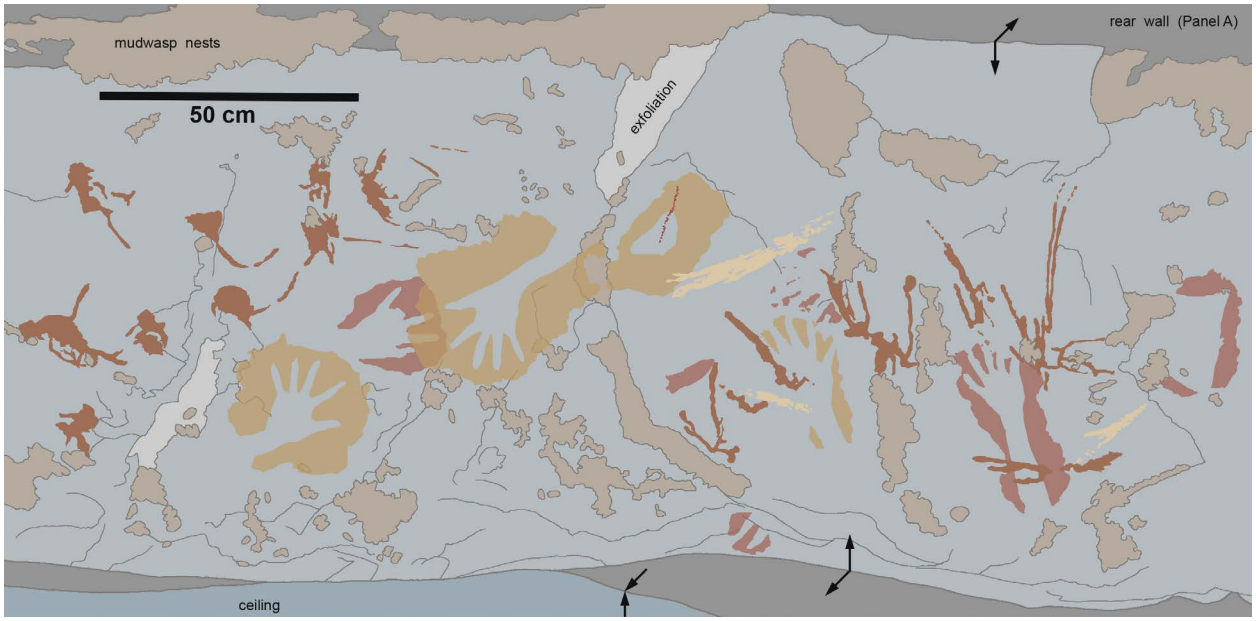


Figure 18.4. Art Panel K1, photo-tracing.

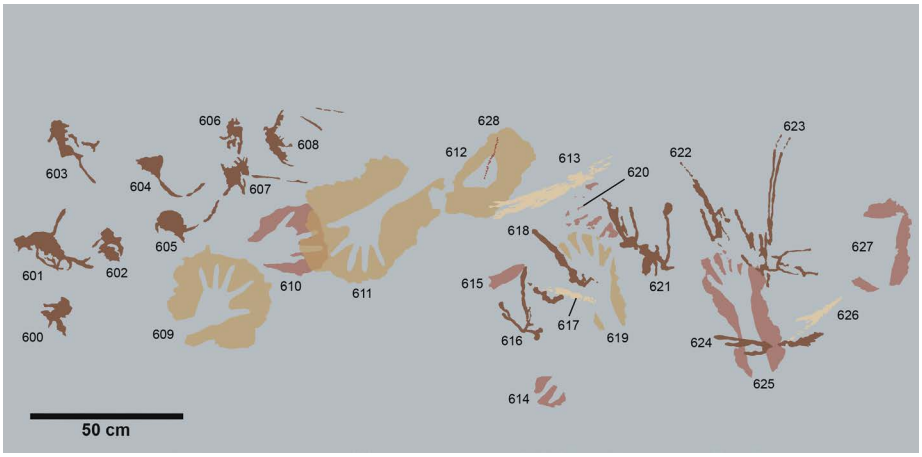


Figure 18.5. Art Panel K1, red and yellow hand stencils, brown string prints, and various other motifs.

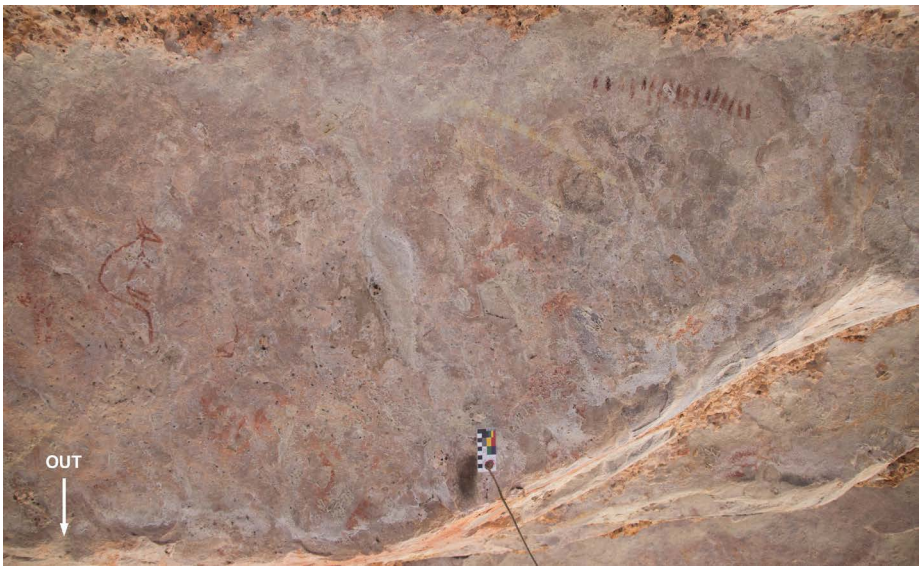


Figure 18.6. Art Panel K2, flash photograph. (Photograph by Ken Mulvaney).

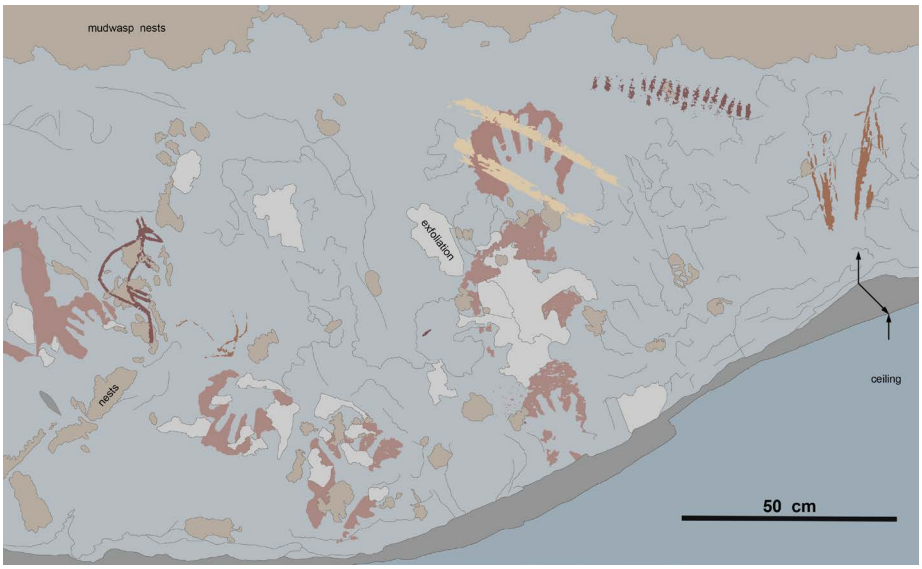


Figure 18.7. Art Panel K2, photo-tracing.

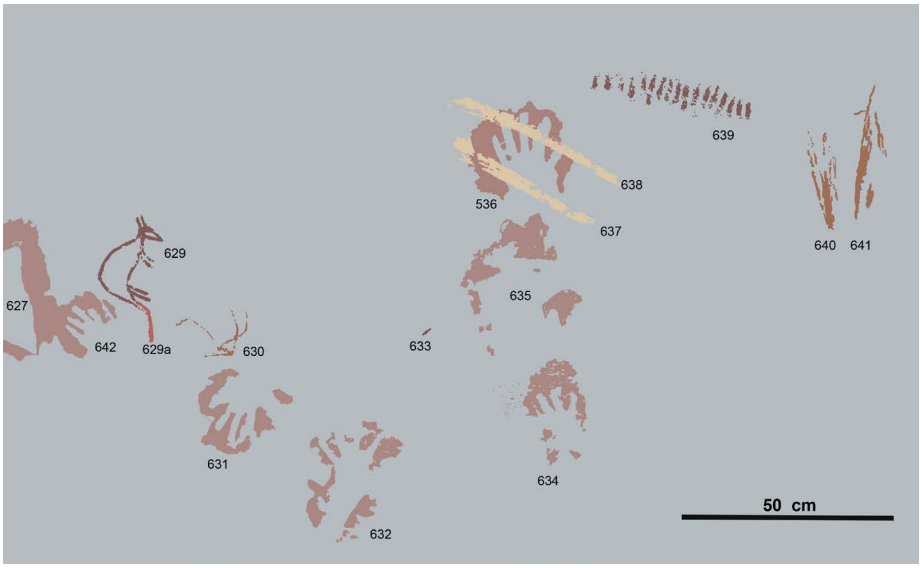


Figure 18.8. Art Panel K2, red hand stencils, cream and red grass prints, small red quadruped (#629), and dark red bar row (#639).

The most visually notable motifs are a small, red painted quadruped (#629); a bar set in dark red (#639); and two hand stencils, one in red (#625) and one in yellow (#611). Numerically, the panel is dominated by 18 string prints. These prints are concentrated in two groups (#600–#608 and #616, #618, #621–#624, #630) on Art Panel K1, with one pair (#640 and #641) at the far end of Art Panel K2. In many rock shelters of the Kimberley, grass prints are found on exceptionally high panels (up to 20m above the present floor) (e.g., Walsh 2000: 119–120). Hence, their presence only on ceiling panels at Pundawar Manbur is not exceptional.

Figure 18.9. Art Panel K2, quadruped (#629 and embellishment #629a). (Photograph by Ken Mulvaney).

Figure 18.10. Art Panel K2, dark red bar row (#639). (Photograph by Ken Mulvaney).

The macropod on Art Panel K (#629) has an extended tail added at a later date (#629a). It is the only motif with embellishment on this panel. The quadruped was originally deftly painted with a short tail (the quadruped's form is reminiscent of a bandicoot), and later modified by adding a thicker, longer tail (Figure 18.9), so that it then resembled more the form of a quoll or possum. The bar set (#639) consists of a slightly undulating row of 17 bars of uneven lengths and pigment densities (Figure 18.10).

Adjacent to the yellow hand stencil (#611) is a yellow stencil of an unknown object (#612), but whose shape, with its sharply defined edges, is reminiscent of the stencil of a metal piece pressed against the wall (Figure 18.11). If so, the stencil would have been made after the introduction of metal objects into Australia, either as a direct acquisition or through chains of connection. As the colour and density of the pigment of the adjacent and nearly connected hand (#611) and object stencil (#612) are the same, it is likely that the two are contemporaneous. This in turn would suggest that the yellow hand stencils on Art Panel K, all of which are positioned in a tight cluster, are probably of a similarly recent age dating post-1644 CE (Taçon *et al.* 2012), or more likely after European exploration (post-1837 CE) or settlement (post-1880s CE) in the Kimberley (Clement *et al.* 2012). A red line (#628) has been drawn over the object stencil (#612). Consequently, the drawn line must post-date the stencilling of the object.

Other motifs that appear to be relatively recent include five grass prints in a light cream colour (#613, #617, #626, #637 and #638), a colour that is unusual in grass prints in northern Australia. These prints retain appreciable amounts of thick pigment (e.g., Figure 18.12) and have been less subject to deleterious weathering than most other motifs on this panel. Like the drawn line mentioned above (#628), one of these prints (#613) also overlies the object stencil (#612) and is thus also likely to have been made after 1837 CE. This indicates that, while red grass prints appear to be a feature of the earliest rock art in the Kimberley (Walsh 2000: 117), cream grass prints are also present during the most recent art period.

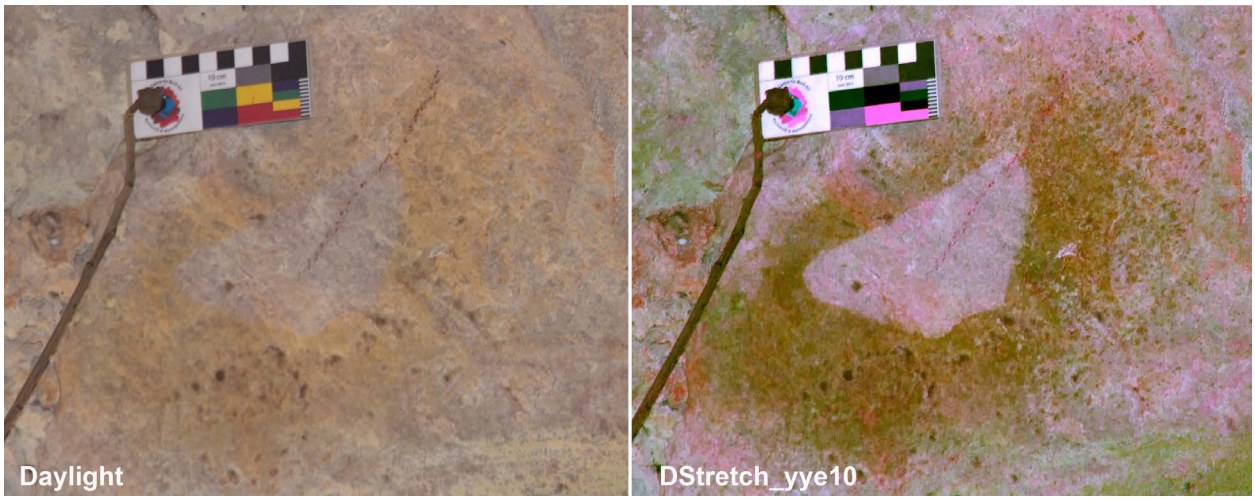


Figure 18.11. Art Panel K2, stencil of possible metal object (#612) and DStretch-yye10 enhancement. Note the drawn red line (#628) overlying the yellow stencil. (Photograph by Ken Mulvaney).

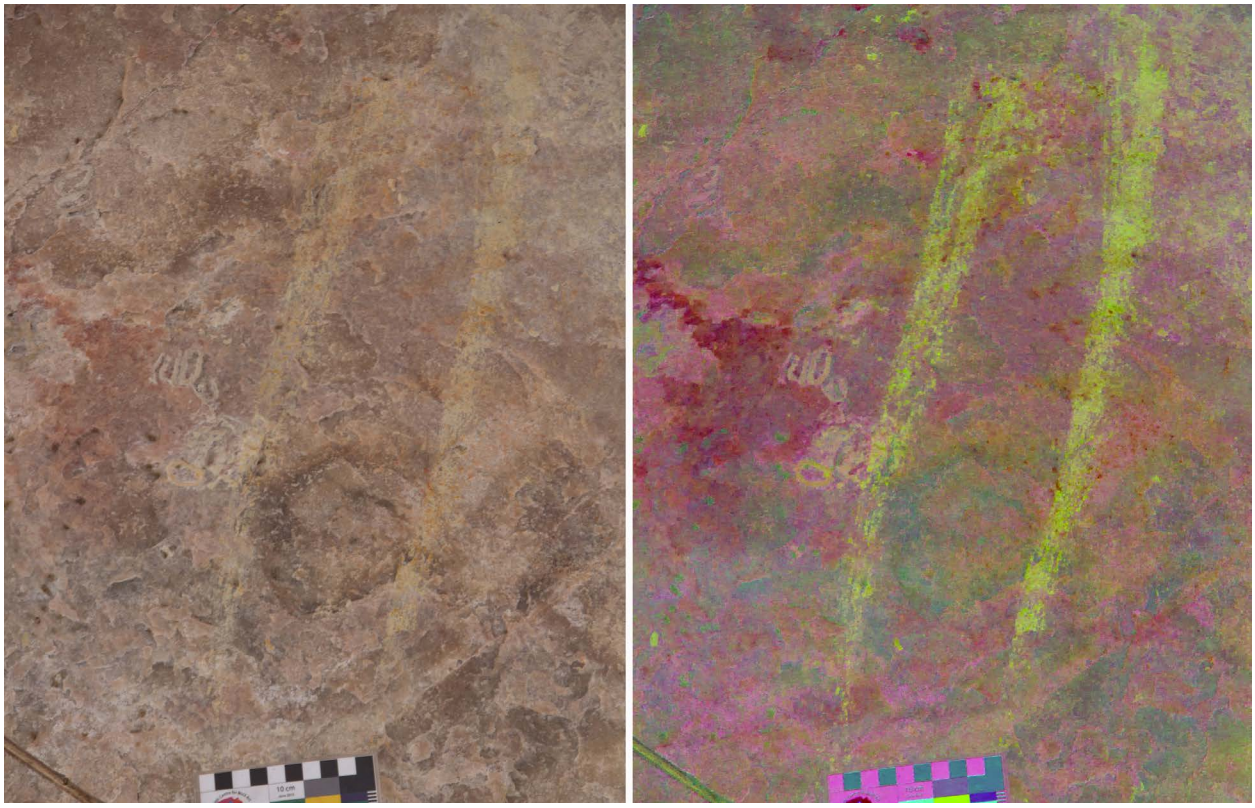


Figure 18.12. Art Panel K2, cream-coloured grass prints (#637 and #638) and DStretch_crgb10 enhancement.

Chapter 19
The Art of Art Panel L

Art Panel L is a central area of the ceiling adjacent to the rear wall above Art Panel A3 and Art Panel C (Figures 3.9 and 19.1). The ceiling is in very poor condition overall, with large areas of salt deposit, iron staining, exfoliation and mud-wasp nests (Figure 19.2). The area designated Art Panel L is somewhat arbitrary, as its edges are along an approximate boundary that frames both the visible art and the densest concentration of amorphous areas of probable pigment. The amorphous areas of pigment occur between areas of salt, beneath clusters of wasp's nests, and on the margins of exfoliated areas (Table 19.1).

Table 19.1. Art Panel L, summary of the art.

Characteristic	Number
Printing	
String skeins	20
Spray	
Standard hand stencil	1
Total	**21**

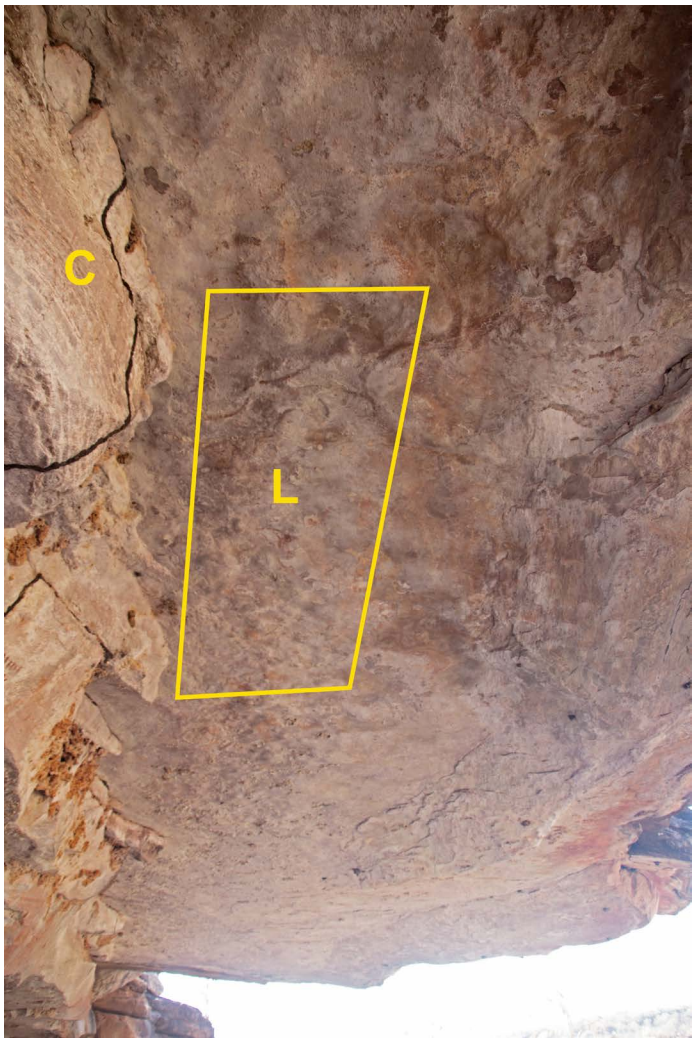


Figure 19.1. Oblique photograph of location of Art Panel L. (Photograph by Ken Mulvaney).

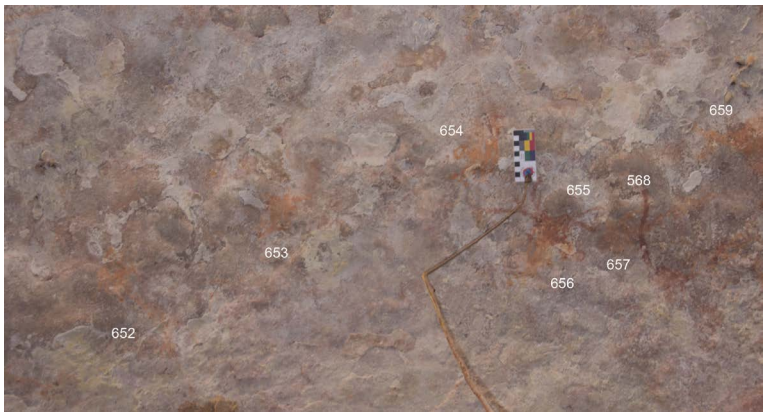


Figure 19.2. Detail of the central section of Art Panel L. (Photograph by Leigh Douglas).

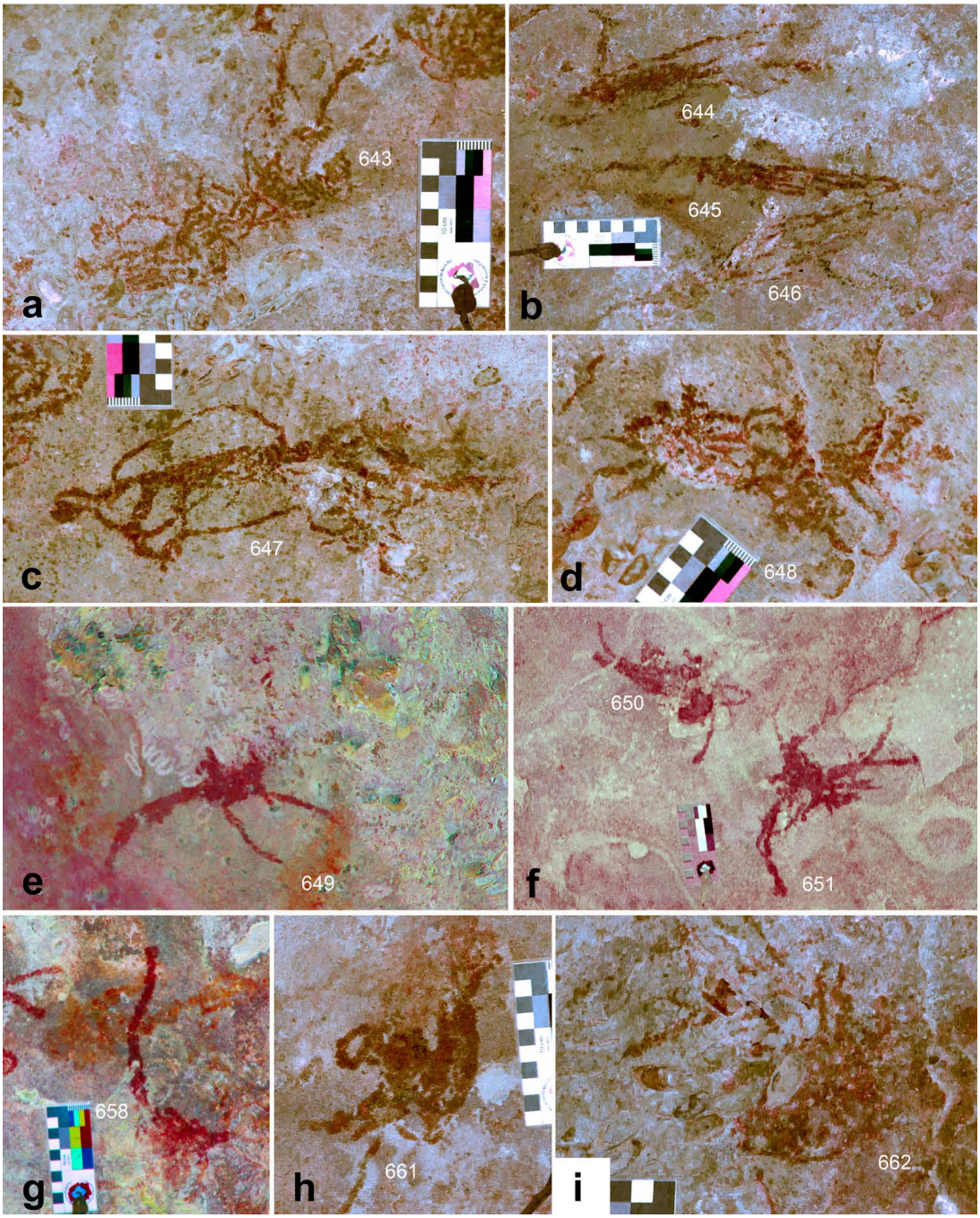


Figure 19.3. Art Panel L, selection of the ceiling string prints. All are shown as enhanced images: a–d, h–i: DStretch_lye10. e: DStretch_yrd10. f: DStretch_yre10. g: DStretch_lrd10.

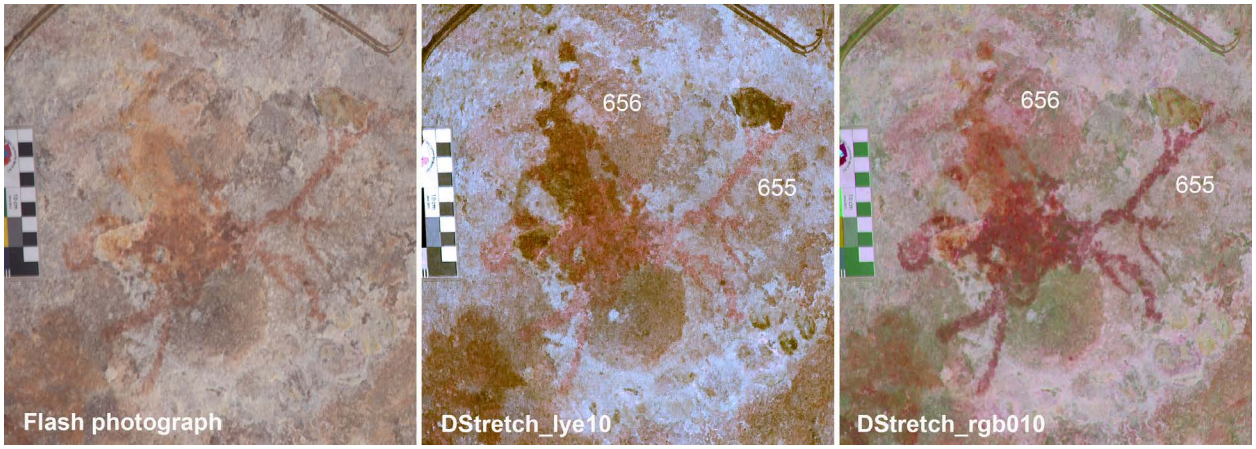


Figure 19.4. Art Panel L, showing superpositioning of two string skein prints: DStretch_lye10 highlighting the orange-red pigment (#656) over red pigment (#655), and DStretch_rgb010 highlighting the underlying red pigment (#655).

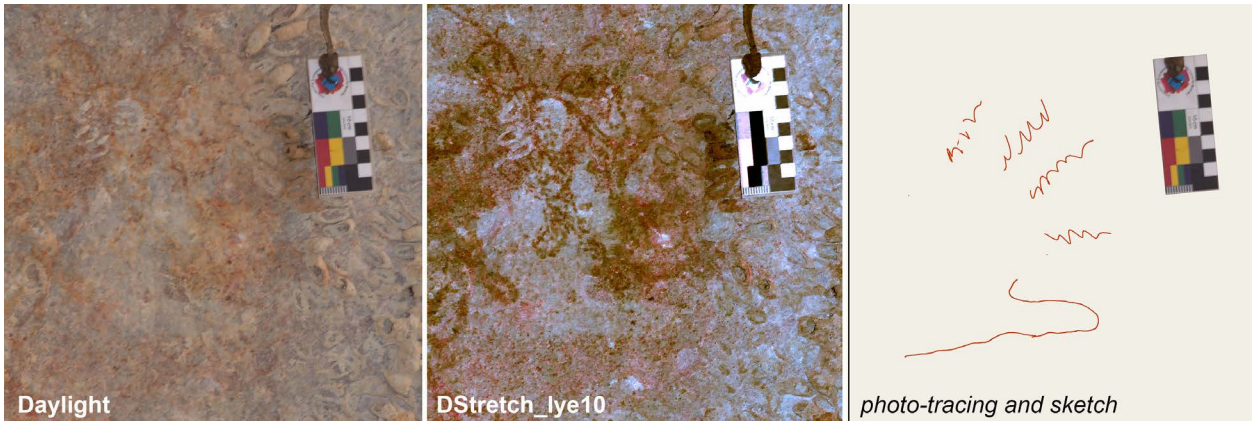


Figure 19.5. Art Panel L, remnant hand stencil (#663): photograph, DStretch_lye10 enhancement and resultant interpretation.

All but one of the identified motifs (i.e., the non-indeterminate motifs) are imprints of string skeins. They are in poor to very poor condition (Figures 19.2–19.4). Eleven of the identified prints are in orange-red pigment, with the other nine in red. The orange-red pigment overlies the red pigment, and is therefore consistently more recent (Figure 19.4).

The exceptional motif (#663) is a remnant hand stencil in extremely poor condition; it required the use of image enhancement (DStretch) for clarification (Figure 19.5). The diagonal marking coming from the top left of Figure 19.5 and crossing over the stencil is just a stained fracture in the rock, despite its visual similarity to a string loop.

PART C
Superpositions at Pundawar Manbur

Introduction
Superpositions at Pundawar Manbur

Motif superpositioning is fundamental in determining change in art over time. The aim of the following chapters (20–24) is to systematically construct micro-stratigraphic sequences for the art of Art Panel A by assessing Art Panels A1–A5 individually. We bear in mind Walsh's (2000: 52) warning quoted at the beginning of this monograph and repeated here for emphasis,

> *We need to be extremely cautious in making determinations of the sequential order of any Kimberley rock art based solely on the visual appearance of its preservation, contrast, colour or degree of exfoliation.* [...] *Those who offer "all the answers" should be treated with caution.*

In the following chapters we examine each motif for its order of superposition with other motifs. From this, Harris Matrices are constructed of all the superpositions on each Art Panel. Initially, an unvalidated matrix will show all possible instances of superpositioning. This can subsequently be validated within the programme. This process removes redundant associations more clearly revealing the obtained sequence. Independent evidence of relative chronology is added to create horizontal (contemporaneous) associations. The independent evidence is derived from corresponding attributes such as similarity of pigment colour, degree of preservation, style or sharing of Morellian features across non-superposed sequences. Also integrated are floating motifs not involved in superpositioning. These are assembled into the sequential horizons of the Harris Matrices on the basis of shared similarities such as pigment colour, technique, motif style, Morellian attributes and so forth. For clarity, Morellian attributes are minute details of a work's execution, such as a similar painting technique, a particular combination of colours ('paint pot' or recipe), or the repetition of idiosyncratic features used by the artist (Morelli 1896; see also Gunn and Lowish 2017; Perig 1991). Incorporating so much information, the final Harris Matrices can be very large. Thus, for the Harris Matrices provided in Part C, a DOI link has also been included in the caption to point those who wish to view the fine detail to full-size high-resolution versions.

The 'layers' produced in the Harris Matrix do not necessarily reflect the full chronological sequence represented at the site, as the Harris Matrix of any Art Panel may not have enough superpositions for the complete sequence to be determined. The assignment of a motif to a particular interpreted Harris Matrix layer (i.e. after additional information on motif contemporaneity is added, such as shared Morellian attributes) can be made only as long as it does not contradict the position of the motif in the raw Harris Matrix sequence. If such a contradiction was applied, the Harris Matrix programme would alert the user by preventing the making of a Harris Matrix for that Art Panel. Once a raw Harris Matrix has been created, the further association of raw layers into an interpreted sequence enables more motifs to be added into the relative sequence. This is the aim of Part C of this monograph: the five sub-panels of Art Panel A are amalgamated into a single sequence to provide an overall relative sequence for as many of the motifs of Art Panel A as possible (i.e. for all of the motifs with sufficient relevant relative chronological information) (Chapter 25). Note, however, that Harris Matrix layers can only be constructed when there is enough information to chronologically differentiate motif sets. Harris Matrix layers may not, therefore, be able to differentiate individual artistic *events* if the motifs from those art events are not in superposition and if no other details allow for their relative vertical (chronological) positioning. In Chapter 25, we add information on AMS radiocarbon ages obtained for individual motifs. These radiocarbon ages enable us to anchor individual motifs, Harris Matrix layers and motif types into dated sequences.

The interpreted Harris Matrix from each Art Panel shows their layering, with Layer 1 as the uppermost layer of the Harris Matrix sequence *on that particular panel*. The motif set forming Layer 1 on one panel might not occur as Layer 1 on another panel as, at this stage, the five Harris Matrices representing each of the five Art Panels are independent of each other.

In the interpreted Harris Matrix presented for each Art Panel, the solid lines between individual motifs represent direct superpositions between motifs or sets of motifs, and the dotted grey lines indicate inferred associations between different sets of motifs generally based on apparent differences or similarities such as in pigment colour, technique, style or Morellian features (as demonstrated by hypothetical motifs #5 and #7 on Fig. C.1, for example). In the Harris Matrices, motifs are designated by their motif numbers, with motifs represented in green indicating that they are preceded *and* followed by other motifs in a given sequence; those represented in red indicate that the motif lies either at the beginning or at the end of a sequence, or that it is a stand-alone (i.e., not involved in any direct superposition).

A limitation of interpreting a Harris Matrix is when a motif is in superposition with only a limited number of other motifs. Figure C.1A presents a raw Harris Matrix (the 'unvalidated' matrix of the Harris Matrix programme) with six motifs, with all vertical (superposition) associations demonstrated. The sequence of motifs #1–#6 is clearly sequential. Motif #7 is superposed by motif #2, so the two are also locally sequential. Their chronological relationships with motifs #4, #5 and #6, however, is not evident from this information alone: these two superposition sequences are isolated and independent of each other. This isolation can be resolved by using key elements of each motif's art style or motif construction (i.e., Morellian features), as noted above. This reconciliation of motifs by additional details that chronologically match one motif with another is depicted in the 'interpreted Harris Matrices', which aggregates both confirmed parallel sequential and comparable isolated motifs into shared layers. In the example shown here (Figure C.1), if the pigment colour of a motif is, in this case, clearly a correlating factor, then motifs #5 and #7 map onto the interpreted Harris Matrix as contemporaneous (Figure C.1A, forming a single layer (Figure C.1B)). While motifs #2 and #3 have different attributes, they are also interpreted as having a common position in the relative sequence of layers as a result of their shared order in the structure of the interpreted Harris Matrix. Motifs #2 and #3 then form two separate but relatively contemporaneous layers between motifs #1 above (i.e., after) and #4 below (i.e., before) them.

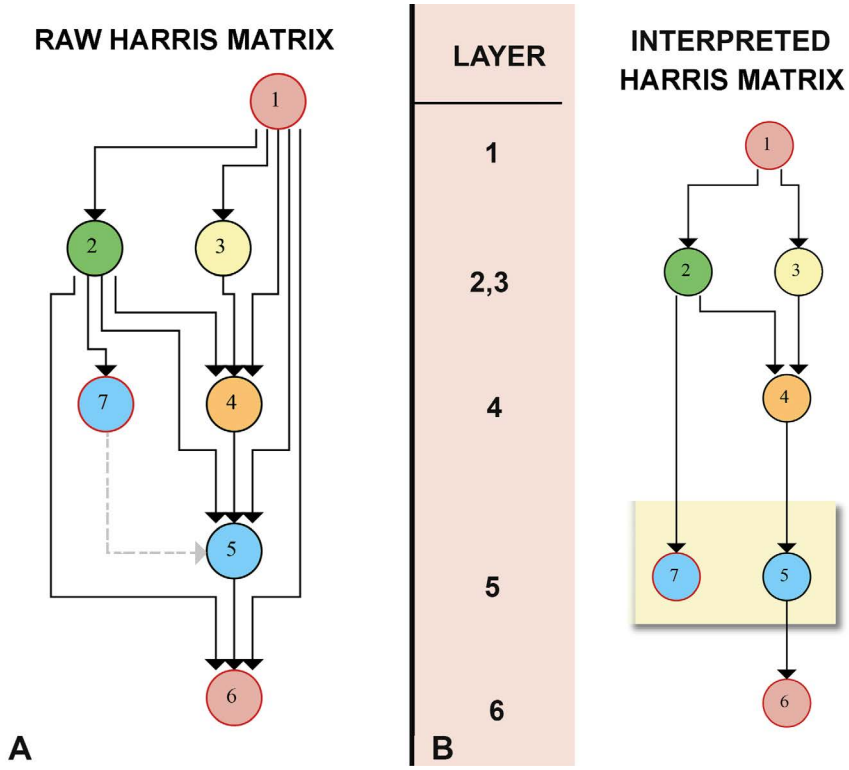


Figure C.1. Interpreting Harris Matrices. A: Example of a raw, unvalidated matrix. B: Example of corresponding interpreted layers, where redundant associations have been removed and evidence of relative chronology are added to form any contemporaneous associations. In this example, motifs #5 and #7 are considered contemporaneous through having corresponding attributes. The colours in the circles on this figure, representing the individual motifs, are for demonstrative purposes only.

Chapter 20
Art Panel A1 Superpositions

All but one of the motifs (#12) of the 28 on this panel are involved in superpositions (Table 20.1; Figure 20.1). The superposed motifs are interpreted to form 13 layers (Tables 20.2–20.4; Figure 20.2), with scratchings being among the most recent motifs (uppermost in the sequence of superpositions) and hand stencils among the earliest (lowermost).

Table 20.1. Art Panel A1, list of motif superpositions. The motifs in the orange cell are not involved in superposition relationships.

Overlying Motifs	Art Panel A1 Motifs	Underlying Motifs
2	**1**	
	2	1, 3, 7
2	**3**	7
5	**4**	6, 7
	5	3, 4, 7
4	**6**	7
2, 3, 4, 5, 6	**7**	8
7, 9	**8**	
13	**9**	8, 10
9	**10**	11
10	**11**	
	12	
	13	9
	14	16, 186
16	**15**	
14, 17, 186	**16**	15, 18, 20
	17	16, 18
16, 17	**18**	
	19	20, 26
16, 19, 21, 186	**20**	
22	**21**	20
25, 25a	**22**	23, 21
22, 25, 25a	**23**	
25, 25a, 26	**24**	
25a	**25**	22, 23, 24, 26
	25a	22, 23, 24, 25, 26
25, 25a, 19	**26**	24
14	**186**	16, 20

Table 20.2. Art Panel A1, art layer components from the interpreted Harris Matrix. Green cells indicate that the relative sequence of these layers is not demonstrated on this panel and is derived from common attributes with motifs on the adjacent art panel sequences.

Layer	Art Panel A1 Motifs	# of Art Elements
A1-1	2, 5,13, 14, 17, 19	6
A1-2	186, 4	2
A1-3	6	1
A1-4	12	1
A1-5	25a	1
A1-6	3	1
A1-7	1, 25	2
A1-8	16	1
A1-9	22	1
A1-10	9	1
A1-11	21, 26	2
A1-12	7, 10, 20, 23, 24	5
A1-13	8	1
A1-14	11, 15, 18	3

Table 20.3. Summary of Art Panel A1's art layer superpositions. Key: Superposed relationships: in x/y, x is superposed directly over y. Assumed relationships: in x/y (x is younger than y, but not in direct superposition). x = y (x and y are contemporaneous).

A1 Layer superpositions: 1/2, 2/3, 5/7, 9/11, 11/12, 12/13, 12/14
A1 Assumed contemporaneous layers: nil
A1 Assumed layer relationships (unconfirmed on this panel): 3/4, 4/5, 5/6, 6/7, 7/8, 8/9, 9/10, 10/11, 13/14
A1 Unassigned layer relationships: nil

Table 20.4. Summary of Art Panel A1's art layers. The green cells indicate the relative sequence of these layers is not evident on this panel.

A1 Layers	# of Motifs	Major Colours	Major Motif Forms	Major Characteristic
1	6	unpatinated	outline + infill	Scratchings; anthropomorph
2	2	unpatinated	linear	Scratchings; small non-figurative
3	1	red	linear	Drawing; small non-figurative
4	1	red	linear	Drawing; small non-figurative
5	1	unpatinated	solid	Battering; engagement
6	1	dark red	solid	Painting; Dalal Gwion
7	2	dark red	solid + linear	Painting; Ngunuru Gwion
8	1	yellow	solid + linear	Painting Ngunuru Gwion
9	1	red	outline + infill	Painting; snake
10	1	red	stencil	Spray; boomerang pair
11	2	red	outline + infill	Painting; large fauna
12	5	dark red	stencil	Spray; variant hands
13	1	red	solid	Painting; large fauna
14	3	red	stencil	Spray; hands

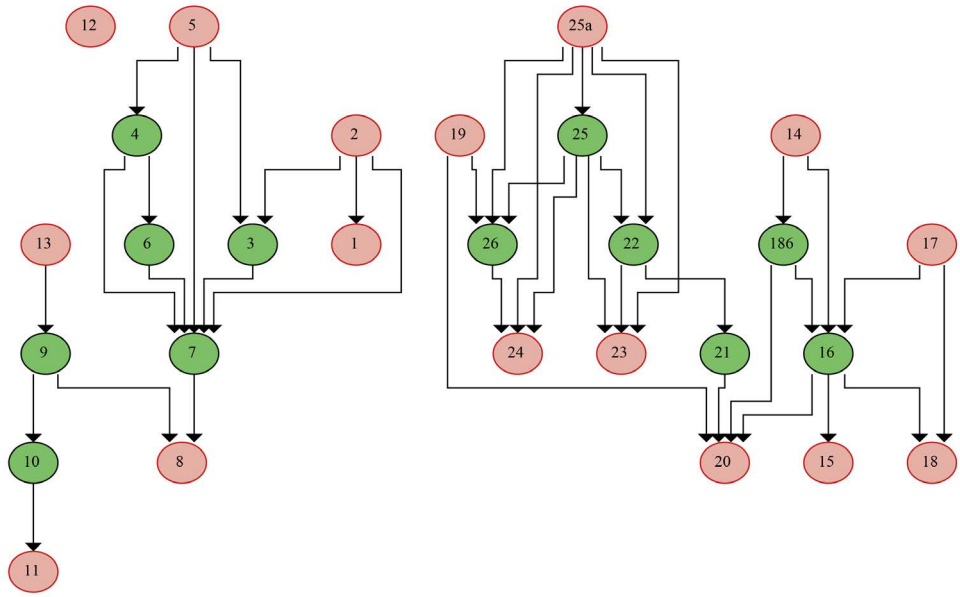


Figure 20.1. Raw Art Panel A1, Harris Matrix of motif superpositions. Green cells reflect those with both a lower and upper association.

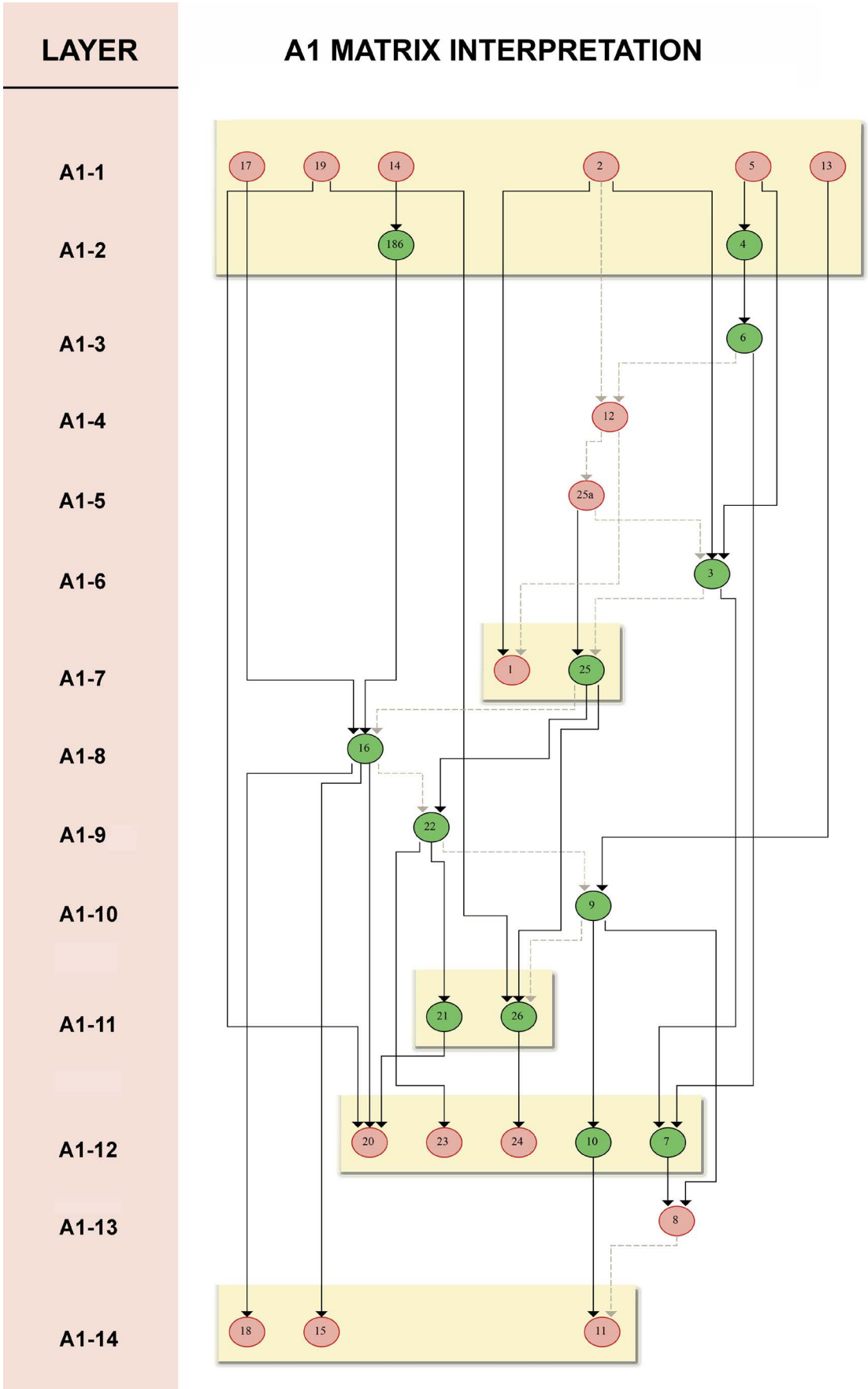


Figure 20.2. Interpretation of the Art Panel A1 Harris Matrix. The full-size of the Harris Matrix is 32 × 50cm.

The relative position of motifs #12 and #25a (Layers 4 and 5) in the sequence is not evident from this panel because of a paucity of superpositions. If patterns of superposition on other panels at this site (see below) are more broadly applicable, motif #12 (a red drawing) would be more recent than motif #25a (battering). Similarly, the chronological relationship between Layer 10 (motif #9) and Layer 11 (motif #26) cannot be determined from superpositioning on this panel, although these layers are in close chronological association (either Layer 10 was done before Layer 11, or vice-versa). The relative position of Layers 10 and 11 in the sequence is, therefore, determined by the better clarity of the motif in Layer 10 (motif #9) than that in Layer 11 (motif #26).

The better preservation of motif #8 in Layer 13 suggests that it is more recent than the hand stencil (#11) in Layer 14. The two motifs were created in similar pigment colours and are located adjacent to each other on the panel. On the same basis, the amorphous area of motif #7 is assigned the same layer as the adjacent hand stencil (#10) in Layer 12.

Chapter 21
Art Panel A2 Superpositions

Of the 73 motifs on this panel, only six are not involved in superposition (Table 21.1; Figure 21.1). All 73 motifs are in poor to very poor condition. The superposed motifs are interpreted to form 14 layers (Tables 21.2–21.4; Figure 21.2), with dark red drawings and battering being among the most recent motifs on this panel, and red hand stencils among the earliest.

On the basis of their superpositioning and excellent state of preservation, the most recent motifs on this art panel are two dark red, dry pigment drawings: Motif #92, which is a pair of lines 10cm long, and motif #93, which is an apex design 15cm long (Figure 6.6). The most recent painting on this art panel is a larger simple design (#44, ovoid + appendage; 103 × 62cm) in red, and a short pair of converging lines (#58) in the same red colour (Figure 6.6). These two paintings are considered to be contemporaneous.

The most prominent motifs on the panel, however, are a pair of large Ngunuru Gwion from Layer 6 (#25 and #37), and two hand stencils from Layer 11. The hand stencils comprise an open hand (#51) at the top of the panel, and a variant hand (#48) near the bottom (Figure 6.1). The prominence of motif #51 is due its good pigment preservation, which in turn is a result of its more protected positioning at the top of the art panel, rather than age. Its hue is similar to that in the variant hand stencil (#90). The comparable size, colour and degree of preservation of motifs #90 and #48 suggest that they are probably of the same hand, hence the association of these three motifs (Figure 6.4).

Based on their colour similarities, comparable states of preservation, and the concentration of the use of yellow pigment on this art panel, all of the yellow motifs here, and the single yellow Gwion on Art Panel A1 (#16), are probably contemporaneous. This includes the three yellow Gwion (#40, #74 and #75), the set of three yellow hand stencils (#66, #67 and #94), and the two yellow fragments (#69 and #91) (Figures 6.2 and 6.3). These yellow images pre-date the red Gwion, as the yellow anthropomorph (#69) is superposed by a red anthropomorph (#68), which is contemporaneous with the red Gwion figures on the art panel.

Red Gwion motifs (#79, #80 and #88, #89) occur as overlapping pairs, with the motif on the right in each case superposing that on the left (Figure 6.3). While motifs #79 and #80 appear contemporaneous to each other, the style and colour differences between motifs #88 and #89 suggest they were done by different artists at different times. The alignment of the darker motif #89 parallel to the headdress of the lighter motif #88 does, however, suggest a deliberate association of the two Gwion figures (and also with the underlying variant hand stencil, #90). While motif #88 is a clear Ngunuru Gwion, motif #89 is probably a late Ngunuru Gwion as it has a tassel typical of Ngunuru Gwion as well as the bent knee characteristic of later Yowna Gwion.

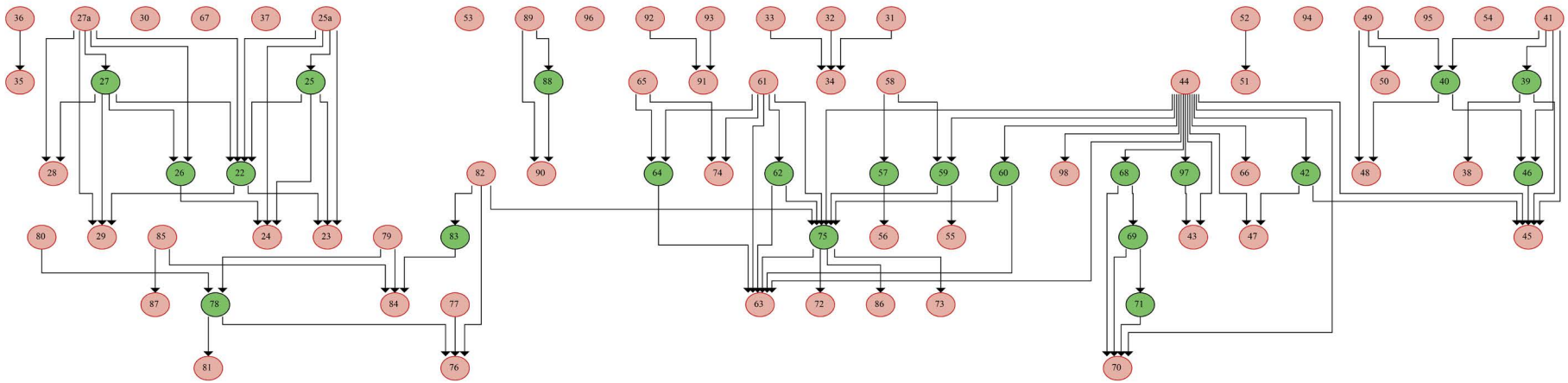


Figure 21.1. Art Panel A2, unvalidated Harris Matrix of motif superpositions. The green cells are the motifs with both a lower and upper association.

For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure21-1

Table 21.1. Art Panel A2, list of motif superpositions. Motifs in the blue cells also occur in Art Panel A1. Those in the orange cells are not involved in superpositions.

Overlying Motifs	A2 MOTIFS	Underlying Motifs
25, 25a, 27, 27a	**22**	23, 29
22, 25, 25a	**23**	
25, 25a, 26	**24**	
25a	**25**	22, 23, 24
	25a	22, 23, 24, 25
27	**26**	24
27a	**27**	22, 26, 28, 29
	27a	22, 26, 27, 28,29
27, 27a	**28**	
27, 27a, 22	**29**	
	30	
	31	34
	32	34
	33	34
31, 32, 33	**34**	
36	**35**	
	36	35
	37	
39	**38**	
41	**39**	38, 45
41, 49	**40**	46, 48
	41	39, 40, 45, 46
	42	45, 47
44, 97	**43**	
	44	42, 43, 45, 47, 59, 60, 63, 66, 68, 70, 75, 97, 98
39, 41, 42, 44	**45**	
40, 41	**46**	45
42, 44	**47**	
40, 49	**48**	
	49	40, 48, 50
49	**50**	
52	**51**	
	52	51
	53	
	54	
59	**55**	
57	**56**	
58	**57**	56
	58	59, 57

Overlying Motifs	A2 MOTIFS	Underlying Motifs
44, 58	**59**	75, 55
	60	63, 75
	61	62, 63, 64, 74, 75
61	**62**	63, 75
44, 60, 61, 62, 64, 75	**63**	
61, 65	**64**	63, 65
	65	64, 74
44	**66**	
	67	
44	**68**	69, 70
68	**69**	70, 71
44, 68, 69, 71	**70**	
69	**71**	70
75	**72**	
75	**73**	
61, 65	**74**	
44, 59, 60, 61, 62, 82	**75**	63, 72, 73, 86
77, 78, 82, 83	**76**	
	77	76
79, 80	**78**	76, 81
	79	78, 84
	80	78
78	**81**	
	82	76, 83
82	**83**	84
79, 83, 85	**84**	
	85	84, 87
75	**86**	
85	**87**	
	88	90
	89	90
88, 89	**90**	
92, 93	**91**	
	92	91
	93	91
95	**94**	
	95	94
	96	
44	**97**	43
44	**98**	

Table 21.2. Art Panel A2, art layer components from the interpreted Harris Matrix. The layers in the blue cell (A2-4 and A2-5) are interpreted as broadly contemporaneous. Although motif #41 in Layer A2-4 has a different colour density to those in Layer A2-5, their contemporaneity is implied by their correlation in the Harris Matrix. The green cells are the layers whose position in the relative sequence is not evident on this panel. The '# of motifs' include all motifs from Art Panel A2 plus those that overlap with Art Panel A1.

LAYER	MOTIF #	# of art elements
A2-1	92, 93	2
A2-2	44, 58	2
A2-3	25a, 27a	2
A2-4	41	1
A2-5	52, 60, 61, 65, 82	5
A2-6	49, 64, 95, 96, 97, 98	6
A2-7	25, 27, 31, 32, 39, 42, 43, 59, 62, 68, 77, 79, 80, 88, 89	15
A2-8	40, 66, 67, 69, 74, 75, 91, 94	8
A2-9	36, 37, 53, 54, 55, 57	6
A2-10	22, 50, 78, 83, 85	5
A2-11	26, 30	2
A2-12	23, 24, 28, 29, 48, 51, 63, 76, 84, 86, 90	11
A2-13	33, 35, 38, 46, 47, 56, 71, 72, 73, 81, 87	11
A2-14	34, 45, 70	3

Table 21.3. Summary of Art Panel A2's superposition layers. Key: Superposed relationships: for x/y, x is superposed directly over y. Assumed relationships: for x/y, x is younger than y, but not in direct superposition. x=y means that x and y are contemporaneous.

A2 Layer superpositions: 5/6, 6/7, 7/8, 7/10, 7/11, 11/12, 13/14
A2 Assumed contemporaneous layers: 4=5
A2 Assumed layer relationships (unconfirmed on this panel): 1/2, 2/3, 3/4, 3/5, 8/9, 9/10, 10/11, 12/13
A2 Unassigned layer relationships: nil

Table 21.4. Summary of the Art Panel A2 layers, including the motifs overlapping with Art Panel A1. The layers in the blue box are interpreted as broadly contemporaneous. The position in the relative sequence of those in the green boxes is not evident on this panel.

A2 Layers	# of Motifs	Major Colours	Major Motif Forms	Major Characteristic
1	2	dark red	linear	Drawing; small non-figurative
2	2	red	linear	Painting; large non-figurative
3	2	unpatinated	solid	Battering; engagement
4	1	red	linear	Painting; unknown
5	5	red	linear	Painting; non-figurative
6	6	dark red	linear	Painting; non-figurative
7a	14	dark red	solid + linear	Painting; Ngunuru Gwion
7b	1	dark red	solid + linear	Painting; Ngunuru Gwion
8	8	yellow	solid + linear	Painting; Ngunuru Gwion
9	6	red	linear	Painting; non-figurative
10	5	red	outline + infill	Painting; figurative
11	2	red	outline + infill	Painting; large fauna
12	11	dark red	stencil	Spray; variant hands
13	11	red	stencil	Spray; hand stencils
14	3	red	stencil	Spray; hand stencils

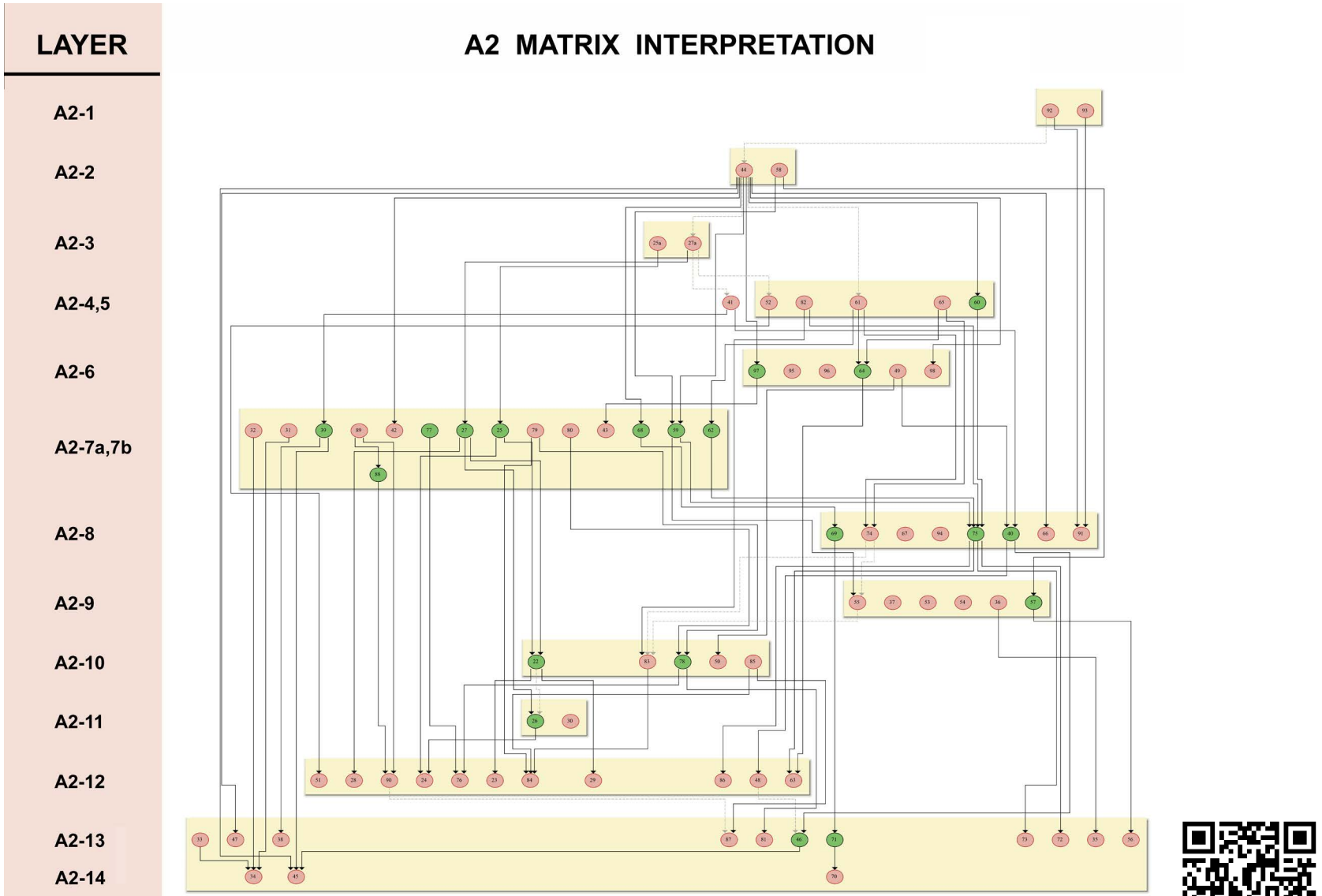


Figure 21.2. Interpretation of the Art Panel A2 Harris Matrix. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 90 × 70cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure21-2

Chapter 22
Art Panel A3 Superpositions

Sixty-three motifs occur on this panel, only 14 of which are not involved in superpositions (Table 22.1; Figure 22.1). Most of the motifs are in poor to very poor condition, with only the lower portions of two central Gwion figures (#127 and #128) being readily discerned. Overlying these Gwion figures are the remnants of a Wanjina head and headdress in white and red (#138 and #138a). While areas and fragments of the white pigment are still present, the deterioration of much of the motif's pigment makes the full form of the image either indistinct or incomplete.

The superposed motifs are interpreted to form 16 art layers (Tables 22.2–22.4; Figure 22.2), with dark red drawings and battering being among the most recent motifs on this panel, and red hand stencils (both standard and variant types) among the earliest.

The most prominent motifs on the panel are a pair of dark red (mulberry) Ngununu Gwion (#127 and #128) and the overlying remnants of a large Wanjina head including its white rayed headdress (#138) (Figure 7.7). The upper rays of the white headdress were later outlined in red (#138a; Figure 7.8). However, the Wanjina image (#138) is not the most recent image on the panel, as it was superposed by a scratched motif (#156: an unidentified implement or simple design; Figure 7.19). In turn, motif #156 is superposed by a large, solid motif in yellow that is partially outlined in white (#155; Figures 7.20 and 22.3). Even though this yellow motif is the most recent on the panel, as here it is the uppermost in the superposition sequence, the greater part of it has deteriorated to such an extent that even DStretch enhancement could not fully recover its original shape.

Three black and one red drawings (#152–#154 and #151, respectively) are superposed over the white of the Wanjina figure (#138), but their relationship with the yellow painting (#155) and the scratching (#156) is not evident (Figure 7.18). On the basis of their similar state of preservation and position in the superposition sequence, the six red drawings (#145–#150) and four black drawings (#151–#154) on this panel (Figure 7.6) appear to be contemporaneous.

On this panel, the Yowna Gwion (#132–#136) have deteriorated more than the Ngununu Gwion (#127–#129). This deterioration is probably a consequence of the more weathered state of the pigments on the right-hand half of the art panel, where the Yowna Gwion are positioned (Figure 7.1). Despite these differences in preservation, the similar pigment colours and overall motif definition of the two groups suggests that motifs #132–#136 (the Yowna Gwion), and #127–#129 (the Ngununu Gwion) are roughly contemporaneous, although their chronological relationship cannot be determined through superpositioning. For similar reasons, the row of bar motifs (#124) at the top of the panel also appears to be roughly contemporaneous with all eight of these Gwion figures.

On the basis of their similar colour and state of preservation, two large animals, a macropod (#105) and an unidentified animal (#119), appear to be contemporaneous. As these two motifs are superposed by all the other motifs they are in contact with, they seem to be among the earliest paintings on the panel (Figure 7.13). Two stencils of crescent boomerang (#104 and #115) and another of a pair of boomerangs (#108) overlie three hand stencils (#103, #107 and #116), but the boomerang stencils appear to be more recent than the closely positioned large fauna (#105), as the former's pigment density is stronger (Figure 7.21).

The area of the painted boomerang stencil (#157) at the centre-right of the panel has numerous superpositions of motifs from many of the currently accepted Kimberley rock art styles (Figure 22.4).

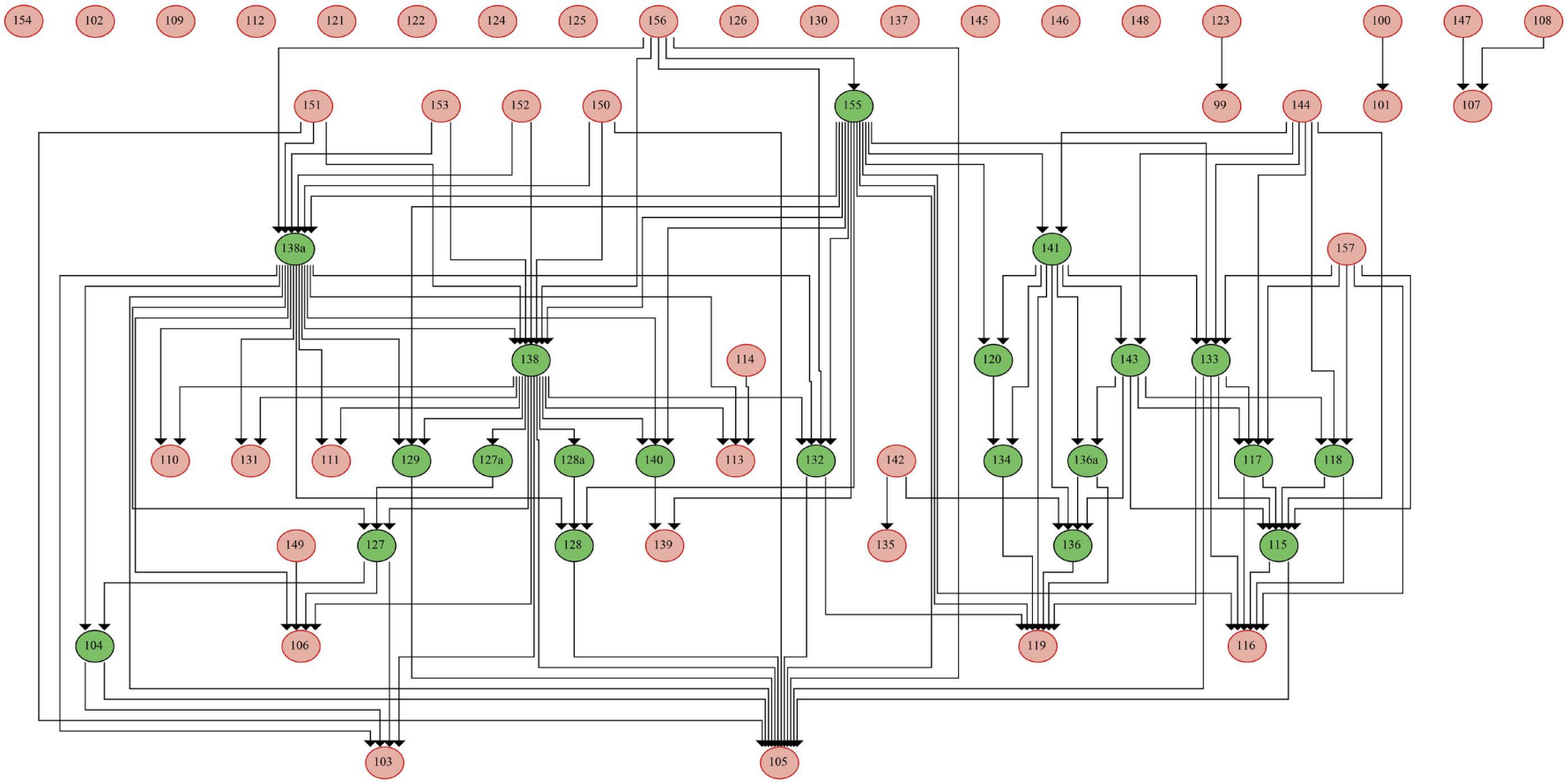


Figure 22.1. Art Panel A3, unvalidated Harris Matrix of motif superpositions. The green cells are the motifs with both a lower and upper association.

Table 22.1. Art Panel A3, list of motif superpositions. Motifs in the blue cells overlap with motifs also shown in Art Panel A2. Those in the orange cells are not involved in superpositions.

Overlying Motifs	A3 MOTIFS	Underlying Motifs
	95	
	96	
123	**99**	
	100	101
100	**101**	
	102	
104, 127, 138, 138a	**103**	
127, 138, 138a	**104**	103, 105
104, 128, 129, 132, 133, 138, 138a, 150, 151, 155, 156	**105**	
127, 138, 138a, 149	**106**	
108, 147	**107**	
	108	107
	109	
138, 138a	**110**	
138, 138a	**111**	
	112	
114, 138, 138a	**113**	
	114	113
117, 118, 133, 144, 157	**115**	116
115, 117, 118, 133, 155, 157	**116**	
133, 143, 144, 157	**117**	115, 116
143, 144, 157	**118**	115, 116
132, 133, 134, 136, 136a, 141, 155	**119**	
141, 155	**120**	134, 158, 161
	121	
	122	
	123	99
	124	
	125	
	126	
127a, 138, 138a	**127**	103, 104, 105, 106
138, 138a	**127a**	127
128a, 138, 138a, 155	**128**	105
138	**128a**	128
138, 138a, 155	**129**	105

Overlying Motifs	A3 MOTIFS	Underlying Motifs
	130	
138, 138a	**131**	
138, 138a, 155, 156	**132**	105, 119
141, 144, 155, 157	**133**	105, 115, 116, 117, 119
120, 141	**134**	119
142	**135**	
136a, 141, 142, 143	**136**	119
141, 143	**136a**	119, 136
	137	
138a,150, 151, 152, 153, 155, 156	**138**	103, 104, 105, 106, 110, 111, 113, 127, 128, 129, 131, 132, 140
152, 153, 155, 156	**138a**	103, 104, 105, 106, 110, 111, 113, 127, 128, 129, 131, 132, 138, 140
140, 155	**139**	
138, 138a, 155	**140**	139
144, 155	**141**	119, 120, 133, 134, 136, 136a, 143
	142	135, 136
141, 144	**143**	115, 117, 118, 136, 136a
	144	115, 117, 118, 133, 141, 143
	145	
	146	
	147	107
	148	
	149	106
	150	105, 138
	151	105, 138
	152	138, 138a
	153	138, 138a
	154	
	155	116, 119, 120, 128, 129, 105, 138, 138a, 132, 133, 139, 140, 141, 156
155	**156**	105, 132, 138, 138a, 155
	157	115, 116, 117, 118, 133

Table 22.2. Art Panel A3, art layer components from the interpreted Harris Matrix. The layers in the green cells are interpreted as broadly contemporaneous. The relative positioning of those in the other cells is not evident on this panel. The '# of motifs' includes all motifs from Art Panel A3, excluding those that overlap with Art Panel A2.

LAYERS	ART PANEL A3 MOTIFS	# OF MOTIFS
A3-1	155	1
A3-2	145, 146, 147, 148, 149, 150	6
A3-3	156	1
A3-4	151, 152, 153, 154	4
A3-5	138a, 157	2
A3-6	138, 142, 144	3
A3-7	140, 141	2
A3-8	120, 143	2
A3-9	127a, 128a, 136a	3
A3-10	122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136	15
A3-11	117, 118	2
A3-12	104, 108, 114, 115	4
A3-13	99, 106, 107	3
A3-14	137, 139	2
A3-15	100, 105, 113, 119	4
A3-16	101, 102, 103, 109, 110, 111, 112, 116, 121	9

Table 22.3. Summary of Art Panel A3's art layer superpositions. Key: Superposed relationships: x/y, where x is superposed directly over y. Assumed relationships: x/y, where x is younger than y, but not in direct superposition. x=y means that x and y are contemporaneous.

A3 Layer superpositions: 1/3, 2/5 3/5, 4/5, 5/6, 6/7, 7/8, 8/9, 9/10, 10/11, 11/12, 12/13, 15/16
A3 Assumed contemporaneous layers: nil
A3 Assumed layer relationships (unconfirmed on this panel): 13/14, 14/15
A3 Unassigned layer relationships: 1-2, 1-4, 2-3, 2-4, 3-4

Table 22.4. Summary of the Art Panel A3 art layers. Motifs that overlap with those in Art Panel A2 are excluded. The relative positioning of the layers in the green cells is not demonstrated on this panel.

A3 Layers	# of motifs	Major colours	Major motif forms	Major Characteristic
A3-1	1	yellow	solid	Painting; large fauna
A3-2	6	red	various	Drawing; small fragments
A3-3	1	unpatinated	solid	Scratching; small non-figurative
A3-4	4	black	outline + infill	Drawing; small figurative
A3-5	2	red	linear	Painting; elaboration
A3-6	3	white	solid	Painting; Wanjina
A3-7	2	orange-red	linear + infill	Painting; complex design
A3-8	2	red	linear	Painting; long lines
A3-9	3	unpatinated	solid	Battering; engagement
A3-10	15	dark red	solid + linear	Painting; Gwion
A3-11	2	white	stencil	Spray; hands
A3-12	4	dark red	stencil	Boomerangs
A3-13	3	dark red	stencil	Spray; variant hands
A3-14	2	red	linear	Painting; small non-figurative
A3-15	4	dark red	outline + infill	Painting; large fauna
A3-16	9	red	stencil	Spray; hands

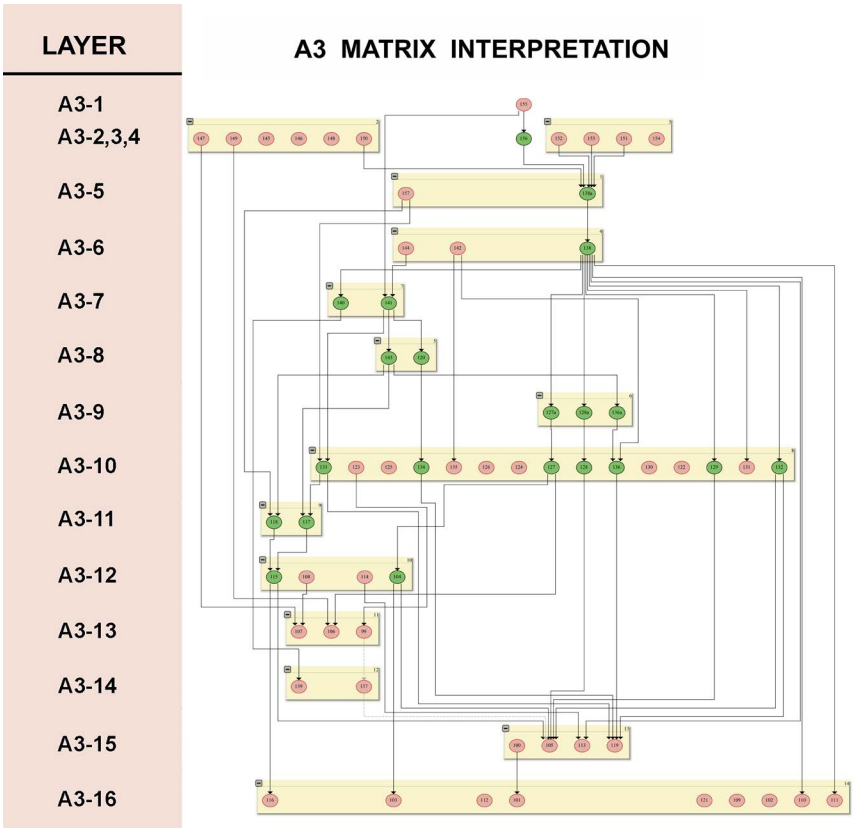


Figure 22.2. Interpretation of the Art Panel A3 Harris Matrix. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 72 × 68cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure22-2a

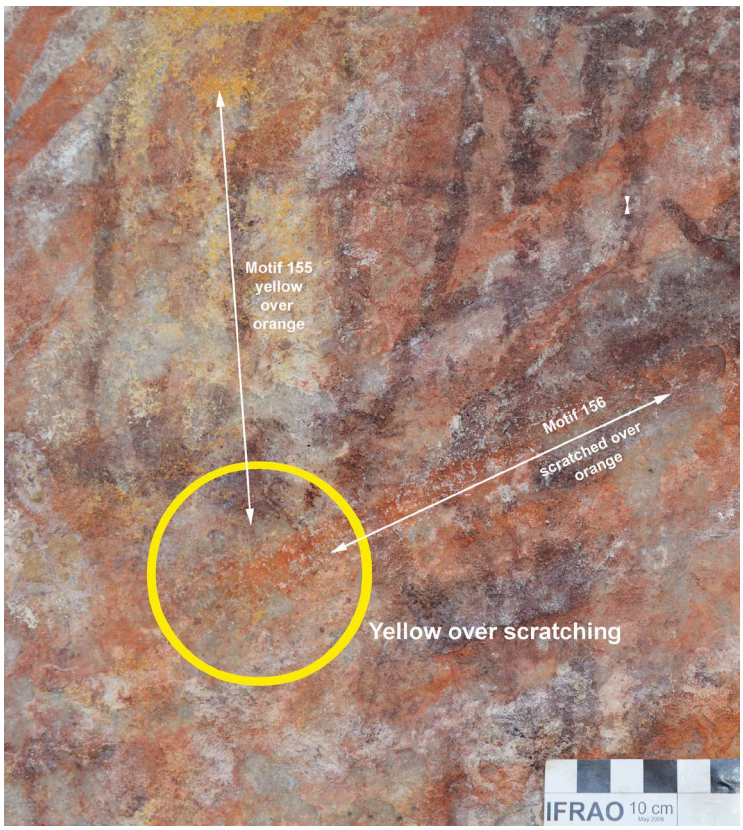
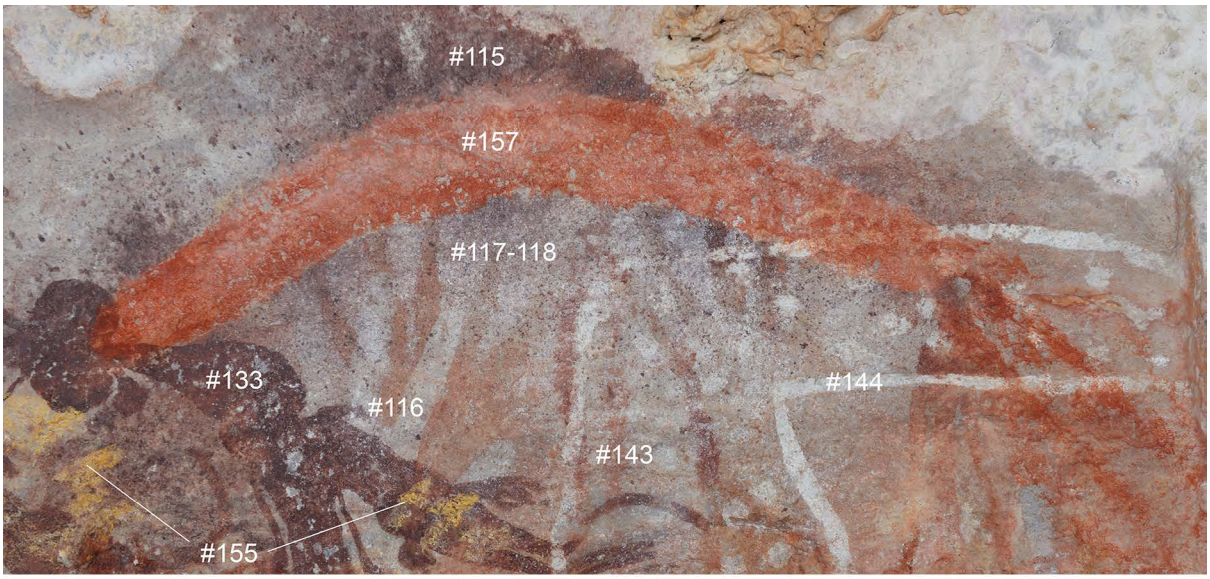
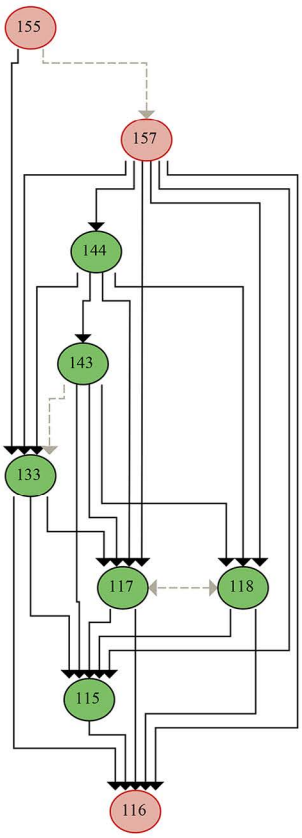


Figure 22.3. Detail of the yellow painting (#155) overlying the unpatinated scratched motif (#156).





155: yellow+white painting
unknown fauna

157: red painting
boomerang

144: white painting
anthropomorph

143: red painting
apex design

133: mulberry painting
Yowna Gwion

117 and 118:
white stencil pair

115: mulberry stencil
boomerang

116: red stencil
left hand

Figure 22.4. Details of Art Panel A3's sequence for motifs surrounding the boomerang painting (#157).

Chapter 23
Art Panel A4 Superpositions

This was the most difficult of the five art panels to record, and it was also challenging to interpret motif superpositioning. One of the main challenges was the variation in pigment hue and density across large motifs such as the 386cm-long motif #207, which crosses the length of Art Panel A4 into Art Panel A5. In doing so, it varies over its length from strong dark red to mid-red to very thin pale pink (Figure 23.1A). This colour variability appears to be largely the result of the variable thickness of the originally applied pigment, with the execution starting with a full brush that gradually diminished until the paint on the brush was replenished. Differential deterioration is also a factor. Such variation in remnant pigment causes different degrees of transparency, from dark opaque to transparent pink. As a result, many images could not be grouped into layers and thus remain in the Harris Matrix as un-sequenced (stand-alone) motifs.

Art Panel A4 has 111 motifs, only 12 of which are not involved in superpositions (Table 23.1; Figure 23.2). The panel is dominated by the large image of the *manbur* macropod, with the latest of its three embellishments and a number of minor marks in the same pigment being among the most recent works on this panel (as determined by patterns of superposition and good pigment preservation). As with the other panels, the superposition reveals that here the earliest art consists of red hand stencils.

The superposed motifs are interpreted to form 30 layers (Tables 23.2–23.4; Figure 23.3), with dark red drawings and battering being among the most recent motifs on this panel, and red hand stencils (both standard and variant types) among the earliest.

The initial *manbur* image was produced in Layer 25. Superpositioning indicates that it is one of the earliest layers. Therefore, the initial motif was, along with several other faunal images, among the earliest painted images on the panel (Figure 8.4). The first modifications to the *manbur* image occurred in the overlying Layer 24, when the image was repainted in a different red pigment (Figure 23.4). The next re-

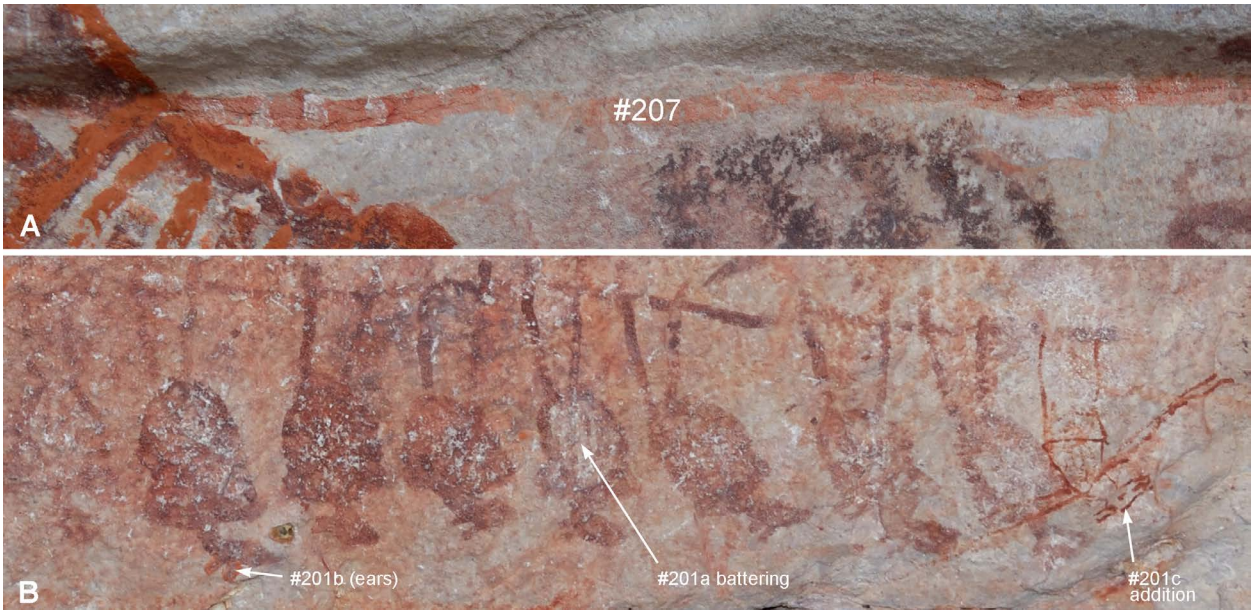


Figure 23.1. Details of Art Panel A4. A: Details of motif #207, as an example of the variation in the hue and density of the red paint. The white dots (#207a) are an elaboration on the earlier red line (#207). B: Details of motif #201, showing modifications of the original motif.

Table 23.1. Art Panel A4, list of motif superpositions. The motifs in the blue cells also occur on Art Panel A3. Those in the orange cells are not involved in superpositions.

Overlying Motifs	ART AREA A4 MOTIFS	Underlying Motifs
144, 157	**118**	
136, 136a, 144, 187, 207, 219	**119**	
250	**120**	158, 161, 201, 202, 226
136a, 207, 219	**136**	119
207	**136a**	119, 136
157, 207, 216, 223	**144**	118, 119, 165, 187, 188, 188a, 189
	157	118, 144
120	158	
	159	
161, 161a, 226	160	
120, 161a, 177a,177c, 177d, 191, 197, 226	161	160, 174
	161a	160, 161, 174, 191, 197, 226
201	162	163, 164
162, 177, 177c, 177d, 207, 209, 224, 254, 255	163	164
162, 163, 207, 212, 225	164	
144, 188, 188a, 189, 189a, 190, 220, 222, 223, 236	165	166, 167, 251
165, 188, 188a, 189	166	
165, 236	167	
190	168	
177, 177a, 177b, 177d, 190, 208, 227	169	
	170	
230	171	
177, 177a, 177b, 177c, 177d	172	
177, 177a, 177b, 177c, 177d	173	
161, 161a, 213	174	
201, 201a, 213, 252	175	
201, 214, 245, 252	176	
177a, 177b, 177c, 177d, 190, 201, 207, 211, 224, 253	177	163, 169, 172, 173, 180, 182, 251
177b, 177c, 177d, 201, 211	177a	161, 169, 172, 173, 177, 180, 190
177c, 177d	177b	169, 172, 173, 177, 177a, 180
177d, 201, 207	177c	161, 163, 172, 173, 177, 177a, 177b, 180, 251

Overlying Motifs	ART AREA A4 MOTIFS	Underlying Motifs
	177d	161, 163, 169, 172, 173, 177, 177a, 177b, 177c, 180, 182, 183, 189, 190, 190a, 192, 200, 201, 207, 208, 211, 213, 214,224, 251, 252, 253
203, 215, 235	178	
215	179	
177, 177a, 177b, 177c, 177d, 204, 205, 207, 235, 237, 238, 239, 240	180	
205, 215, 240, 241	181	
177, 177a, 177c, 177d, 207, 256	182	
177d	183	207
233	184	
206, 234	185	
144, 207, 216, 219	187	119
144, 188a, 194, 207, 217	188	165, 166
144, 207	188a	165, 166, 188
144, 177d, 189a, 207, 221, 222, 223	189	165, 166, 177, 251
207, 222, 223	189a	165, 166, 177, 189, 251
177a, 177d, 190a, 207, 211, 212, 225, 227	190	165, 168, 169, 177
177d, 207	190a	190, 211, 212
161a, 191a, 201, 226	191	161
	191a	191
177d, 231	192	
233	193	
207	194	188
207	195	
226	196	
161a, 201	197	161
	198	
	199	
177d	200	
120, 177d, 201a, 201b, 201c, 213, 215, 226, 235, 244, 245, 252	201	162, 175, 176, 177, 177a, 177c, 191, 197
252		
201b, 235	201a	175, 201, 215
	201b	201, 201a
	201c	201, 215, 235
120	202	
207, 215, 235	203	178
207, 215, 235	204	180

Overlying Motifs	ART AREA A4 MOTIFS	Underlying Motifs
235, 239, 240	205	180, 181
233, 234	206	185
177d, 183, 207a, 219, 235	207	119, 136, 136a, 144, 163, 164, 177, 177c, 180, 182, 187, 188, 188a, 189, 189a, 190, 190a, 194, 195, 203, 204, 210, 211, 212, 220, 221, 224, 225, 251, 255, 256
177d, 228	208	169
	209	163, 224
207, 255	210	
177d, 190a, 207	211	177, 177a, 190, 225
190a, 207	212	164, 190, 225
177d, 252	213	174, 175, 201
177d, 252	214	176
201a, 201c, 235, 241	215	178, 179, 181, 201, 203, 204
	216	144, 187
	217	188
	218	
	219	119, 136, 187, 207
207, 222, 223	220	165, 251
207, 223	221	189, 251
223	222	165, 189, 189a, 220, 251
	223	144, 165, 189, 189a, 220, 221, 222, 251
177d, 207, 209, 254, 255	224	163, 177
207, 211, 212	225	164, 190
120, 161a	226	160, 161, 191, 196, 201
	227	169, 190
	228	208

Overlying Motifs	ART AREA A4 MOTIFS	Underlying Motifs
	229	
	230	171
	231	192
	232	
	233	184, 193, 206
	234	185, 206
201c, 238, 246	235	178, 180, 201, 201a, 203, 204, 205, 207, 215, 252
	236	165, 167
	237	180, 239
	238	180, 235
237	239	180, 205
	240	180, 181, 205
	241	181, 215
	242	
	243	
	244	201
	245	176, 201, 252
	246	235, 252
	247	
	248	
	249	
	250	120
165, 177, 177c, 177d, 189, 189a, 207, 220, 221, 222, 223	251	
177d, 235, 245, 246	252	175, 176, 201, 213, 214
177d	253	177
	254	163, 224, 255
207, 254	255	163, 210, 224
207	256	182

engagement was in Layer 12 further up the sequence, when a series of parallel vertical lines was drawn across the body (Figure 23.5). Subsequently, in Layer 9 higher up again, the whole panel was subject to selective battering. This battering specifically targeted the *manbur* image, along with many other motifs on most other panels. In its most recent re-engagement, the *manbur* image was again repainted in orange-red pigment (Figure 8.10). This orange-red superposes the earlier drawn infill of the *manbur* motif (#177c) (Figure 23.5). Minor details of the *manbur*'s shape were changed in the process (see Figures 8.12 and 8.13 for details of those changes). Motifs #235 (a large design drawn in yellow) and #246 (a small design painted in red) were also produced sometime after the battering, as both clearly superpose the apparently arbitrary battering of motif #252 (Figures 23.6 and 23.7). With the exception of the retouching of the *manbur* motif (#177c; Layer 12), the use of dry pigment for drawing was limited to layers that post-date the layer of battering (Layer 9).

The prominent row of flying foxes (#201) below the *manbur* image occurs in Layer 18, a layer that post-dates the Gwion Period art on this panel. This finding indicates that such large animal motifs do not only occur during the Irregular Infill Animal Period, an art phase that is purported to pre-date the Gwion period across the Kimberley (cf. Walsh 2000: 342–343). To a greater or lesser extent, each of the flying foxes was battered during the production of Layer 9 (Figure 23.1B). In Layer 2, an eleventh flying fox

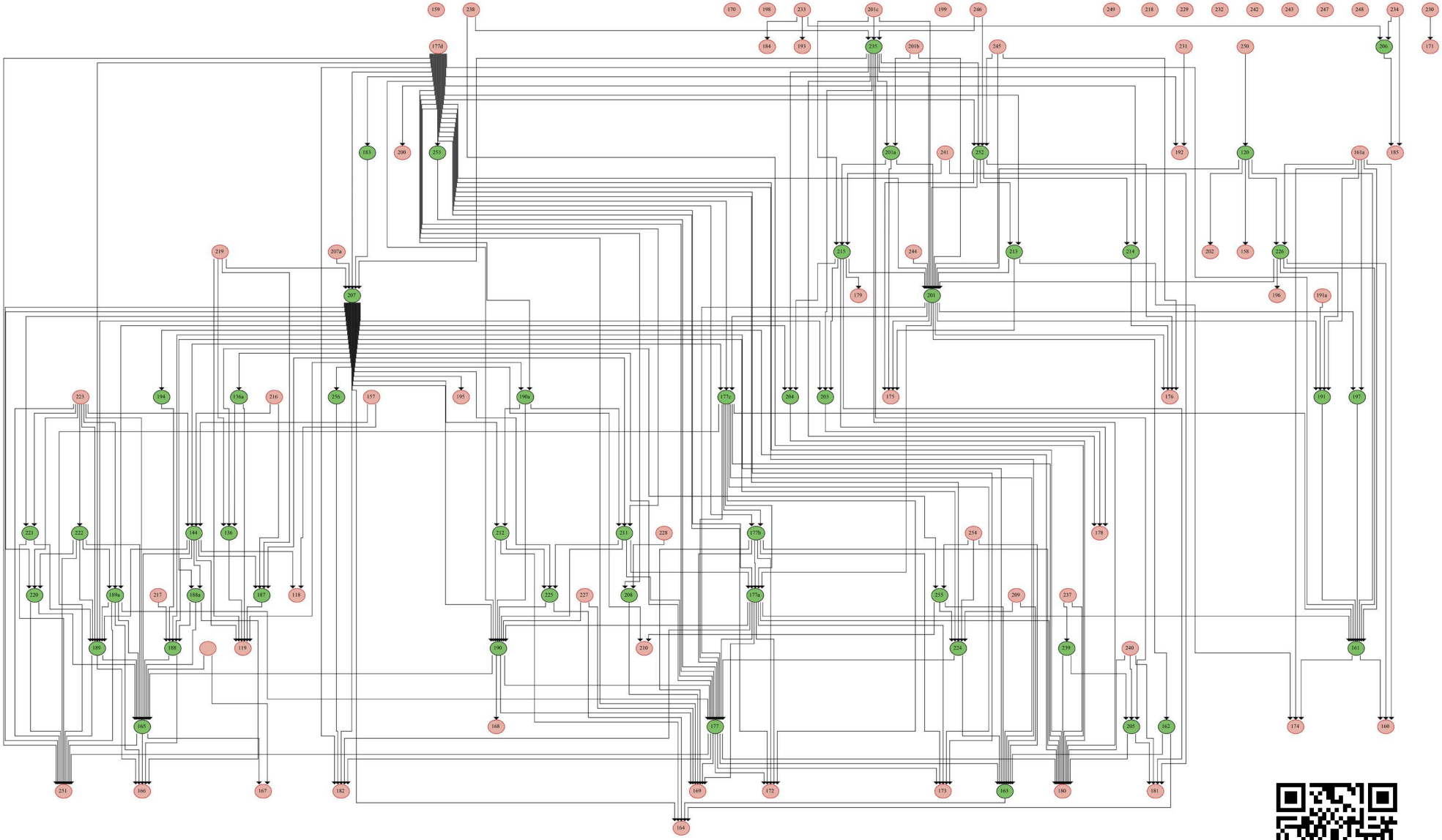


Figure 23.2. Art Panel A4, unvalidated Harris Matrix of motif superpositions. The green cells are those with both lower and upper associations. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 115 × 66cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure23-2

Table 23.2. Art Panel A4's art layer components, from the interpreted Harris Matrix. The motifs in the blue cells are interpreted as broadly contemporaneous on the basis of common attributes. The relative positioning of those in the green cells is not evident on this panel and is derived from common attributes with motifs on the adjacent art panel sequences. The motifs in the white cells contain direct superpositions derived from this art panel. All the motifs from Art Panel A4, plus those that overlap with Art Panel A3, are included in this table.

LAYER	ART PANEL A4 MOTIFS	# OF MOTIFS
A4-1	177d, 201b, 243, 244, 245, 247, 248	7
A4-2	157, 201c, 216, 218, 227, 246, 249, 250	8
A4-3	183	1
A4-4	236	1
A4-5	223, 237	2
A4-6	144, 207a, 217, 222, 231, 232	6
A4-7	235, 240	2
A4-8	120, 207, 254	3
A4-9	136a, 161a, 177c, 188a, 189a, 190a, 191a, 201a, 252	9
A4-10	219, 228, 241	3
A4-11	255	1
A4-12	177b	1
A4-13	233, 234, 253	3
A4-14	226	1
A4-15	198, 199, 200	3
A4-16	194, 208, 209, 210, 211, 212, 213, 214, 215, 239	10
A4-17	220, 221, 224, 225	4
A4-18	201, 203, 204, 205	4
A4-19	195, 196, 197	3
A4-20	202, 242	2
A4-21	136, 188, 189, 190, 191, 192, 193	7
A4-22	187	1
A4-23	118, 229, 230	3
A4-24	177a, 206, 238, 256	4
A4-25	119, 161, 162, 177, 178, 179, 184	7
A4-26	163, 168	2
A4-27	165	1
A4-28	166, 173	2
A4-29	158, 164, 180, 181, 182	5
A4-30	159, 160, 167, 169, 170, 171, 172, 174, 175, 176, 185, 251	12

Table 23.3. Summary of Art Panel A4's motif superposition layers. Key: Superposed relationships: for x/y, x is superposed directly over y. Assumed relationships: for x/y, x is younger than y, but not in direct superposition. x=y means that x and y are contemporaneous.

A4 Layer superpositions: 1/3, 5/6, 6/8, 7/8, 8/9, 8/11, 9/12, 13/15, 16/17, 16/18, 18/19, 19/21, 25/26, 26/27, 27/28
A4 Assumed contemporaneous layers: 4=5, 12=13, 15=16
A4 Considered layer relationships (unconfirmed on this panel): 1/2, 2/4, 3/4, 6/7, 10/12, 11/12, 13/14, 14/15, 17/18, 19/20, 20/21, 21/22, 22/23, 23/24, 28/29, 29/30
A4 Unassigned layer relationships: 2-3, 9-10-11, 24-25

(#201c) in a completely different style was added to the row. A final re-engagement (#201b) with the original row of flying foxes (#201) is represented in the most recent layer, Layer 1. Here the ears of the flying fox fourth from left were outlined in an orange-red pigment, similar to that used in the latest re-painting of the *manbur* motif.

The five Yowna Gwion on this panel (#136, #188–#191; Layer 21) were also subject to battering (Layer 9), while the Ngunuru Gwion and (possible) Dalal Gwion (#187 and #192; Layers 22 and 21, respectively) were not targeted for battering.

Table 23.4. Summary of Art Panel A4's art layers. The layers in the blue cells are interpreted as broadly contemporaneous. The relative positioning of those in the green cells is not evident on this panel. All the motifs from Art Panel A4, plus those that overlap with Art Panel A3, are included in this table.

A4 Layers	# of Motifs	Major Colours	Major Motif Forms	Technique and Major Characteristic
A4-1	7	orange	outline + infill	Painting; #177 engagement
A4-2	8	red	various	Painting; small various
A4-3	1	dark red	outline + infill	Painting; small non-figurative
A4-4	1	dark red	outline + infill	Drawing; small anthropomorph
A4-5	2	dark red	linear	Drawing; small non-figurative
A4-6	6	white	various	Paintings; various
A4-7	2	yellow	linear/solid	Drawing/Painting; non-figurative
A4-8	3	red	outline	Painting; large (snakes?)
A4-9	9	unpatinated	solid	Battering; #177 etc. engagement
A4-10	3	unpatinated	linear	Scratching; small non-figurative
A4-11	1	red	linear	Painting; bar pair
A4-12	1	dark red	infill	Drawing; #177 engagement
A4-13	3	orange	solid	Drawing; objects
A4-14	1	red	outline + infill	Painting; complex design
A4-15	3	red	linear	Paintings; anthropomorph
A4-16	10	red	various	Paintings; anthropomorph
A4-17	4	off-white	solid + linear	Paintings; anthropomorph
A4-18	4	red	solid + linear	Paintings; flying fox
A4-19	3	red	various	Paintings; figurative
A4-20	2	red	linear	Paintings; bird track
A4-21	7	dark red	solid + linear	Painting; Gwion
A4-22	1	red	solid + linear	Painting; Gwion
A4-23	3	white	stencil	Spray; hands stencil
A4-24	4	dark red	outline + infill	Painting; #177 engagement
A4-25	7	dark red	outline + infill	Painting; #177 + fauna
A4-26	2	dark red	stencil	Spray; hands stencil
A4-27	1	dark red	stencil	Spray; boomerang stencil
A4-28	2	dark red	stencil	Spray; hand stencils
A4-29	5	red	stencil	Spray; hand stencils
A4-30	12	red	stencil	Spray; hand stencils

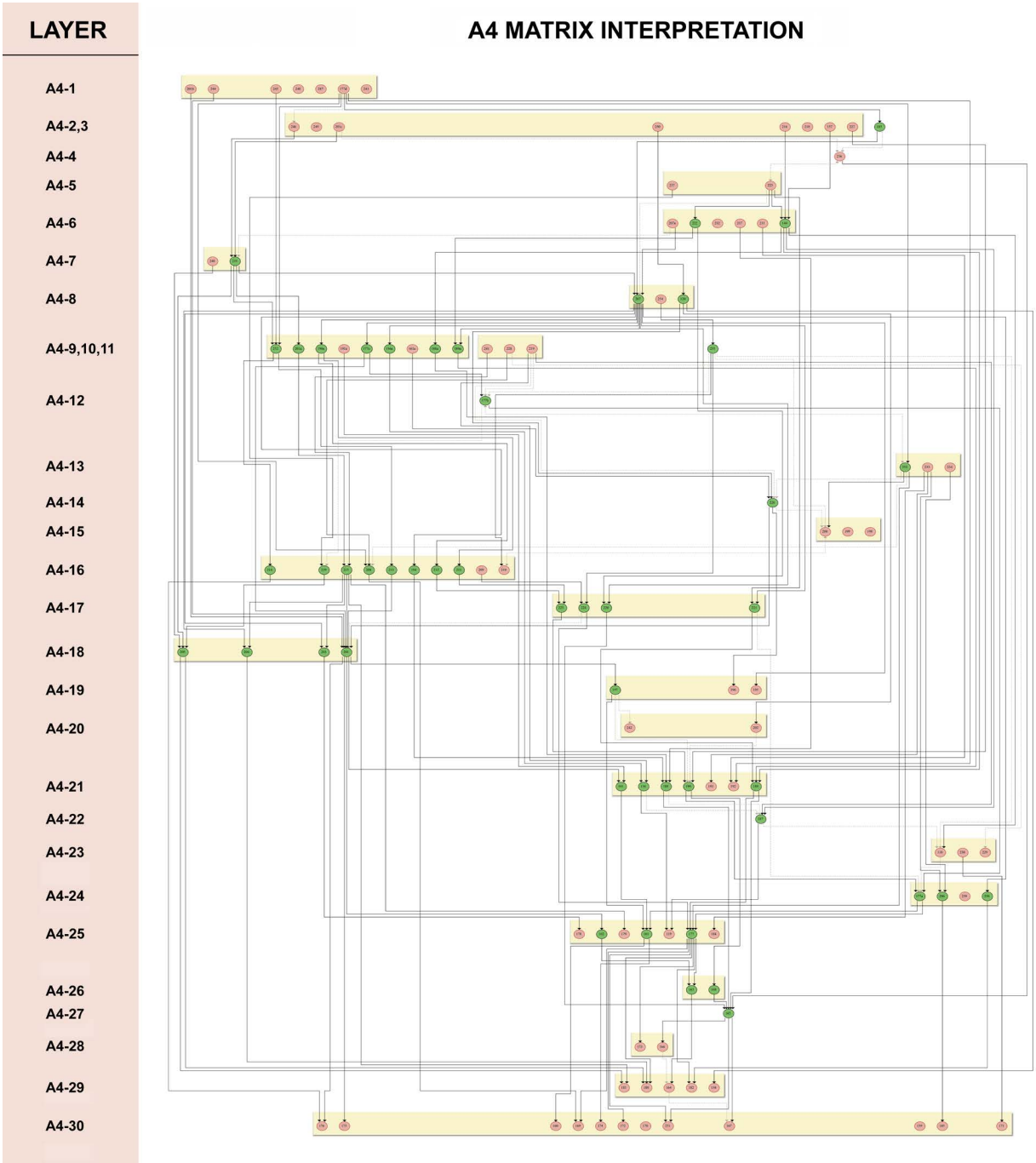


Figure 23.3. Interpretation of Art Panel A4's Harris Matrix. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 127 × 139cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure23-3

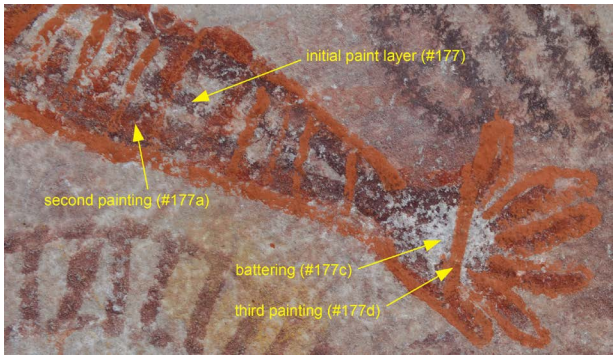


Figure 23.4. Four of the five layers of the *manbur* motif (#177).

Figure 23.5. Detail of the superimposition of the latest, orange-red painting of the *manbur* motif (#177d) over drawn deep red vertical stripes (#177b) that were previously added to an earlier painted version of the *manbur* motif.

Figure 23.6. Superposition of the yellow drawing (#235) over the battering (#252).

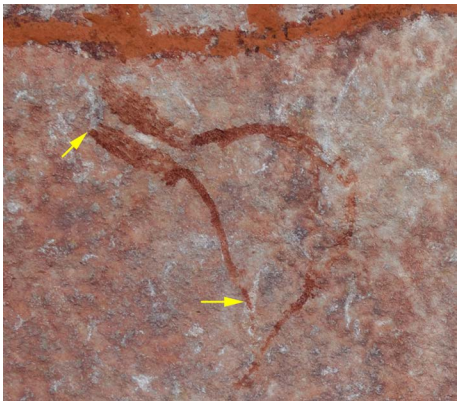


Figure 23.7. Superposition of the red painting (#246) over the battering (#252).

Chapter 24
Art Panel A5 Superpositions

While very few of the motifs on Art Panel A5 are in good condition, those on the left of the panel are clearer to see than those on the right, where a large area of smudging has damaged at least 20 motifs on the bottom-half of the panel. This smudging is possibly the result of later deliberate erasure (Figure 24.1). The determination of superpositions of these damaged motifs is thus very difficult, and was therefore not always possible to be made.

Art Panel A5 has 180 motifs, only 12 of which are not directly involved in superpositions (Table 24.1; Figure 24.2). The superposed motifs are interpreted to form 32 layers, with two layers (Layer 2 and Layer 32) having internal sub-layers (Tables 24.2–24.4; Figure 24.3). A drawing (#391) and a twice-modified painting (#408, #408a and #408b) are the most recent motifs on this panel, and the earliest motifs are a suite of 18 red hand stencils that together make up Layer A5-32.

The dark red, dry pigment drawing of what appears to be an object, such as a club with tassels (#391; Figure 9.22), overlies an earlier drawing of an anthropomorph (#390; Figure 9.21). The modified painting (#408) is a squat anthropomorph in orange-red (Figure 9.17). The motif was later retouched through the addition of details in deeper brown-red colour over the torso, arms and legs (#408a). At a later time again, the torso was added to by smearing dull purple pigment over it (#408b). Neither of these embellishments extended onto the headdress, with all three painting events (#408, #408a and #408b) forming the most recent painting layer (Layer 2).

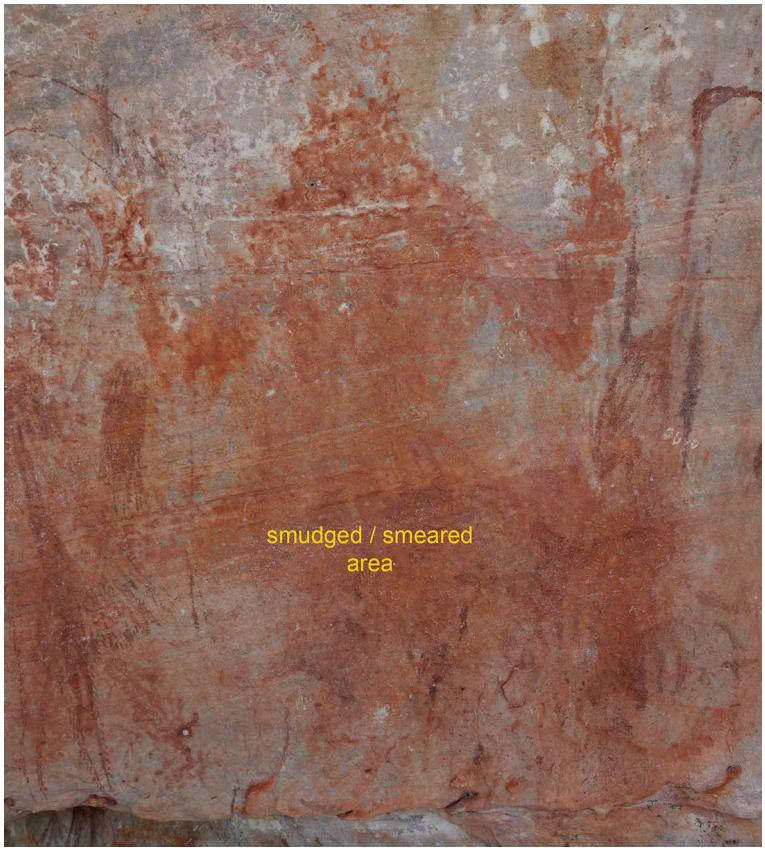


Figure 24.1. The smudged area over motif #384 (a large anthropomorph) in the lower right-hand side of Art Panel A5.

Table 24.1. Art Panel A5, list of motif superpositions. The motifs in the blue cells also occur on Art Panel A4. Those in the orange cells are not involved in superpositions.

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
	177a	
	177c	
177d, 256, 282	**182**	
206	**185**	286
	206	195
207a, 306, 376, 383, 412, 413	**207**	256, 267, 268, 282, 316, 361, 362, 421
	207a	207
207	**256**	182, 282
	257	
284, 318, 387	258	
285, 292, 398	259	
406d	260	307, 308, 314, 315, 377, 407
378	261	
309, 265, 378, 379	262	
360, 382	263	264, 265, 266
263, 359	264	
263, 309, 361, 377, 378, 379, 380, 381, 382	265	262, 282
263, 360, 383, 408, 408a, 408b	266	
207, 355, 355a, 360, 362, 383	267	
207, 269, 322, 361, 379	268	
323, 350, 350a, 355a, 421	269	268
292, 320, 322, 350, 350a	270	
289, 291, 292, 293, 295, 324, 352, 352a, 353, 355, 355a, 353a, 362, 366, 372, 389, 392, 394, 408,408a, 408b	271	272
271, 295, 370, 371, 389	272	
294, 295	273	
341, 364, 384	274	
375, 404	275	419
405, 411, 411a, 416	276	
405, 411	277	
300, 384, 405	278	
300, 384, 404	279	
384 -280	280	
385, 386, 397	281	
207, 256, 316	282	182
386, 387, 414	283	
	284	258
	285	259
349, 349a, 350, 350a	286	
323, 350, 350a	287	
355, 355a	288	

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
362, 408, 408a, 408b	289	271
408, 408a, 408b	290	
323, 354, 355, 355a	291	271
423, 355, 355a	292	259, 270, 271
324, 370, 389	293	271
370, 371	294	
324, 371, 372, 373, 389, 400, 408	295	271, 272
370	296	
	297	
374, 404	298	
375, 401, 402, 405	299	419
375, 405	300	278, 279
384, 416	301	
309, 340, 411	302	
347, 368, 390, 416	303	
	304	
358	305	
358	306	
260, 407	307	
260, 407	308	
379, 380, 381	309	262, 265
	310	
359, 388	311	
359	312	
	313	
355, 355a	314	292
260, 406, 406c, 407	315	
207, 376, 385, 413	316	282
385, 413	317	318
317, 318a, 319, 320, 349, 376, 385, 387, 413, 422	318	258, 376
385, 387, 413	318a	317, 318, 319, 320, 422
318a, 422	319	318
349, 349a, 350, 350a	320	270, 318, 322
399	321	
320, 349, 350, 350a	322	270, 286
350, 350a, 355, 355a, 356, 357, 362	323	267, 269, 287, 291
370, 389	324	271, 293, 295
384, 394	325	
335, 336, 337, 384, 393	326	
384, 409	327	
	328	
	329	
	330	
	331	
	332	

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
	333	
390	334	
393	335	326
393	336	326
393	337	326
384	338	
384, 411, 411a, 416	339	
411, 416	340	302, 341
340	341	274
411	342	
416	343	
365, 368, 390, 416	344	
368, 390	345	
368, 390, 416	346	
368, 390	347	
405	348	
349a	349	286, 318, 320, 322
	349a	286, 320, 349
350a	350	269, 270, 286, 287, 320, 323
	350a	269, 270, 286, 287, 320, 323, 350
408, 408a	351	
352a, 367, 396, 403, 404, 408, 408a, 408b	352	271, 353, 366, 372, 373
373, 408, 408a, 408b	352a	271, 352, 366, 373
352, 353a, 355, 403, 404	353	271, 366
403, 404	353a	271, 353, 366
	354	291
355a, 355b	355	267, 271, 288, 291, 292, 323, 361, 421, 423
355b	355a	267, 269, 271, 288, 291, 292, 323, 355, 361, 421, 423
383	355b	355, 355a
	356	323, 362
	357	323
	358	305, 306
	359	264, 311, 312
408, 408a, 408b	360	207, 263, 266, 267, 382, 383, 421
207, 355, 355a, 415	361	265, 268, 379, 380, 381, 421
207, 356, 408, 408a, 408b	362	267, 271, 289, 323
393	363	
384, 409	364	274
390, 411	365	344
352, 352a, 353, 353a, 384, 394, 395, 403	366	271
384, 393, 403	367	

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
390, 416	368	303, 344, 345, 346, 347
416, 417, 418	369	
	370	272, 293, 294, 296, 324
	371	272, 294, 295
352	372	271, 295
352, 352a, 396, 404	373	295
393, 405	374	298
402, 405	375	299, 300
318a, 385, 412, 413	376	207, 316, 318
260	377	265
	378	261, 265
361	379	262, 263, 265, 309
361	380	265, 309
361	381	265, 309
360	382	263, 265
360	383	207, 266, 267, 421
404, 405, 409, 410, 416	384	274, 278, 279, 280, 301, 325, 326, 327, 338, 339, 364, 366, 367, 393, 420
	385	281, 316, 317, 318, 318a, 376
414	386	281, 283
414	387	258, 283, 318, 318a
	388	311
408, 408a	389	271, 272, 293, 295, 324
391, 416	390	303, 334, 344, 345, 346, 347, 365, 368, 411
	391	390, 416
	392	
384	393	326, 335, 336, 337, 363, 367, 374, 420
	394	271, 325, 353, 366
403	395	366, 367, 420
	396	352, 373
	397	281
	398	259
	399	321
	400	295
	401	299
	402	299, 375, 405
	403	352, 353, 353a, 366, 367, 395, 420
	404	275, 298, 352,353, 353a, 373, 419, 420
402	405	276, 277, 278, 299, 300, 348, 374, 375, 384
406a, 406b, 406c	406	315, 407
406b, 406c	406a	315, 406

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
406c	406b	260, 315, 406, 406a
	406c	315, 406, 406a, 406b
260, 406, 406a, 406b, 406c	407	307, 308, 315
408a, 408b	408	266, 271, 289, 290, 295, 352, 352a, 360, 362, 389
408b	408a	266, 271, 289, 290, 352, 352a, 360, 362, 389, 408
	408b	266, 271, 289, 290, 352, 352a, 360, 362, 408, 408a
	409	327, 364, 384
416	410	384
390, 411a, 416	411	276, 277, 302, 339, 340, 342, 365
416	411a	276, 339, 411

Overlying Motifs	ART PANEL A5 MOTIFS	Underlying Motifs
	412	207, 376
	413	207, 316, 317, 318, 318a, 376
	414	283, 386, 387
	415	207, 260, 308, 316
391	416	276, 301, 303, 339, 340, 343, 344, 346, 368, 369, 384, 390, 410, 411, 411a
	417	369
	418	369
275, 299, 404	419	
384, 393, 403, 404	420	
207,355, 355a, 360, 361, 383	421	269
318a	422	318, 319
355a, 355	423	292

The most prominent motifs, however, are a retouched macropod head (#406; Figure 9.12) and a pair of small Yowna Gwion from Layer 14 (#349 and #350; Figure 9.16). These three motifs occur on the better-preserved left-hand side of the panel. The macropod head was initially painted in very dark black-red pigment (#406; Layer 5), adjacent to a hand stencil in the same colour (#260; Layer 6). The macropod head (#406) was then repainted and altered in an orange-red pigment on three occasions during the production of Layer 3 (#406a–#406c). These modifications offer a unique view of the repainting artist(s), as it shows the original positioning of the ears, their erasure, and then their repainting in a different alignment. The orange-red pigment and the style of the macropod head matches those of the most recent repainting of the *manbur* image on Art Panel A4 (#177d). The eyes of both macropods (#177d and #406c) are painted in the form associated with macropods from the Wanjina art style. As the hand stencil (#260; Figure 24.4) is in a similar colour and state of preservation to the initial, adjacent painting of the macropod head (#406), we interpret the two motifs as contemporaneous.

The two prominent Yowna Gwion (#349 and #350), along with a third, less well-preserved Yowna Gwion (#352), are in a dark red pigment, and all have been lightly battered (#349a, #350a and #352a). Of the two nearby Ngununu Gwion (#355 and #353), however, only one has been battered, and that only minimally around the abdomen (#355b). Yowna Gwion motif #352 is superposed over and therefore demonstrably younger than Ngununu Gwion motif #353 (Figure 24.5).

Superpositioning indicates that the dry pigment drawings on this panel were made some time after the battering (e.g., Figure 24.6). The battering that occurs on this panel is not as substantial as that on other panels, but here, too, it focuses specifically on the central abdomen and head of the Gwion figures (only one, #350, also has battering over its feet). There is also a small amount of battering elsewhere, both in tightly concentrated areas (#402) not focused on a pre-existing painting, and in broadly dispersed areas such as occurs (#318a) over the animal painting of motif #318 (Figure 9.15).

Table 24.2. Art Panel A5's art layer components, from the interpreted Harris Matrix. The motifs in the blue cells are broadly contemporaneous, as determined by the presence of common attributes in sequential positions in the Harris Matrix. The relative positioning of the motifs in the green cells is not evident on this panel. All the motifs from Art Panel A5, plus those that overlap with Art Panel A4, are included.

LAYER	MOTIF #	# OF MOTIFS
A5-1	391	1
A5-2 (a, b, c)	[408b/ 408a/ 408]	3
A5-3 (a, b, c)	177d, [406c/406b/406a], 412, 413, 414, 415, 416, 417	10
A5-4	385, 386, 387, 388, 389, 390	6
A5-5	406	1
A5-6	260	1
A5-7	207a, 313, 407, 411a	4
A5-8	207	1
A5-9	177c, 318a, 349a, 350a, 352a, 355b, 397, 398, 399, 400, 401, 402	12
A5-10	403, 404, 405	3
A5-11	409, 410, 411, 418	4
A5-12	384	1
A5-13	353a, 392, 393, 394, 395, 396	6
A5-14	349, 350, 351, 352	4
A5-15	354, 355a, 356, 357	4
A5-16	353, 355	2
A5-17	358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 420	19
A5-18	263	1
A5-19	383	1
A5-20	422	1
A5-21	376, 377, 378, 379, 380, 381, 382	7
A5-22	338, 340, 344	3
A5-23	317, 319, 320, 321, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 339, 341, 342, 343, 345, 346, 347, 348	22
A5-24	310, 311, 312	3
A5-25	305, 306, 307, 308, 309	5
A5-26	322, 323, 324, 325, 326, 327	6
A5-27	177a, 206, 256, 314, 315, 316, 318	7
A5-28	265, 269	2
A5-29	281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 421	25
A5-30	182, 258, 259	3
A5-31	270, 271	2
A5-32(a, b)	[275 /419], 185, 257, 261, 262, 264, 266, 267, 268, 272, 273, 274, 276, 277, 278, 279, 280	18

Table 24.3. Summary of Art Panel A5's superpositions. Key: Superposed relationships: for x/y, x is superposed directly over y. Assumed relationships: for x/y, x is younger than y, but not in direct superposition. x=y means that x and y are contemporaneous.

A5 Layer superpositions: 1/3, 3/4, 3/5, 3/6, 5/7, 6/7, 7/8, 9/10, 11/12, 12/13, 13/14, 14/16, 15/16, 16/17, 17/18, 17/19, 22/23, 25/26, 28/29, 29/30, 31/32
A5 Assumed contemporaneous layers: 5=6, 20=21
A5 Assumed layer relationships (unconfirmed on this panel): 2/3, 8/9, 10/11, 14/15, 18/19, 19/20, 21/22, 23/24, 27/28, 30/32
A5 Unassigned layer relationships: 1-2, 26-27, 30-31

Table 24.4. Summary of Art Panel A5's art layers. The layers in the blue cells are broadly contemporaneous, as determined by the presence of common attributes in sequential positions in the Harris Matrix. The relative positioning of those in the green cells is not evident on this panel and is derived from common attributes with motifs in sequences on adjacent art panels. All the motifs from Art Panel A5, plus those that overlap with Art Panel A4, are included.

A5 Layers	# of Motifs	Major Colours	Major Motif Forms	Technique and Major Characteristic
A5-1	1	red	solid	Drawing: non-figurative
A5-2	3	red	solid	Painting: large altered anthro.
A5-3	10	orange	outline + infill	Painting: #177 Manbur +
A5-4	6	dark red	outline + infill	Drawing: large anthro., fish
A5-5	1	dark red	outline + infill	Painting: roo head
A5-6	1	dark red	stencil	Spray: hand stencil
A5-7	4	white	various	Painting: small non-figurative
A5-8	1	red	linear	Painting: long lines
A5-9	12	unpatinated	solid	Battering: embellishment
A5-10	3	unpatinated	solid	Abrading: areas
A5-11	4	red	various	Painting: heron
A5-12	1	red	solid	Painting: anthropomorph
A5-13	6	red	various	Painting: fragments
A5-14	4	dark red	solid + linear	Painting: Yowna Gwion
A5-15	4	red	outline + infill	Painting: accoutrements
A5-16	2	red	solid + linear	Painting: Ngununu Gwion
A5-17	19	Yellow	stencil	Spray: hands
A5-18	1	red	stencil	Spray: hands
A5-19	1	red	linear	Painting: fragment
A5-20	1	red	solid	Painting: small non-figurative
A5-21	7	red	solid	Print: Grass
A5-22	3	dark red	solid	Print: Grass
A5-23	22	dark red	solid	Print: Grass
A5-24	3	white	outline + infill	Painting: non-figurative
A5-25	5	white	stencil	Spray: hand stencils
A5-26	6	red	various	Painting: non-figurative
A5-27	7	dark red	various	Painting: objects
A5-28	2	red	stencil	Spray: hand + arm
A5-29	25	red	various	Painting: various
A5-30	3	red	stencil	Spray: hands
A5-31	2	red	outline + infill	Painting: large fish
A5-32	18	red	stencil	Spray: hands

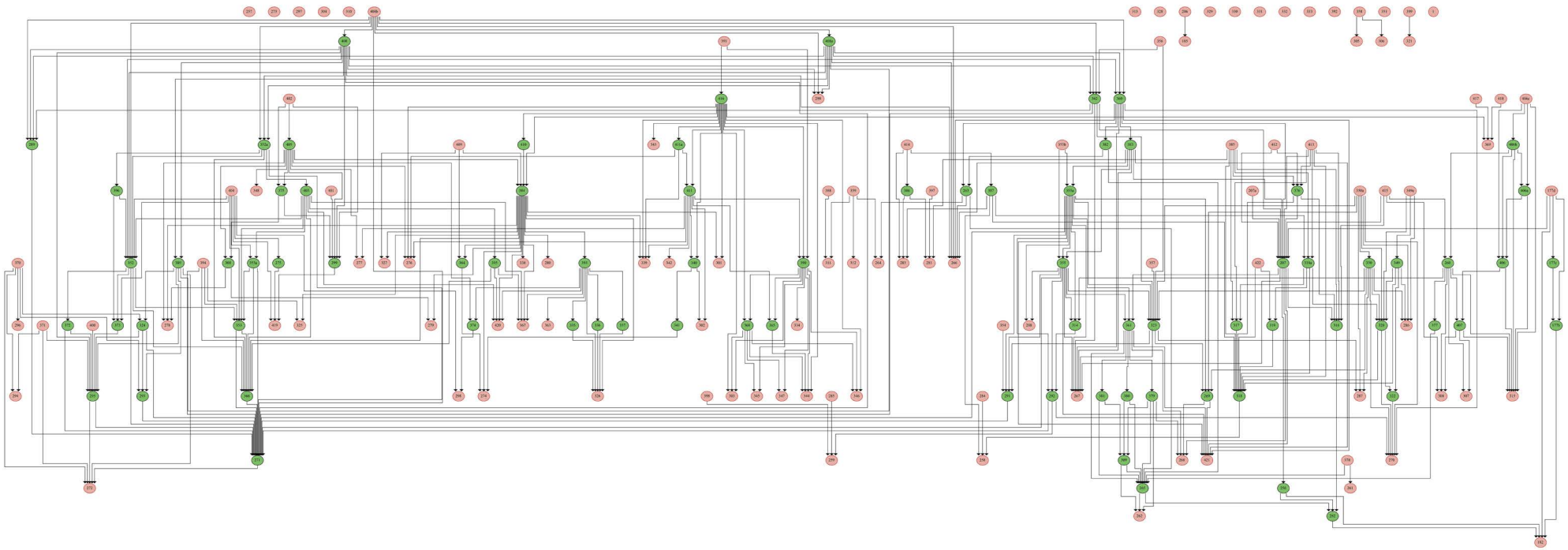


Figure 24.2. Art Panel A5, unvalidated Harris Matrix of motif superpositions. The green cells are those with both lower and upper associations. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 170 × 61cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure24-2

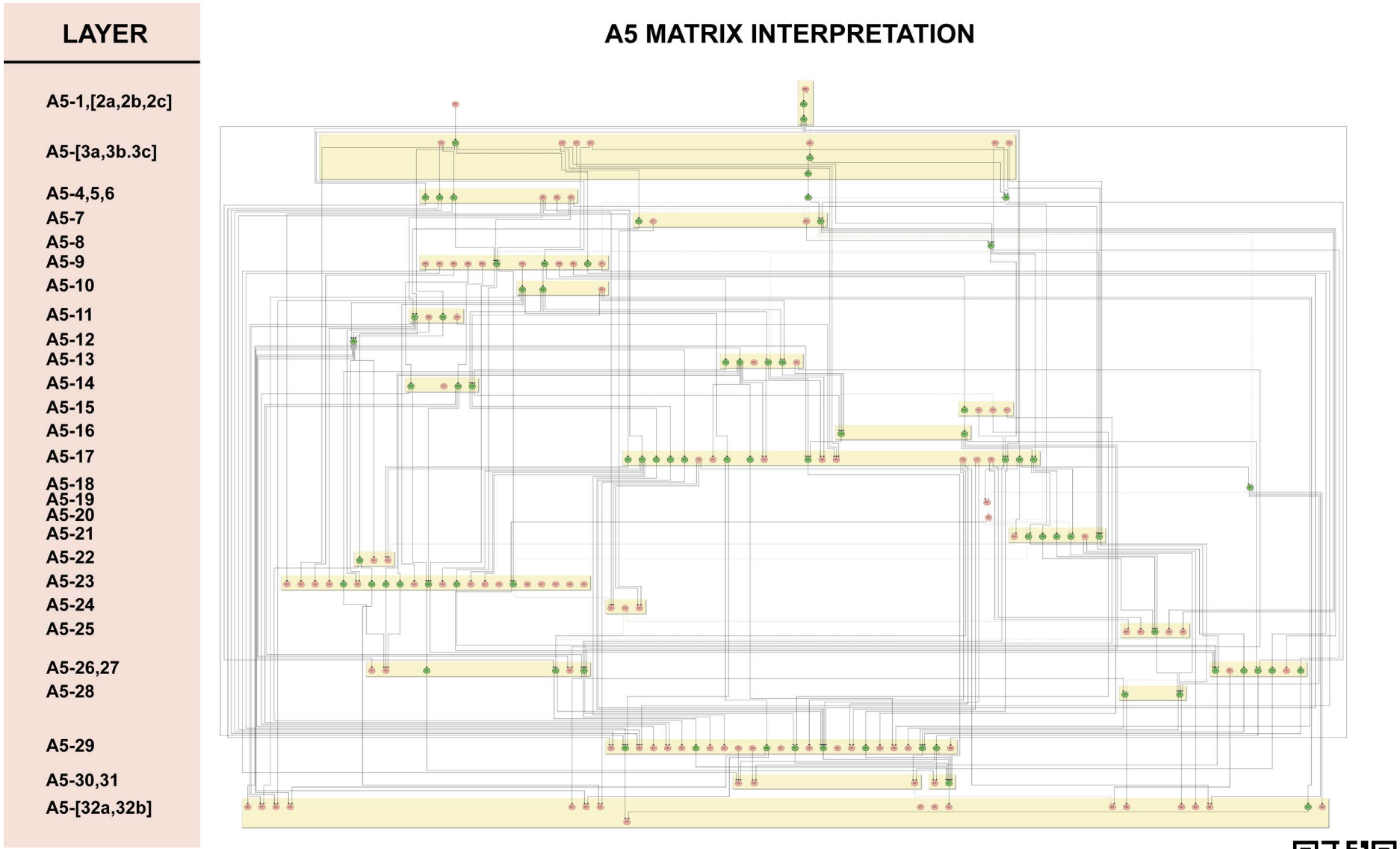


Figure 24.3. Interpretation of Art Panel A5's Harris Matrix. The full-size of the matrix, as produced by the digital Harris Matrix programme, is 129 × 81cm. For a full-size high resolution version, please refer to DOI http://doi.org/10.32028/9781805831471-Figure24-3

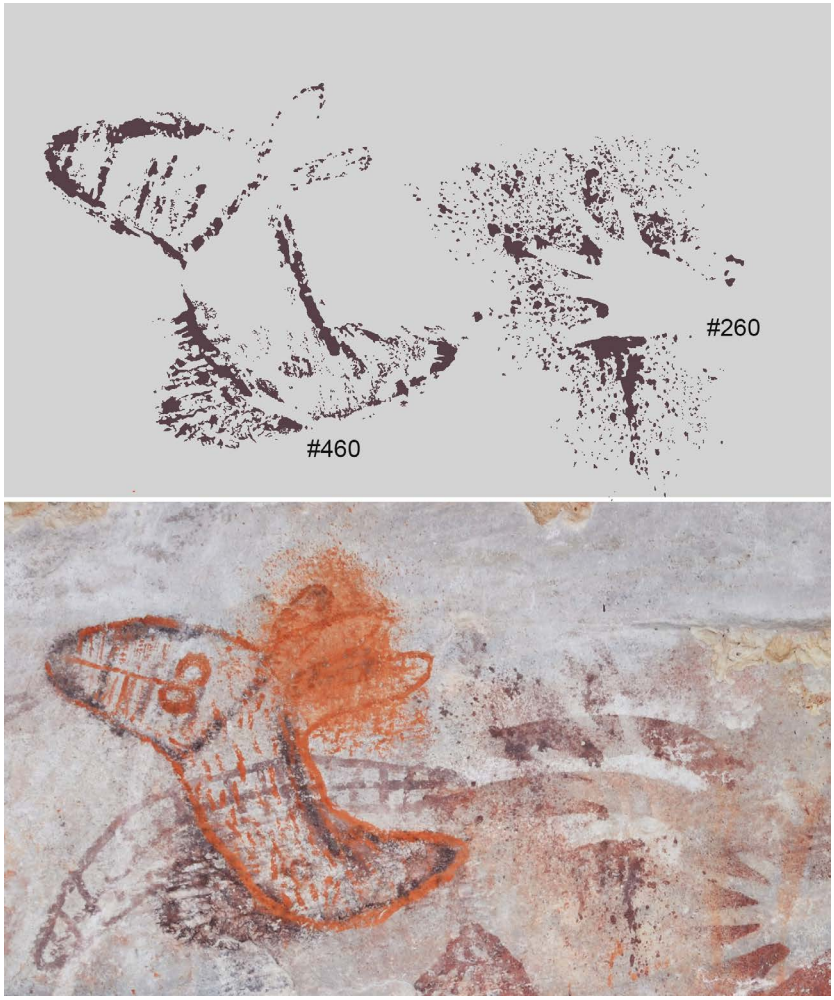


Figure 24.4. Contemporaneous deep-red painting (#460: macropod head) and hand stencil (#260), as determined by their common pigment colour, state of preservation and pattern of superpositions.

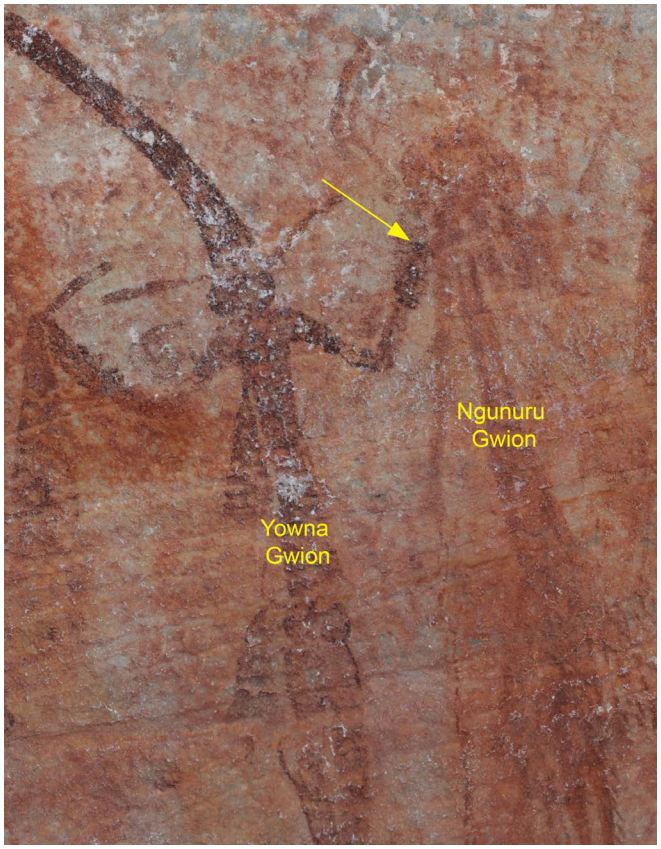


Figure 24.5. Yowna Gwion (#352) superposed over Ngunuru Gwion (#353).

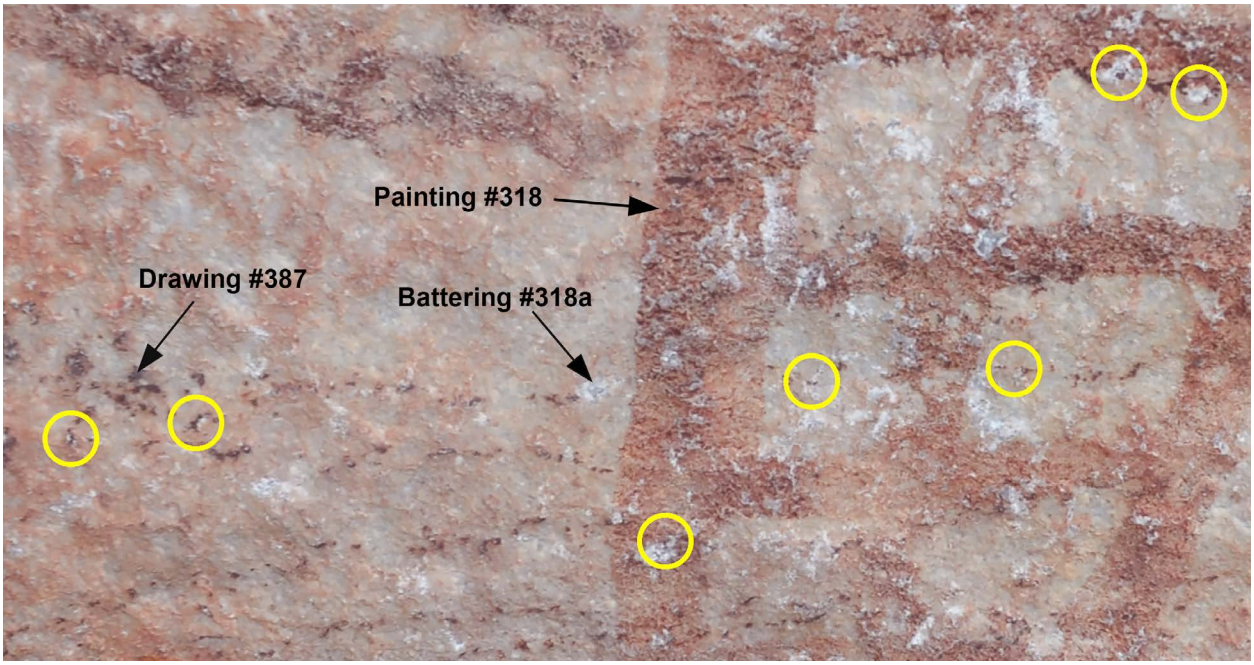


Figure 24.6. Dark red drawing (#387) superposed over battering (#318a), with both motifs overlying an older red painting (#318).

Chapter 25
The Art Sequence and Chronology of Pundawar Manbur

The overall sequence of art on the rear wall (Art Panel A) of Pundawar Manbur is derived by integrating the corresponding layers from the five panels (Art Panels A1–A5; Table 25.1) into a combined interpreted Harris Matrix (Table 25.2). In constructing that combined Harris Matrix, the contents of each Art Panel's layers were compared and aligned. When the sequence of two or more adjacent layers in a particular Art Panel's interpreted Harris Matrix could not be determined, their relative sequence was extrapolated from the adjacent Art Panels when enough shared details about the art was available. For example, the relative sequence of Layers 2, 3 and 4 is not demonstrated in Art Panel A3, although they are present as stand-alone layers (Table 25.1). There are six possible combinations for these layers to be positioned relative to each other in a single sequence (3! = 3×2×1). To illustrate this example, three of the six possible sequences for this set of layers are shown in Table 25.3.

Table 25.1. Correlation of the art layers from the individual panels across each of Art Panels A1–A5. The colours of the cells approximate those of the motifs in the corresponding art layers.

SEQUENCE LAYER	ART PANEL CHARACTERISTIC	A1	A2	A3	A4	A5	# OF MOTIFS
49	Yellow painting			A3-1			*1*
48	Scratchings	A1-1,2		A3-3			*9*
47	Drawings: red, black	A1-3,4		A3-2,4		A5-1	*13*
46	Orange paintings WANJINA				A4-1	A5-3	*16*
45	Red paintings			A3-5	A4-2	A5-2	*12*
44	Dark red painting/stencil				A4-3	A5-5,6	*3*
43	Drawing: dark red		A2-1		A4-4,5	A5-4	*12*
42	White painting + WANJINA			A3-6	A4-6	A5-7	*10*
41	Red painting		A2-2	A3-7			*4*
40	Yellow paint, draw				A4-7		*2*
39	Red painting: long lines			A3-8	A4-8	A5-8	*4*
38	Battering (incl. retouch)	A1-5	A2-3	A3-9	A4-9	A5-9	*26*
37	Abraded areas					A5-10	*3*
36	Scratching				A4-10		*3*
35	Red paintings				A4-11	A5-11	*5*
34	Red painting					A5-12	*1*
33	Drawing: dark red				A4-12		*1*
32	Drawing: orange				A4-13		*3*
31	Red paintings		A2-4,5		A4-14,15		*9*
30	Red paintings		A2-6		A4-16		*16*
29	Off-white paintings				A4-17		*4*
28	Red paintings				A4-18		*4*
27	Red paintings				A4-19		*3*
26	Red paintings				A4-20		*2*
25	Red paintings					A5-13	*6*
24	Dark Red Dalal Gwion	A1-6					*1*
23	Dark Red Yowna GWION			A3-10	A4-21	A5-14	*14*
22	Dark Red Ngununu GWION			A3-10			*11*
21	Red Ngununu GWION	A1-7	A2-7		A4-22	A5-15,16	*23*
20	Yellow Ngununu GWION	A1-8	A2-8				*6*

19	Yellow hand stencils		A2-8			A5-17	*22*
18	Red hand stencil					A5-18	*1*
17	Red painting					A5-19,20	*2*
16	Red grass prints		A2-9			A5-21	*12*
15	Dark Red grass prints					A5-22,23	*25*
14	White stencils/ paintings			A3-11	A4-23	A5-24,25	*13*
13	Red paintings: crosshatch	A1-9	A2-10			A5-26	*11*
12	Red paintings: large fauna	A1-11	A2-11				*3*
11	Dark red paintings: large fauna				A4-24, 25	A5-27	*15*
10	Dark Red hand stencils				A4-26		*2*
9	Dark Red boomerang stencils	A1-10		A3-12	A4-27		*6*
8	Dark Red hand stencils	A1-12	A2-12	A3-13	A4-28		*19*
7	Red paintings			A3-14			*2*
6	Dark Red Large fauna			A3-15			*4*
5	Red (hand + arm) stencils					A5-28	*2*
4	Red paintings					A5-29	*25*
3	Red Large fauna	A1-13				A5-31	*3*
2	Red hand stencils		A2-13		A4-29	A5-30	*18*
1	Red hand stencils	A1-14	A2-14	A3-16	A4-30	A5-32	*44*

Table 25.2. Art Panel A's art sequence, as derived by amalgamating the Harris Matrix interpreted layer sequences shown in Table 25.1. The colours of the cells approximate those of the motifs in the corresponding art layers, with unpatinated scratched and abraded motifs represented in blue. The firm lines delineate currently proposed art period boundaries for Kimberley rock art; dashed lines delineate possible art period boundaries.

SEQUENCE LAYER	LAYER CHARACTERISTIC	ART PERIOD	# OF MOTIFS
49	Yellow painting		
48	Scratchings	Contact <150 BP	
47	Drawings: red, black		
46	Orange paintings WANJINA		
45	Red paintings		
44	Dark red painting/stencil	**WANJINA**	85
43	Drawing: dark red	**PAINTED HANDS**	(19%)
42	White painting + early WANJINA	Early Wanjina <5,000 BP	
41	Red painting: complex design		
40	Yellow paint, draw		
39	Red painting: long lines		
38	Battering (incl. retouch)		
37	Abraded areas	?	32
36	Scratching		(7%)
35	Red paintings		
34	Red paintings		
33	Drawing: dark red		
32	Drawing: orange		
31	Red paintings		
30	Red paintings	?	48
29	Off-white paintings		(11%)
28	Red paintings		
27	Red paintings		
26	Red painting		
25	Red paintings		

24	Dark Red Dalal Gwion		
23	Dark Red Yowna GWION		
22	Dark Red Ngunuru GWION	<12,700 BP	
21	Red Ngunuru GWION	**GWION**	83
20	Yellow Ngunuru GWION	11,500 – 12,700 BP	(18%)
19	Yellow hand stencils		
18	Red hand stencil		
17	Red painting		
16	Red grass prints		
15	Dark Red grass prints		
14	White stencils/ paintings		
13	Red paintings: crosshatch	**IRREGULAR**	
12	Red paintings: large fauna	**INFILL ANIMAL**	
11	Red paintings: large fauna		
10	Dark Red hand stencils	< 13,000 BP	145
9	Dark Red boomerang stencils		(32%)
8	Dark Red hand stencils		
7	Red paintings		
6	Dark Red Large fauna	*c* 17,300 BP	
5	Red Large fauna		
4	Red (hand + arm) stencils		
3	Red paintings		
2	Red hand stencils	**Early**	62
1	Red hand stencils	**HAND STENCILS**	(14%)

Table 25.3. The six possible combination of sequences of Art Panel A3's Layers 2 to 4. The final arrangement is not established on this Art Panel, but the relative position of the layers is derived from other Art Panels where the sequence is demonstrated.

A3–2	A3–2	A3–3	A3–4
A3–3	A3–3	A3–2	A3–3
A3–4	A3–4	A3–4	A3–2

Nevertheless, it is possible that all three Harris Matrix layers do in fact belong to the one sequence layer; that is, that they belong to the one episode or period of activity. Or, two of the layers could be contemporaneous with each other but earlier or later than the third, such that Layers 2 and 3 belong together, with both pre-dating or post-dating Layer 4. Yet in this example from Art Panel A3, these relative positionings are not known. However, if the superposition of motifs with shared characteristics from another, adjacent Art Panel clearly demonstrates a particular sequence, the combined interpreted Harris Matrix can then position the Art Panel A3 layers into their corresponding sequence, as follows:

- Layer A3-2 of Art Panel A3 equates with Layers A1-3 and A1-4 of the combined sequence.
- Layer A5-1 of Art Panel A3 equates with Layers A1-1 and A1-2 of the combined sequence.
- Layer A3-4 of Art Panel A3 also equate with Layers A1-3 and A1-4 of the combined sequence.

The final sequential arrangement of the combined layers in Table 25.1, therefore, does not have the same layer numbers as those of the individual Art Panel interpreted Harris Matrices. But it does have the same sequential ordering. For example, in the interpreted Harris Matrix of Art Panel A3 (Figure 22.2), the contemporaneous Harris Matrix layers are numbered from left to right (Layers A2, A3 and A4), but their

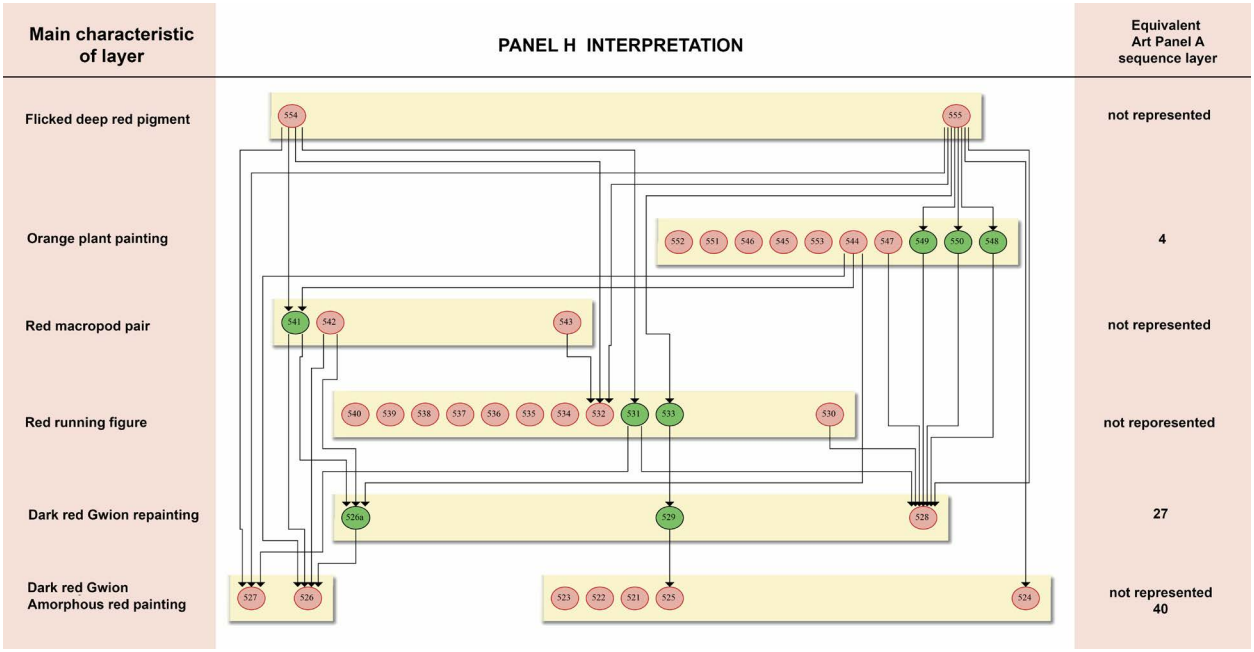


Figure 25.1. Interpretation of the Harris Matrix for Art Panel H (cf. Table 25.2).

relative position in the sequence is not shown, as all three layers appear beneath and above common layers (Layers A1 and A5).

In contrast to the layers of the individual Art Panels, which are labelled progressively from the uppermost to the lowest layers, the final sequential arrangement in the combined interpreted Harris Matrix numbers the layers progressively from the lowest (Layer #1, containing the lowest and oldest motifs in the sequence) to the most recent (Layer #49). These layers can then be compared with the presently understood sequence of Kimberley rock art periods (Table 25.2).

Of the smaller Art Panels at Pundawar Manbur, only Art Panel H has any depth (multiple layers) of superposition. The interpreted Harris Matrix for this panel does not contradict the sequence for the main Art Panel, Art Panel A. The Art Panel H sequence, however, does contain layers with motifs that show no stylistic associations with layers or individual motifs on Art Panel A (Figure 25.1). For this reason of limited stylistic overlap and a total absence of superpositions with Art Panel A, we did not synthesize Art Panel H into the combined Art Panel A interpreted Harris Matrix.

Similarly, the superposition sequences on the other small Art Panels (B–L) show no contradictions with the Art Panel A sequence. Again, however, a number of art styles not represented on Art Panel A were identified. For example, the yellow stencils with the probable European object stencil on Art Panel K are here equated with the yellow paintings in Layer 1 (the uppermost layer) of the combined Art Panel A sequence. The alternative would be to associate the yellow object stencil in Art Panel K with the other yellow stencils lower down in the sequence of layers in Art Panel A, which occur in Layer 31 of the latter, which contains Ngunuru Gwion motifs dated to *c.* 12,000 cal BP elsewhere in the Kimberley (Finch *et al.* 2021; see below for further details of motifs with associated radiocarbon ages at Pundawar Manbur). However, this alternative chronostratigraphic sequencing is not possible because the yellow object stencil (most likely a metal piece) would post-date 1644 CE (the age of first onset of metal objects in northern Australia, following Taçon *et al.* 2012). As the fresh-looking cream grass prints (#613, #617, #626, #637 and #638) of Art Panel K overlie these yellow stencils, they must be more recent than Layer 1 (the most recent art) on Art Panel A.

On Art Panel H, the red painted back-to-back macropods (#541 and #542) and the red running figure (#532) do not fit any layer categories of the Art Panel A sequence. Another motif type not represented on Art Panel A are the many string prints that occur on the upper Art Panels B, K and L. In previous sequences for Kimberley rock art, string prints, like hand prints, were assumed to belong only to the earlier layers of Kimberley rock art (e.g., Walsh 2000: 119–120). However, as the string prints on Art Panel K form a layer that *overlies* the yellow hand stencil layer that contains a stencil of a probable contact period object, it is possible (read 'probable') that in the Kimberley string prints were in fact made during more than one rock art period.

Overall, the art sequence at Pundawar Manbur broadly conforms to the presently accepted sequence framework for Kimberley rock art as presented by Welch (1993a), Walsh (2000), Donaldson (2012), O'Connor *et al.* (2013) and Veth *et al.* (2018). However, the analysis of superpositions at Pundawar Manbur we have documented in this monograph, indicates that the established framework may not be as clear-cut as previously presented. Six key findings are now evident:

- Hand stencils at Pundawar Manbur occur in the lowest (earliest) layers of the sequence (preceding the Irregular Infill Animal Period, into the Gwion Period) and in the upper, most recent art periods (the Wanjina and possibly the Painted Hands Periods).

- The earliest pigment art at Pundawar Manbur was predominantly, if not exclusively, dominated by hand stencils and should be distinguished from the Irregular Infill Animal Period, although hand stencils continued into both the Irregular Infill Animal Period and the Gwion Period before ceasing and then re-appearing in the most recent art periods.

- Ngununu Gwion and Yowna Gwion overlap or are concurrent in time at Pundawar Manbur.

- Paintings of large animals with irregular infill are not confined to the Irregular Infill Animal Period at Pundawar Manbur, but were also painted after the Yowna Gwion Period.

- Scratchings are not just confined to colonial times at Pundawar Manbur, but also occur concurrently with the battering and abraded areas prior to the Wanjina and Painted Hands Periods.

- Many motif types (such as rows of bars and small stick figures) and a range of drawings found at Pundawar Manbur have yet to be recorded and studied from other sites to clarify their position in the Kimberley rock art sequence.

DATING PUNDAWAR MANBUR'S ROCK ART

Pundawar Manbur is one of more than 200 sites visited between 2015 and 2023 as part of the Kimberley Rock Art Dating program (Australian Research Council Linkage Projects LP130100501 and LP170100155). The radiocarbon ages reported here are based on samples collected with the approval of and in conjunction with Kwini Elders and other Traditional Owners and covered by s16 permits under the WA Aboriginal Heritage Act 1972–80. The Kimberley Rock Art Dating program used a wide range of scientific techniques to research Kimberley rock art shelters; here we review those results from radiocarbon dating of mud-wasp nests in contact with rock art at Pundawar Manbur.

The shelter has large agglomerations of mud-wasp nests in cornices between the near-vertical painted panels and the ceilings above. Large portions of these agglomerations have exfoliated over the millennia. There are also fossilized single nests and small nest clusters on the more densely painted walls (Figure 25.2). Many of these are considerably weathered, with only the oval-shaped stump of the nest cells remaining.

Dating mud-wasp nests

The pigment used for the vast majority of pigment rock art surviving in the Kimberley today is based on iron oxide ochres. Paintings in the most recent Wanjina style sometimes include charcoal pigments that can be radiocarbon-dated, but these are relatively rare in Kwini Country. There is no known method to determine the age of when the ochre was mixed and applied to a rock surface as a pigment, so all recent developments in radiocarbon dating methods for Kimberley rock art are concentrated on dating material that is found either overlying or, less commonly, underlying pigment. Age estimates for such dated materials serve as minimum or maximum ages for the underlying or overlying pigment art (painting, drawing, stencil or print), respectively.

Our early fieldwork identified that small residual stumps of mud-wasp nests are commonly found in contact with rock paintings across the study region. These stumps are very much smaller than the very rare, large mud-wasp nests that have been successfully dated using optically stimulated luminescence (Roberts *et al.* 1997; Ross *et al.* 2016). The large surface area of newly built nests is subject to rapid weathering that greatly reduces the nest volume. Once the surface area is much smaller, and the remnant nest is thoroughly fossilized, the rate of volume reduction slows such that it is not unusual to find remnant nests in the Kimberley that are more than 10,000 years old (Finch *et al.* 2019). For our dating programme, recently constructed mud-wasp nests were also analysed to characterise the carbon-bearing constituents, in particular those likely to survive for millennia. Taphonomic effects on old nests were studied to identify sources of possible carbon contamination in the local environmental and geochemical context (Finch *et al.* 2019).

Methods

The mud-wasp nest samples were prepared for radiocarbon dating in the geoscience laboratories at the University of Melbourne. The method used is based on pretreatment protocols developed to reliably date excavated archaeological samples of charcoal and other pyrogenic carbon. Importantly, additional processes were also employed to ensure that indurated surface contamination on old mud-wasp nests (from dust and ash) was removed using a combination of mechanical removal of outer portions of the nest and concentrated hydrochloric acid (Finch *et al.* 2019).

The pretreated samples were then sent to the Australian Nuclear Science and Technology Organisation's (ANSTO) Centre for Accelerator Science, in Sydney. Here they were combusted, graphitised and then measured in the ANTARES accelerator mass spectrometer (AMS) (except sample OZT-797U2, which was measured using the STAR AMS) (Fink *et al.* 2004; Hua *et al.* 2004). The median carbon mass available after graphitisation was just 27 micrograms, so ANSTO used techniques and equipment optimised for the measurement of microgram-sized carbon samples (Yang and Smith 2016; Yang *et al.* 2013).

Chemical procedural blanks are routinely used at ANSTO to determine the corrections to allow for contamination intrinsic to the AMS measurement process. Since 2022, each batch of 20 samples supplied to ANSTO has also included one 'ancient' pseudo-nest blank. Pseudo-nest blanks contain a mixture of very old carbon (containing no ^{14}C) and laboratory grade quartz sand. They are pretreated alongside mud-wasp nest samples using identical processes. Since 2016, more than 500 mud-wasp nest samples have been prepared and measured. Of these, 400 were processed since 2022. This very large dataset allows for a more accurate characterisation of the uncertainties inherent in end-to-end process and adjustment of the corrections applied to the AMS measurements, particularly for the oldest and smallest carbon mass samples (Finch *et al.*, in preparation). All age estimates included here incorporate the latest correction factor, and have been calibrated using SHCal20 in OxCal v4.4.4 (Bronk Ramsey 2009; Hogg *et al.* 2020).

Motifs with dated mud-wasp nests

Mud-wasp nest samples were collected from Pundawar Manbur in July 2015 and July 2016. While a total of 17 nest samples were collected, only six nests were successfully radiocarbon-dated. The median size of

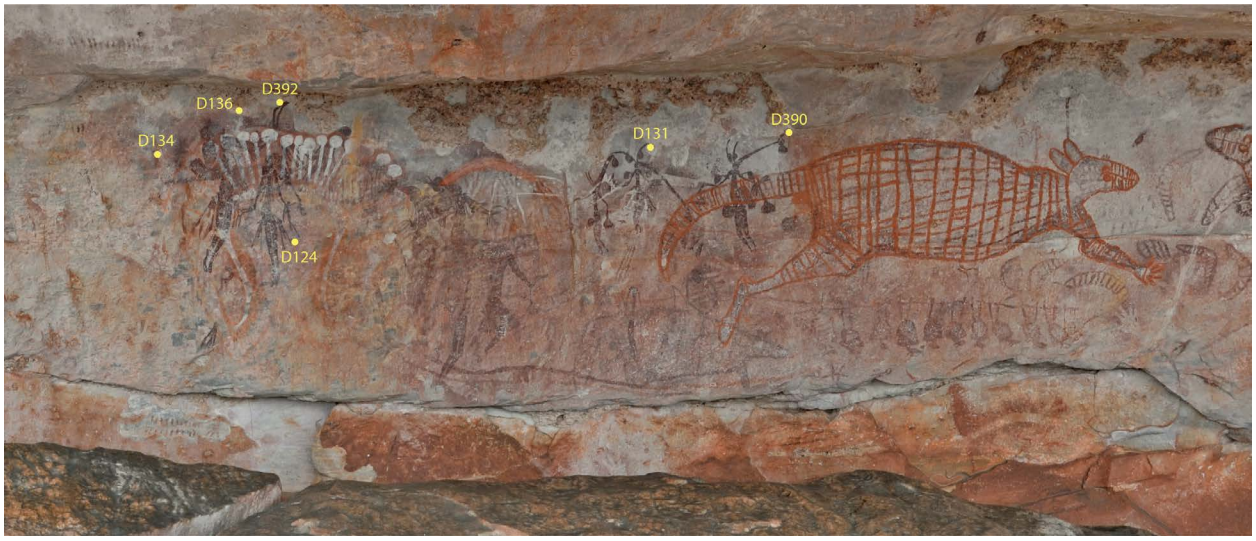


Figure 25.2. The location of six of the dated mud-wasp nests on Art Panel A. Samples D124, D134, D136 and D392 are on Art Panel A3; samples D131 and D390 are on Art Panel A4.

Table 25.4. The Pundawar Manbur motifs with pigment below or above the dated mud-wasp nests. All the radiocarbon samples were taken prior to the art recording, resulting in minor omissions in the recording of motifs #127, #189, and #104.

Radiocarbon Sample ID	Motif #	Motif type	Comment
D124	128	Ngunuru Gwion	
D131	189	Yowna Gwion	End 14mm of headdress removed
D134	104	Boomerang stencil	Area of spray pigment removed
D136	104	Boomerang stencil	Area of spray pigment removed
D392	127	Ngunuru Gwion	Part of edge of figure's boomerang removed
D390	190	Yowna Gwion	Considered contemporaneous with motif #189

Table 25.5. Radiocarbon ages for mud-wasp nests at Pundawar Manbur. IIAP = Irregular Animal Infill Period. Age calibrations undertaken with SHCal20 in OxCal v4.4.4.

Radiocarbon Sample ID	ANSTO Code	Style of Motif	Mud-wasp Nest Over or Under the Art	Conventional Radiocarbon Age (BP)	Calibrated Age (95% probability range) (cal BP)	
					Age Range	Median
D124	OZT787	Ngunuru Gwion	Over	710 ± 165	940–320	640
D131	OZU776U1	Yowna Gwion	Under	11,550 ± 320	14,110–12,750	13,420
D134	OZT797U2	IIAP	Under	17,000 ± 550	22,070–19,270	20,570
D136	OZU777U2	IIAP	Under	11,700 ± 320	14,800–12,910	13,600
D392	OZBE04	Ngunuru Gwion	Under	9450 ± 260	11,610–9910	10,710
D390	OZBE20	Yowna Gwion	Under	13,600 ± 390	17,460–15,260	16,400

Table 25.6. Summary of sample pretreatment protocol and measurements. The $\delta^{13}C$ of OZT-797U2 was measured to be -22.5‰. Other samples were not able to be reliably measured but are assumed to be -25‰ for the isotopic correction, based on an average for other similar samples. For a complete description of the pretreatment sequence, fraction, and reliability score, see Finch *et al.* (2019).

Sample ID	ANSTO Code	Pretreatment Sequence	Fraction	C Mass (µg)	Percent Modern Carbon		Reliability Score
					%	± 1σ error	
D124	OZT787	A(2M)BA(2M)	All	40.6	91.52	1.83	4
D131	OZU776U1	A(0.5M) - HLS - BA(8M)	Light	26.5	23.78	0.95	7
D134	OZT797U2	A(2M)BA(2M)	Heavy	110.0	12.03	0.82	7
D136	OZU777U2	A(0.5M) - HLS - BA(8M)	Light	40.1	23.29	0.90	8
D392	OZBE04	A(8M)BA(2M)	All	33.1	30.83	0.97	8
D390	OZBE20	A(8M)BA(2M)	All	19.4	18.40	0.87	6

all the nests was just 154mg, which is about 40% less than the average sample mass from all the Kimberley sites. The failed samples produced too little carbon to provide reliable AMS measurements. Further development of sampling and pretreatment processes significantly increased the yield of samples dated after 2017.

Six mud-wasp nests were thus dated from Pundawar Manbur. They were in contact with pigment from five different motifs (Table 25.4). One nest overlay one motif, providing minimum age constraints for that motif. The other five dated nests were all underneath pigment and therefore give maximum ages

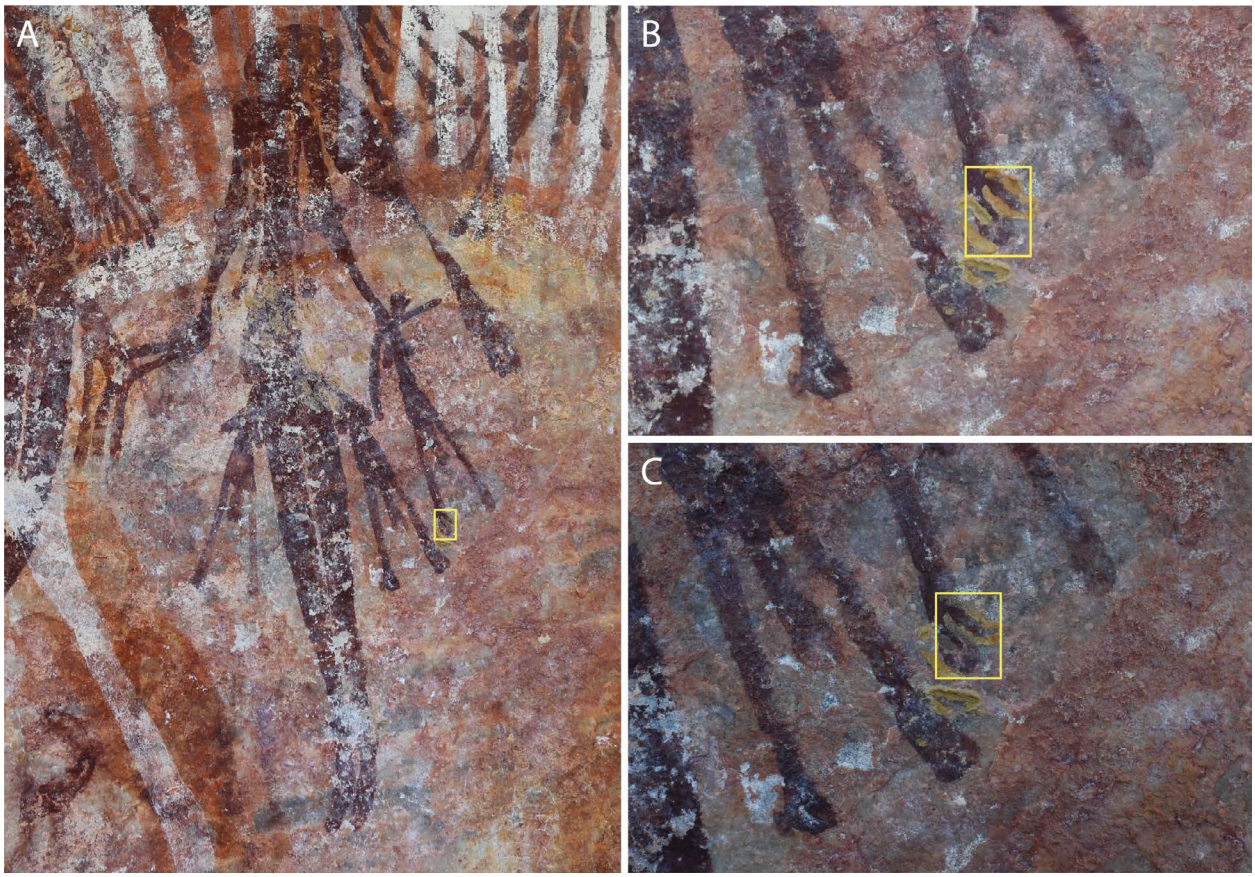


Figure 25.3. Dated mud-wasp nest (sample D124) over motif #128, on Art Panel A3. A: Location of the mud-wasp nest over the motif. The Ngunuru Gwion is older than 320 cal BP. The yellow square indicates sample location. B: Area of sample D124 before sample removal. C: Area of sample D124 after sample removal.

for their associated motifs. Figure 25.2 shows the general location of the samples, four of which come from Art Panel A3 and two from Art Panel A4. The radiocarbon ages are summarized in Table 25.5. The pretreatment method and AMS measurement details are summarized in Table 25.6. The results for individual motifs are described below.

The two cells of a mud-wasp nest overlying held objects from a Ngunuru Gwion (motif #128, Figure 7.4) were removed as radiocarbon sample D124 (Figure 25.3). The calibrated age range of this nest is 940–320 cal BP (95.4% probability range). Conservatively, for over-art nests we adopt the convention that this implies a minimum age for the motif at the younger limit of the calibrated 95.4% probability range, which is 320 years in this case. This result illustrates the obvious point that the age of an overlying nest may be

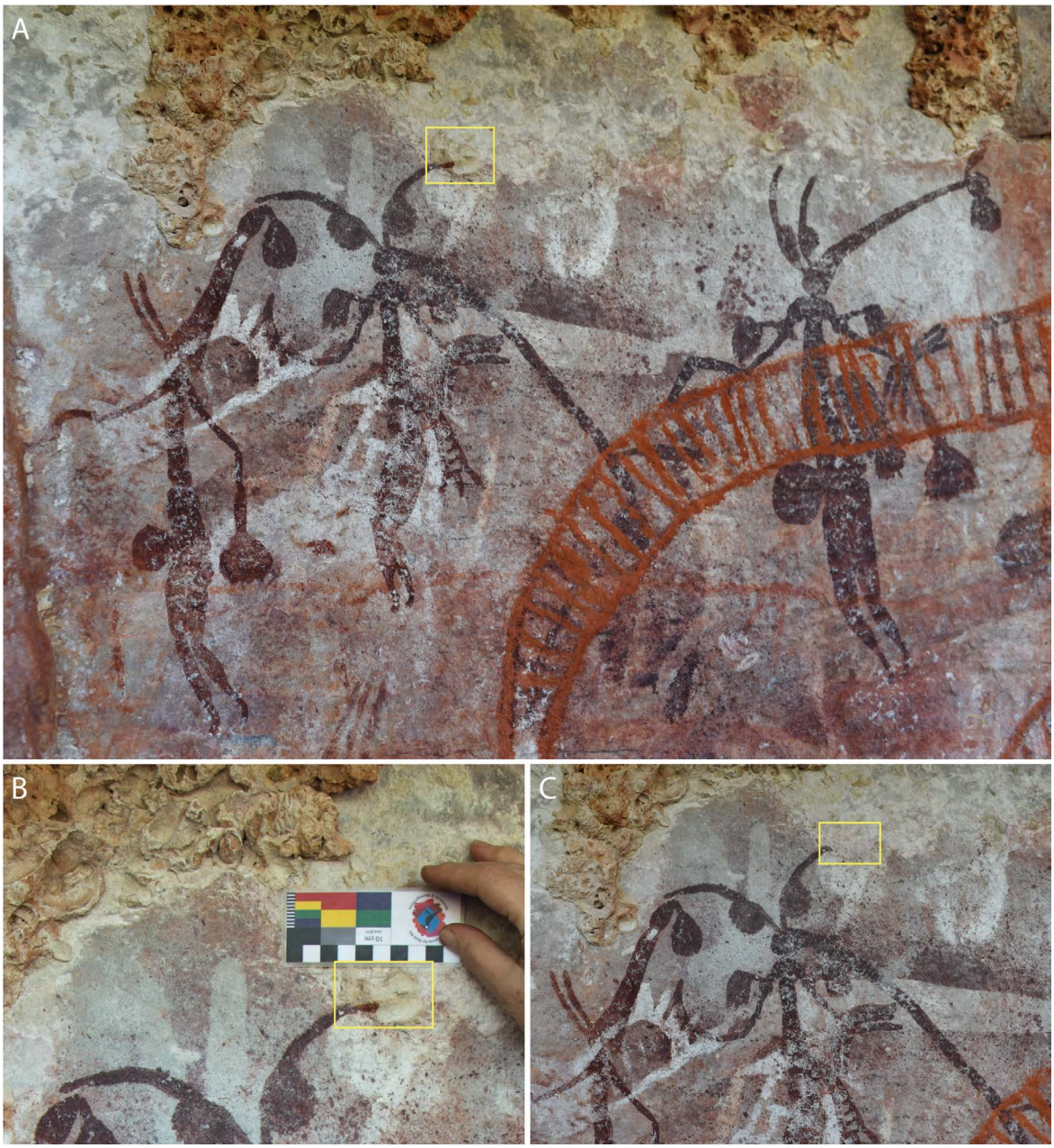


Figure 25.4. Dated mud-wasp nest (sample D131) under motif #189, on Art Panel A4. A: Location of the mud-wasp nest under a Yowna Gwion (#189). The Yowna Gwion is younger than 14,110 cal BP. The yellow rectangle indicates sample location. B: The area of sample D131 (below the scale card), before sample removal. C: The area of sample D131 after sample removal.

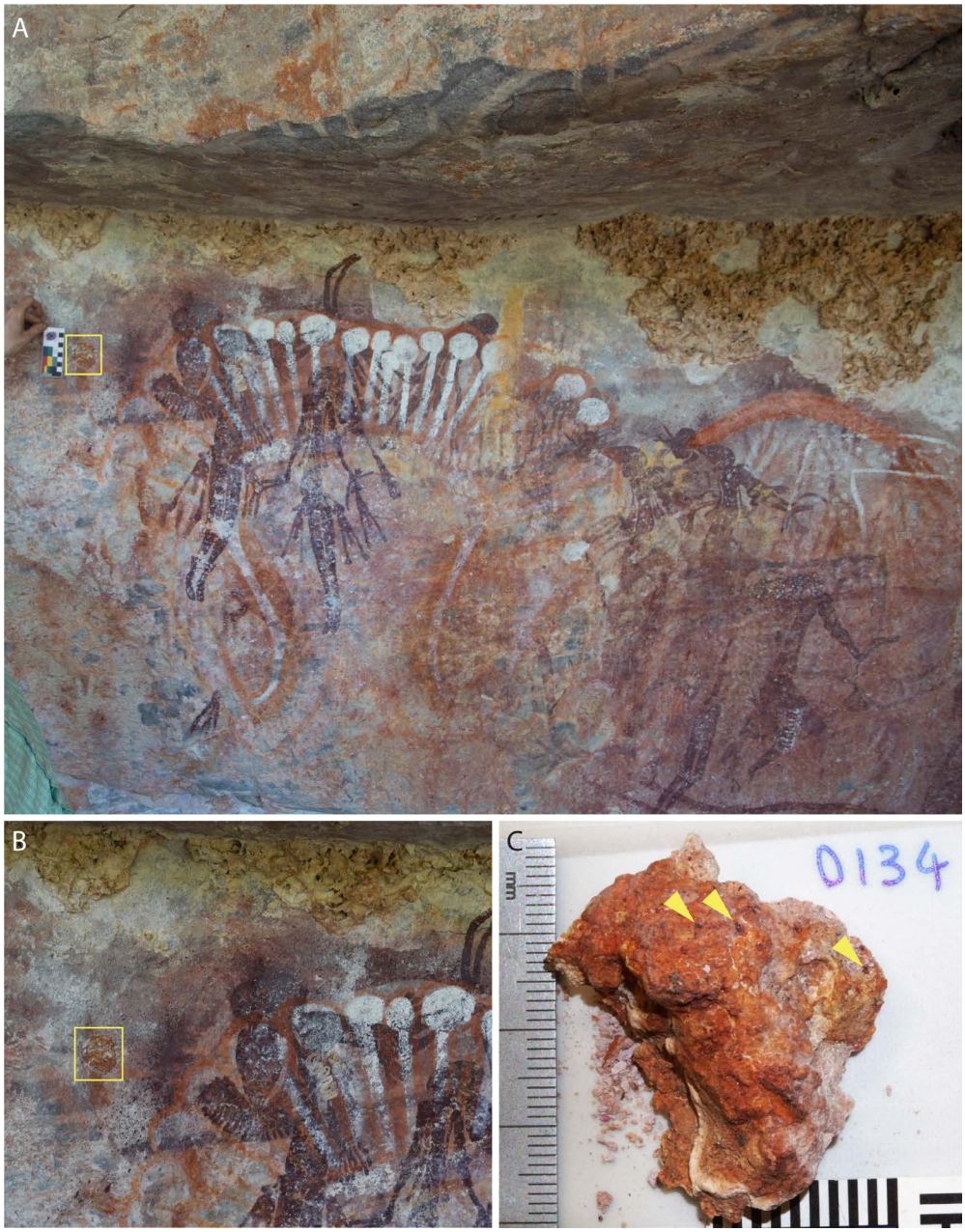


Figure 25.5. Dated mud-wasp nest (sample D134) under motif #104 (boomerang stencil), on Art Panel A3. A: D134 is an agglomeration of multi-generational wasp nests with some overlying paint splatter from the boomerang stencil. The yellow rectangle indicates sample location. B: The area of sample D134 before sample removal. C: Sample D134 after sample removal; the yellow triangles point to dots of sprayed paint over the mud-wasp nests.

very much younger than the motif itself. It is by dating a large number of nests that we can be statistically confident that the oldest of these are close to the age of this style of motif (Finch *et al.* 2020).

Radiocarbon sample D131 is a nest cluster under pigment, from what is interpreted to be one of two large feathers forming part of the headdress decoration of a Yowna Gwion (#189, Figures 8.5 and 25.4). This figure superposes a boomerang stencil (#165) and a hand stencil (#166). The age range for this nest is 14,110–12,750 cal BP. The convention for under-art nests, conservatively, is that the older end of the

Figure 25.6. Dated mud-wasp nest (sample D136) under motif #104 (boomerang stencil), on Art Panel A3. A: Sample D136 is at the thinning edge of an agglomeration of multi-generational wasp nests, with some overlying paint splatter. The yellow rectangle indicates sample location. B: The sample area in context of paint sprayed from the boomerang stencil. C: The area of sample D136 after sample removal.

calibrated age range serves as a maximum age constraint for the motif. Hence, in this case, the nest age indicates that the Yowna Gwion motif is younger than 14,110 cal BP.

Radiocarbon sample D134 is an isolated, thoroughly fossilised nest agglomeration with small dots of pigment on the outer surface (Figure 25.5). Close inspection shows that the dots appear to be of the same colour as the pigment of a boomerang stencil nearby (#104, Figure 7.3). The pigment spray extends around and beyond the sample location, so we are confident that the age of this sample serves as a maximum age for the stencilled motif. The age of the nest is 22,070–19,270 cal BP, so the stencil motif is younger than 22,070 cal BP.

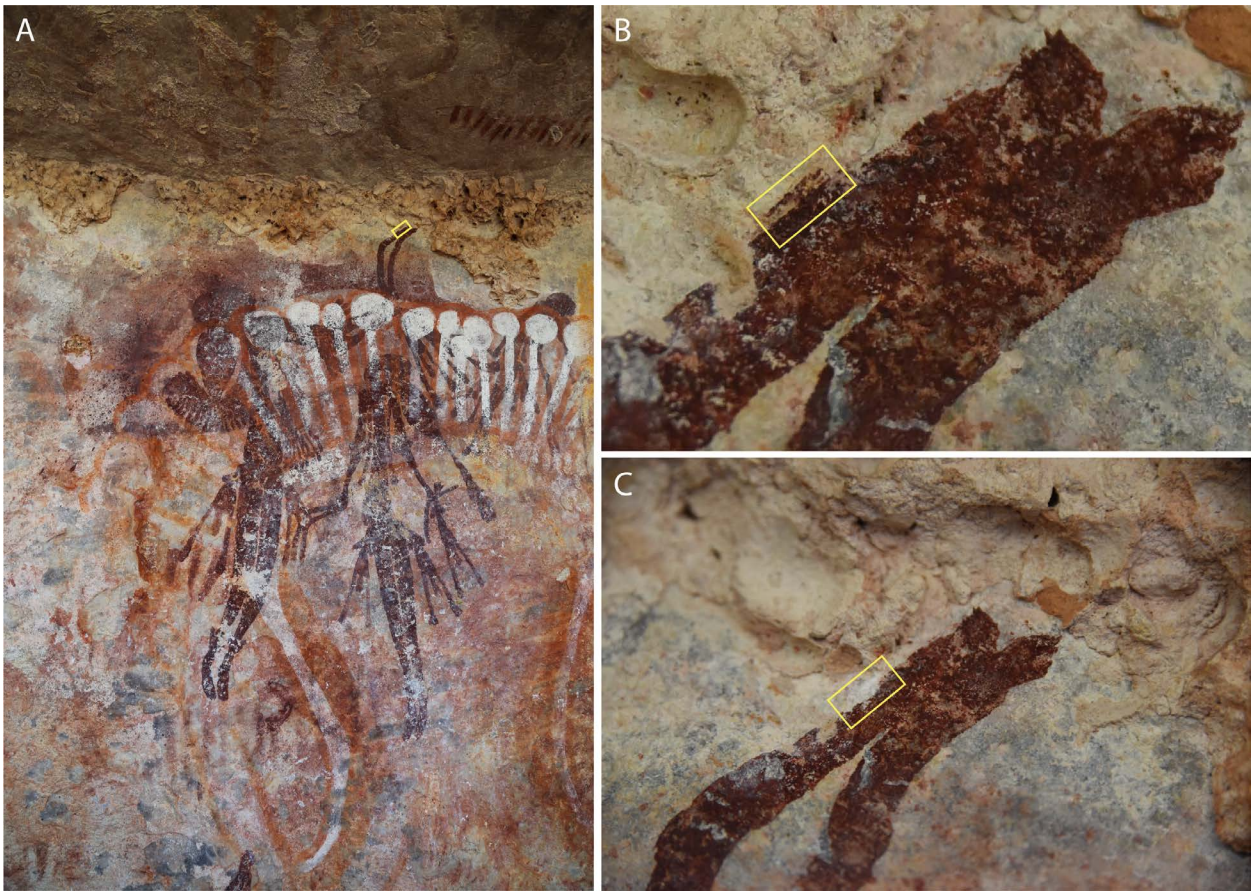


Figure 25.7. Dated mud-wasp nest (sample D392) under motif #127 (Ngunuru Gwion), on Art Panel A3. A: Sample D392 is the stump of a mud-wasp nest underlying pigment from the held and raised boomerangs of a Ngunuru Gwion motif. The yellow rectangle indicates sample location. B: The yellow rectangle identifies the area of sample D392 before sample removal. C: The area of sample D392 after sample removal.

Radiocarbon sample D136 is also a nest agglomeration with paint spray evident on its outer surface (Figure 25.6). The edge of the sample was around 7cm from the diffuse edge of the boomerang stencil (#104, Figure 7.3). The pattern and colour of the paint spray used to create the boomerang stencil indicates this was the source of the paint spots on the removed sample. The age determined for this nest is 14,800–12,910 cal BP, so the boomerang stencil is younger than 14,800 cal BP.

The Ngunuru Gwion (#127, Figure 7.4) that superposes the boomerang stencil (#104) has its arms outstretched in front of its body and holds a pair of boomerangs and a tassel in its hands (Figure 25.7). The end of the upper held boomerang was painted over the edge of the mass of fossilised nests extending down from the cornice of Art Panel A3. Radiocarbon sample D392 is the part of the nest underneath this line of pigment. The age of this sample is 11,610–9910 cal BP, hence this Ngunuru Gwion is younger than 11,610 cal BP.

The long headdress of a Yowna Gwion (#190; Figure 8.5) extends up into the accumulated mass of old mud-wasp nests, where significant exfoliation of the nests has occurred (Figure 25.8). A line extending upwards from the end of the headdress (interpreted to depict a feather) was painted over the remnant stump of a mud-wasp nest. This stump was removed as radiocarbon sample D390. It gave an age of 17,460–15,260 cal BP, so the overlying Yowna Gwion motif is younger than 17,460 cal BP.

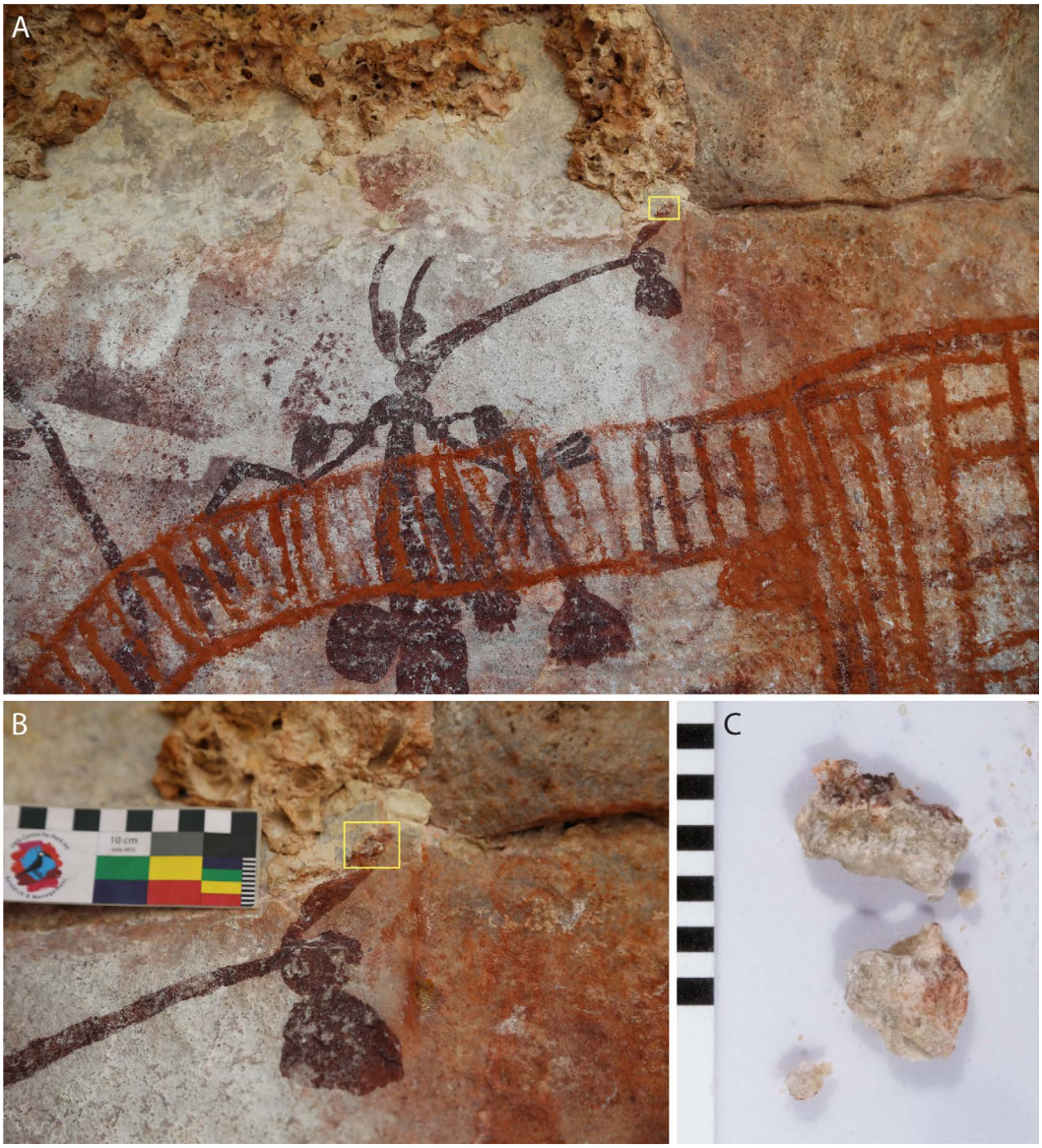


Figure 25.8. Dated mud-wasp nest (sample D390) under motif #190 (Yowna Gwion), on Art Panel A4. A: Sample D390 is the stump of a mud-wasp nest underlying pigment from a feather head-dress on a Yowna Gwion. The yellow rectangle indicates sample location. B: The yellow rectangle identifies the area of sample D390 before sample removal. C: Sample D390 after sample removal, showing deep red pigment over the sampled mud-wasp nest, with scale in millimetre units.

Age constraints in relation to results from other sites

Some of the age constraints determined for the Pundawar Manbur rock paintings and stencils are likely to be well-removed from the age of the motifs themselves, given that these are all minimum or maximum ages, not actual ages on the art itself. This is the inevitable result of dating material such as mud-wasp nests that happen to share the same surfaces used for painting and stencilling. The ages of mud-wasp nests become of most use, archaeologically, when they are considered as part of a statistical distribution of all possible nests that may be built over or under paintings in the same style or using the same conventions (Finch *et al.* 2020). When considered in the context of ages determined at other sites in the region, the most significant Pundawar Manbur results can be summarised as follows.

Three nests under pigment from three Gwion motifs established maximum ages of 11,600 cal BP for Ngunuru Gwion, and 14,100 and 17,500 cal BP for Yowna Gwion (Table 25.5). These maximum ages are consistent with the results obtained from 18 Gwion motifs from 14 other Kimberley rock art sites (Finch *et al.* 2020). Finch *et al.* (2020) concluded that Gwion motifs proliferated around 12,000 years ago. The youngest of the maximum ages and the oldest of the minimum ages are particularly informative, because they define the dated age range of art periods and should, therefore, be most critically reviewed. At Pundawar Manbur, the youngest maximum age is 11,610 cal BP from radiocarbon sample D392 (#127; a Ngunuru Gwion). This age was given a relatively high reliability score by Finch *et al.* (2020), as its carbon mass was high for an AMS measurement on a wasp-nest and underwent 'optimal' pretreatment protocols (see above; for reliability scores, see Finch *et al.* 2019). From this result, we conclude that at least some Ngunuru Gwion motifs are younger than 11,610 cal BP. As the Ngunuru Gwion were considered by Walsh (2000) to be under Yowna Gwion when found in superposition, and therefore to be older than the Yowna Gwion, either some of the Yowna Gwion are younger than *c.*11,610 cal BP, or at least some of the two forms of Gwion are contemporaneous, as suggested by Walsh (2000).

Walsh (2000:117) attributed boomerang stencils to the oldest period of Kimberley pigment art: the Irregular Infill Animal Period. At Pundawar Manbur, we see paint from a boomerang stencil superposed by other motifs including Yowna Gwion figures, so this evidence is consistent with Walsh's relative chronology. The two mud-wasp nests underlying stencil paint indicate that the stencils are younger than 14,800 and 22,070 cal BP. The younger age had a relatively high carbon mass and improved pretreatment protocols, so we confidently conclude the boomerang stencil (#104) is younger than 14,800 cal BP.

THE PUNDAWAR MANBUR ROCK ART SEQUENCE

From these results of the relative sequence and minimum and maximum radiocarbon ages for the rock art, we can conclude with the following rock art sequence for Pundawar Manbur.

Of the motifs in contact with dated mud-wasp nests, patterns of superposition at Pundawar Manbur indicate that a boomerang stencil (#104) is the oldest. The youngest of two underlying mud-wasp nests is dated to 14,800–12,910 cal BP (this is the uncertainty range for the younger of the two mud-wasp nests under the boomerang stencil), so this stencil must be younger than 14,800 cal BP.

The pair of Yowna Gwion figures (#189 and #190) that overlie a boomerang motif (#165) each have maximum age constraints from the separate underlying nests. The youngest date of these indicates that the pair were painted some time after 14,110 cal BP.

The Ngunuru Gwion (#127) overlies a mud-wasp nest that has an age of 11,610–9910 cal BP. The Ngunuru Gwion is therefore younger than 11,610 cal BP.

At Pundawar Manbur, then, the dating of the Gwion figures cannot resolve the chronological relationship between the Yowna and Ngunuru Gwion, given the small number of radiocarbon ages on underlying and overlying mud-wasp nests. Elsewhere in the Kimberley, a Ngunuru Gwion painting has been firmly dated by underlying and overlying mud-wasp nest dates to between 10,890 and 13,180 cal BP (Finch *et al.* 2020). No such sandwiching of dates has been published for the Yowna or other Gwion forms from anywhere in the Kimberley.

As mentioned above, the sequence of superpositions from the interpreted Harris Matrix presented in this monograph indicates that some Ngunuru Gwion were painted prior to some Yowna Gwion. However, on Art Panel A3, where both forms of Gwion were painted in the same colour and with the same overall degree of motif definition, but where the two types of Gwion do not lie in superposition, they appear to be contemporaneous by virtue of their shared characteristics noted here. This indicates that while sometimes Ngunuru Gwion are earlier than Yowna Gwion, their contemporaneity in this instance indicates that there is also a chronological overlap between the two forms.

Chapter 26
Conclusion

THE *GENIUS LOCI*

From the long rock art sequence that we have reported from Pundawar Manbur, we can see that this was a place to which people repeatedly returned, despite it not being well-suited to everyday occupation. It is, and appears to have always been, a special place in this landscape—one that demanded the regular attention of Kwini traditional custodians. Pundawar Manbur emits a strong sense of place, what an architect would call a '*genius loci*' (literally 'the spirit of a place'). Many urban and landscape architects working in the Western tradition see it as their task to create *genius loci*, or meaningful places (Jivén and Larkham 2003; Norberg-Schultz 1980), but they also recognise that many existing places already emit their own special senses of place. It is thus often pointed out that the job of the architect is to enhance and celebrate this 'genius of the place', rather than to create it anew (Alexander Pope 1731: line 35). In the Western tradition, the history of the concept of *genius loci* extends far back in time and it is also widespread across space and cultures. It can be traced at least as far back as ancient Rome where the term referred to more than just the sense of place: it spoke of the protective spirit or spirits of that place. In this older European sense, societal engagement with the *genius loci* extended far beyond ambience. It required participant engagement: the *genius loci* needed to be honoured with art and other offerings (Andreotti 2019).

This concept of *genius loci* has relevance far beyond Europe. Asian gardens and landscape designs, for example, draw upon it (Fiévé 2017). African rock shelters often have it: in central Tanzania, for example, Waasi ritual specialists honour the spirits of a place by splashing beer on the rock surfaces (Bwasiri 2011); in northern Zambia, shrines were built in rock shelters to honour the spirits (Smith 1997); in central Mozambique, a traditional custodianship system operates to mediate relations with the spirits of important rock shelters (Jopela and Frederiksen 2015); and in Malawi and Zimbabwe, there is a formal network of territorial spirit shrines (Schoffeleers 1979). Most important African rock shelters have a *genius loci*, and most have also been adorned with rock art.

UNBREAKABLE BONDS

In Australia, early writers—despite their prejudices and regular misunderstandings and misconceptions of Aboriginal world views and cultural practices—repeatedly commented on the extraordinarily detailed relationship between Aboriginal peoples and their landscapes. Spencer and Gillen (1904: 249) noted this specifically, for example: 'All the time, as we travelled along, the old men were talking amongst themselves about the natural features associated in tradition with these and other totemic ancestors of the tribe, and pointing them out to us'. People and places were, and are, intimately connected through the forever-present ancestral beings and ancestral forces that give people and place (hi)story, belonging, Law and life (e.g., Stanner 2014). Aboriginal peoples across Australia know well that every place has its living, affective spirit(s), and often talk and write about this (e.g., li-Yanyuwa *et al.* 2023).

Rock shelters and a huge range of landscape features all across Australia are associated with the actions of spirit-beings. Sometimes those landscape features are the metamorphosed beings (or parts there-of) themselves, and Law (handed down to the living from the originary ancestral beings) associates people with places as inseparable (e.g., li-Yanyuwa *et al.* 2023). Such beings include many types of Spirit Ancestors, ancestral heroes and heroines connected by kin, spirit-children and a large variety of powerful monster spirits and animals (Nicholls 2014). These beings are necessarily local, remembered at specific places in specific landscapes: these are the *genii loci* and their presence demands the attention of the living. Law demands it, as Law is the blueprint by which the living must behave and fulfil obligations and duties to places, ancestral beings and kin (e.g., Taylor 2018). People and places are relational, and at the heart of

how people connect with place is through the ancestral spirit-beings from that place and from which each rises, and the incumbent duties that the living must fulfil in life to maintain the world's fecundity and lawful order. Despite being locally situated and understood, some ancestral spirit-beings travelled long distances and are known (by different names) amongst many different language groups. An example are the songlines of the Seven Sisters (Neale 2017).

While the spirit-beings have ancestral presences across the Australian landscape, and are locally known through 'Dreaming' cosmologies (which varies between Aboriginal cultures), all require continued respect and engagement, both in everyday life and in dedicated rituals that instruct the living, enable them to fulfil ancestral duties by which the world can continue to operate in safe and appropriate ways, or upon death to return a person's spirit to their originary place (e.g., see Elkin 1938; Stanner 2014; Worms 1940, 1950, 1952). The landscape connections to the spirit-beings are sometimes singular, such as where a specific being emerged at the beginning of time and undertook some particular activity, or they may be linear or broader, such as following a historic route taken along a songline (e.g., Blundell and Woolagoodja 2005; li-Yanyuwa *et al*. 2023; Merlan 1989). Initiation ceremonies in many parts of Australia follow these routes. Individuals will also make efforts to retrace these routes or they will undertake visits to a selected group of singular places. These stopovers at important places are traditional custodianship responsibilities for many Aboriginal Traditional Owners.

MAINTAINING PUNDAWAR MANBUR

We can be confident that stop-overs, for a few hours, sometimes days, will have been a regular part of the maintenance practices among past Kwini Traditional Owners of Pundawar Manbur. Current Traditional Owners remember the importance of this place, knowing that it has spirit presence—*genii loci*—and being interested in the challenge as to whether archaeology can assist in knowing more about the things the Old Ancestors did here, the rituals and custodianship actions undertaken by them. This inspired our research team—consisting of Senior Traditional Owner Elder Augie Unghangho and younger kin researching together both on-Country and at the university campuses—and made us all continuously reflect on our roles and responsibilities at this site. It is clearly not the role of archaeology or of archaeologists to speak *for* Pundawar Manbur; that is the responsibility of the Traditional Owners. But, together, we have been asked to research and speak *about* Pundawar Manbur, in a respectful way that defers to the place and its intimately connected ancestral beings and present Traditional Owners connected as kin. Here archaeology can provide important glimpses of how the site was maintained and cared for in the past, an archaeological knowledge requested by Kwini Traditional Custodians today. This is not the only story to be told, but it is one that has emerged from years of partnership research on-Country.

At Pundawar Manbur we have charted ancestral engagements over more than 12,000 years, using archaeological observations (what Taçon and Chippindale (1998) call 'formal' methods). We have observed regular additive and subtractive re-use of the rock art as each generation of Traditional Custodians responded to the needs of the site in their own special ways. The nature of custodianship visibly altered with different types of images being added in different periods, and with some older images targeted for special attention either through repainting, retouching, rubbing, scratching or 'battering'. Battering may well not be the appropriate English term. We have argued elsewhere (Gunn *et al*. 2022: 21) that battering, in common with other subtractive engagements, was most likely a moment of affecting, a moment of re-creation, and/or a moment of honouring. Today, people talk of 'stock markets taking a battering' and of climate change 'battering the environment'; what happened at Pundawar Manbur was a very different kind of battering. The act of battering was not to intend to inflict damage; on the contrary, it sought to respect and awaken the site using subtractive engagement. Perhaps it was more like 'knocking', as we would knock on a door in our wish to gain the attention and to interact with those beyond the door.

In these and other ways, Pundawar Manbur exerted a consistent agency: all of the actions by the multiple generations of Traditional Owners and site users responded to their presence (for another example, see Brady 2016). To a real degree, therefore, the story of the painting and repainting of Pundawar Manbur is a

biography of its *genii loci*. The site has its own ancestral spirit-forces that called on people to act in certain ways. Through time, as knowledge of those forces changed, so, too, did the duties and responses. This monograph records, analyses and interprets some of these responses. It is therefore as much a biography of the *genii loci* of Pundawar Manbur as it is a history of place. The place was not fixed and inert; it was dynamic and continuously changing, but with the constant that all who came to the place did so with the understanding that being there involved and necessitated meaningful engagement with Law.

SITE BIOGRAPHY

This monograph is therefore somewhere between a scientific monograph and a biography of place. It can be read in the two ways, depending on one's perspective. But, for all of us, Pundawar Manbur is much more than a geological formation. It is a living presence in the landscape, it contained and it still contains an ancestral force. Kwini knowledge states that in places like Pundawar Manbur, failure to engage in appropriate ways impacts upon the living, the environment and all things. We therefore approach the site as we would a person, with the aim of describing their life-story. And we do so in the understanding that the site itself is kin, as taught by Traditional Owners. It may not be kin to each and every author or reader of this monograph, but it is kin among Kwini, and as family the site itself needs to be treated with care and respect. The 49 layers of rock art images and the evidence of engagements with these images provide chapters in this biography. As with all biographies, this one has been told from a perspective – in this case from the perspective of a team of archaeologists and Traditional Owners working together mainly to reveal its formal qualities, in the understanding that it is located in deeply meaningful Kwini cosmology. We present it as a respectful biography, and we make no claim to this being a comprehensive life history; we know that it is not. We trust that this biography can complement other biographies of Pundawar Manbur told from the perspectives of kin. The non-Kwini authors among us thank our Kwini hosts for giving us the opportunity to undertake this research together, and we hope that we have lived up to at least some of the expectations.

References

Akerman, K. 2016. *Wanjina: notes on some iconic Ancestral Beings of the Northern Kimberley*. Victoria Park (WA): Hesperian Press.

Andreotti, G. 2019. Riverlare il genius loci. *Bollettino Della Società Geografica Italiana* 7(4): 533–558. https://follypedia.fandom.com/wiki/Genius_loci

Archer, M., T. Flannery and G.C. Grigg 1985. *The Kangaroo*. McMahons Point (NSW): Weldons.

Birdsell, J.B. 1993. *Microevolutionary patterns in Aboriginal Australia: a gradient analysis of clines*. Oxford: Oxford University Press.

Blundell, V. and D. Woolagoodja 2005. *Keeping the Wandjinas fresh: Sam Woolagoodja and the enduring power of Lalai*. Fremantle: Fremantle Arts Centre Press.

Bradshaw, J. 1892. Notes on a recent trip to Prince Regent's River. *Royal Geographical Society of Australia (Victorian Branch) Transactions* 9: 90–103.

Brady, L.M. 2010. *Pictures, patterns and objects: rock-art of the Torres Strait Islands, Northeastern Australia*. North Melbourne: Australian Scholarly Publishing.

Brady, L.M., J.J. Bradley and A.J. Kearney 2016. Negotiating Yanyuwa rock art: Relational and affectual experiences in the southwest Gulf of Carpentaria, northern Australia. *Current Anthropology* 57: 28–52. https://doi.org/10.1086/684683

Brady, L.M., R.G. Gunn, and J. Goldhahn 2021 Rock Art Modification and its Ritualized and Relational Contexts, in B. David and I.J. McNiven (eds), *The Oxford Handbook of the Archaeology of Indigenous Australia and New Guinea*. Oxford University Press. DOI: 10.1093/oxfordhb/9780190095611.013.37

Bwasiri, E.J. 2011. The implication of the management of Indigenous living heritage: The case study of the Mongomi wa Kolo rock paintings World Heritage Site, central Tanzania. *South African Archaeological Bulletin* 66: 60–66. https://www.jstor.org/stable/41408533

Capell, A. 1972. *Cave painting myths: Northern Kimberley*. Oceania and Linguistic Monographs 18. Sydney: University of Sydney.

Capitan, L., H. Breuil and D. Peyrony 1910. *La Caverne de Font-de-Gaume aux Eyzies (Dordogne)* (2 Vols). Monaco: Imprimerie Vve.

Capitan, L., H. Breuil and D. Peyrony 1924. *Les Combarelles aux Eyzies (Dordogne)*. Paris: Masson.

Cartailhac, É. and H. Breuil 1906. *La Caverne d'Altamira à Santillane près Santander (Espagne)* (2 Vols). Monaco: Imprimerie Vve.

Chalmin, E. and J. Huntley 2018. Characterising rock art pigments, in B. David and I.J. McNiven (eds), *The Oxford Handbook of the Archaeology and Anthropology of Rock Art*: 857–884. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190607357.013.46

Chaloupka, G. 1977. Aspects of the chronology and schematisation of two prehistoric sites on the Arnhem Land Plateau. In P. J. Ucko (ed.), *Form in Indigenous Art*: 243–259. Canberra: Australian Institute of Aboriginal Studies.

Chaloupka, G. 1993. *Journey in time: The world's longest continuing art tradition*. Chatswood: Reed.

Chippindale, C. and P.S.C. Taçon 1993. Two old painted panels from Kakadu: Variation and sequence in Arnhem Land rock art, in J. Steinbring, A. Watchman, P. Faulstich and P.S.C. Taçon (eds), *Time and Space: Dating and Spatial Considerations in Rock Art Research*: 32–56. Occasional AURA Publication 8. Australian Rock Art Research Association, Melbourne.

Clarke, J. 1978. Deterioration analysis of rock art sites, in C. Pearson (ed.), *Conservation of rock art*:54–63. Perth: ICCM.

Clegg, J. 1991. !Pictures and pictures of... in P. Bahn and A. Rosenfeld (eds), *Rock art and prehistory*:109-111. Oxbow Monograph 10. Oxford: Oxbow Books.

Clement, C., J. Gresham and H. McGlashan 2012. *Kimberley History: people, exploration and development*. Perth: Kimberley Society.

Cole, N., C. Musgrave, R. George, L. Wallis and the Laura Indigenous Land and Sea Rangers 2024. Categorising catfish, Jewfish and Eel motifs in Laura (Quinkan) rock art, Cape York Peninsula, Australia. *Rock Art Research* 41(1): 28–40.

Coutts, P.J.F. and M. Lorblanchet 1982. *Aborigines and rock art in the Grampians*. Records of the Victoria Archaeological Survey 12. Melbourne: Ministry for Conservation.

Crawford, I.M. 1968. *The art of the Wandjina*. Melbourne: Oxford University Press.

Crawford, I.M. 1977. The relationship of Bradshaw and Wanjina art in north-west Kimberley, in P.J. Ucko (ed.), *Form in Indigenous Art*: 357–369. Canberra: Australian Institute of Aboriginal Studies.

Delannoy, J.J., B. David, K. Genuite, R. Gunn, D. Finch, S. Ouzman, H. Green, P. Veth, S. Harper, Balanggarra Aboriginal Corporation and R.J. Skelly 2020. Investigating the anthropogenic construction of rock art sites through archaeomorphology: the case of Borologa, Kimberley, Australia. *Journal of Archaeological Method and Theory* 27:631-669. https://doi.org/10.1007/s10816-020-09477-4

Delannoy, J.-J., B. David, J.-M. Geneste, M. Katherine, B. Barker, R.L. Whear and R.G. Gunn 2013. The social construction of caves and rockshelters: Chauvet Cave (France) and Nawarla Gabarnmang (Australia). *Antiquity* 87:12–29. https://doi.org/10.1017/S0003598X00048596

Delannoy, J.-J., B. David, J.-M. Geneste, M. Katherine, B. Sadier and R. Gunn 2017. Engineers of the Arnhem Land plateau: evidence for the origins and transformation of sheltered spaces at Nawarla Gabarnmang, in B. David, J.-J. Delannoy, J.-M. Geneste and P. Taçon (Eds), *The archaeology of rock art in western Arnhem Land, Australia*: 197–243. Terra Australis 47. Canberra: ANU Press.

Delannoy J.-J., B. David, R. Gunn, J.-M. Geneste and S. Jaillet 2018. Archaeomorphological mapping: Rock art and the architecture of place, in B. David and I.J. McNiven (Eds), *The Oxford handbook of the archaeology and anthropology of rock art*: 833–856. Oxford: Oxford University Press. https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780190607357.001.0001/oxfordhb-9780190607357-e-46

Donaldson and K. Kenneally (eds) 2007. *Rock art of the Kimberley*. Perth: Kimberley Society.

Donaldson, M. 2012a. *Kimberley Rock Art – Volume Two: North Kimberley*. Wildrocks Publications, Perth.

Donaldson, M. 2012b. *Kimberley Rock Art – Volume One: Mitchell Plateau Area*. Wildrocks Publications, Perth.

Doring, J. (ed.) 2000. *Gwion Gwion: secret and sacred pathways of the Ngarinyin people of Australia*. Koln: Könemann.

Edwards, R. (ed.) 1975. *The preservation of Australia's Aboriginal Heritage*. Canberra: Australian Institute of Aboriginal Studies.

Elkin, A.P. 1938. *The Australian Aborigines*. Sydney: Angus and Robertson.

Environment and Energy, Dept. n.d. *NVIS Fact sheet: MVG12- Tropical eucalypt woodlands/ grasslands*. Canberra: Dept of the Environment and Energy.

Field, E., H.A. McGowan, P.T. Moss and S. K. Marx 2017. A late Quaternary record of monsoon variability in the northwest Kimberley, Australia. *Quaternary International* 449: 119–135. https://doi.org/10.1016/j.quaint.2017.02.019

Fiévé, N. 2017. The genius loci of Katsura: Literary landscapes in early modern Japan. *Studies in the History of Gardens and Designed Landscapes* 37(2): 134–156. https://doi.org/10.1080/14601176.2016.1239402

Finch, D.A. Gleadow, J. Hergt, P. Heaney, H. Green, C. Myers, P. Veth, S. Harper, S. Ouzman, and V.A. Levchenko 2021. Ages for Australia's oldest rock paintings. *Nature Human behaviour*. doi. 10.1038/s41562-020-01041-0.

Finch, D., A. Gleadow, J. Hergt, V.A. Levchenko, P. Heaney, P. Veth, S. Harper, S. Ouzman, C. Myers and H. Green 2020. 12,000-year-old Aboriginal rock art from the Kimberley region, Western Australia. *Science Advances* 6: eaay3922. https://doi.org/10.1126/sciadv.aay3922

Finch, D., A. Gleadow, J. Hergt, V.A. Levchenko and D. Fink 2019. New developments in the radiocarbon dating of mud wasp nests. *Quaternary Geochronology* 51:140–154.

First Peoples – State Relations Department 2024. *Fact Sheet – Aboriginal rock art.* Melbourne: Victorian Government. https://www.firstpeoplesrelations.vic.gov.au/fact-sheet-aboriginal-rock-art

Flood, J., I. Johnson and S. Sullivan 1989. *Sites and bytes: recording Aboriginal places in Australia*. Special Australian Heritage Publication Series No.8. Canberra: Australian Government Publishing Service.

Fritz, C., G. Tosello, P. Fosse, M. Langlais, R. Bégouën, J. Clottes, A.Pastoors, F. Faist, F. Bourges and S. Lacombe 2009. *Le Sanctuaire Secret des Bisons: il y a 14000 ans dans la Caverne du Tuc D'Audoubert*. Paris: Somogy Editions d'Art.

Genuite, K., J.-J. Delannoy, B. David, A. Unghango, Balanggarra Aboriginal Corporation, G. Cazes, R. Fulop, D. Fink, A. Codilean, S. Ouzman, P. Veth, S. Harper, H. Green and D. Finch 2021. Determining the origin and changing shape of landscape-scale rock formations with three-dimensional modelling:

The Borologa rock shelters, Kimberley region, Australia. *Geoarchaeology* 36:662–680. https://doi.org/10.1002/gea.21863

Geoscience Australia 2019. *Australian Stratigraphic Units Database: Warton sandstone*. Accessed online 22/12/20 at https://asud.ga.gov.au/search-stratigraphic-units/results/19549

Grey, E.M. 2023. Plant-People Relationships in Balanggarra Country, Northwest Australia: A Relational Approach to Indigenous Rock Art. Unpublished PhD dissertation, University of Western Australia.

Grey, G. 1841. *Journal of two expeditions of discovery in North-West and Western Australia during the years 1837, 38 and 39* (Volume 1). Boone, London.

Gunn, R.G. 1981. *The prehistoric rock art sites of Victoria: a catalogue*. Occasional Report Series No 5. Melbourne: Victoria Archaeological Survey.

Gunn, R.G. 1983. *Mt Pilot 1 Aboriginal rock art site*. Occasional Report Series No 16. Melbourne: Victorian Archaeological Survey.

Gunn, R.G. 2006a. Mulka's Cave Aboriginal rock art site: its context and content. *Records of the Western Australian Museum* 23: 19–41

Gunn, R.G. 2006b. Hand sizes in rock art: interpreting the measurements of hand stencils and prints. *Rock Art Research* 32(1): 97–112.

Gunn, R.G. 2007. The interpretation of handedness in Australian Aboriginal rock art. *Rock Art Research* 24(2): 199–208.

Gunn, R.G. 2018. *Art of the ancestors: Spatial and temporal patterning in the rock art of Nawarla Gabarnmang, a major Jawoyn cultural site on the Arnhem Land plateau*. Oxford, Archaeopress.

Gunn, R.G. 2019. Degrees of change: amendment and alteration in Aboriginal rock art, in J. Huntley and D. Nash (eds), *Festschrift for John Clegg*: 87–98. Oxford: Archaeopress.

Gunn, R., B. David, J-J. Delannoy, B. Smith, A. Unghangho, I. Waina, Balanggarra Aboriginal Corporation, L. Douglas, C. Myers, P. Heaney, S. Ouzman, P. Veth and S. Harper 2022. Superpositions and superimpositions in rock art studies: Reading the rock face at Pundawar Manbur, Kimberley, northwest Australia. *Journal of Anthropological Archaeology* 67 (2022) 101442. https://doi.org/10.1016/j.jaa.2022.101442

Gunn, R.G., B. David, L. Douglas, J-J. Delannoy, S. Harper, P. Heaney, S. Ouzman and P. Veth 2019. 'Kimberley Stout figures': a new rock art style for Kimberley rock art, north-western Australia. *Australian Archaeology*, 85(2): 151–169.

Gunn, R.G. and S. Lowish 2017. The Morellian Method and its potential in rock art research. *Rock Art Research* 34(2): 193–205.

Gunn, R.G., C.L. Ogleby, D. Lee and R.L. Whear 2010. A method to visually rationalise superposed pigment motifs. *Rock Art Research* 27(2): 131–136.

Gunn, R.G., E. Webb and D. Marmion 1997. Walganha (Walga rock): a Wajarri rock art and Dreaming site. Unpublished report to the Yamaji Language Centre, Geraldton, and the Australian Heritage Commission, Canberra.

Harman, J. 2015. Using DStretch for rock art recording. *INORA* 72: 24–30.

Harris, E.C. and R.G. Gunn 2018. The use of Harris Matrices in rock art research, in B. David and I. McNiven (eds), *The Oxford handbook of the archaeology and anthropology of rock art*: 911–926. Oxford: Oxford University Press. doi.org/10.1093/oxfordhb/9780190607357.013.18.

Huntley, J., M. Aubert, J. Ross, H.E.A. Brand and M.J. Morwood 2015. One colour, (at least) two minerals: a study of mulberry rock art pigment and a mulberry pigment 'quarry' from the Kimberley, Northern Australia. *Archaeometry* 57(1): 77–99.

Jivén, G and P. J. Larkham 2003. Sense of place, authenticity and character: A commentary. Journal of Urban Design 8(1): 67–81. https://doi.org/10.1080/1357480032000064773

Jopela, A. and P.D. Fredriksen 2015. Public archaeology, knowledge meetings and heritage ethics in southern Africa: an approach from Mozambique. *World Archaeology* 47(2): 261–284. https://doi.org/10.1080/00438243.2015.1016583

Lewis, D. 1997. Bradshaws: The view from Arnhem Land. *Australian Archaeology* 44: 1–16.

li-Yanyuwa (Yanyuwa Elders), L.M. Brady, J. Bradley and A. Kearney 2023. *Jakarda Wuka (Too Many Stories): Narratives of Rock Art from Yanyuwa Country in Northern Australia's Gulf of Carpentaria*. Sydney: Sydney University Press.

Lorblanchet, M. 2001. *La Grotte Ornée de Pergouset (Saint-Gery. Lot): Un Sanctuaire Secret Paleolithique.* Paris: Éditions de la Maison des Sciences de l'Homme.

Lorblanchet, M. 2010. *Art Pariétal: Les Grottes Ornées du Quercy*. Arles: Éditions du Rouergue.

Love, J.B.R. 1930. Rock paintings of the Worrora and their mythical interpretation. *Journal of the Royal Society of Western Australia* 16: 1–24.

Maddock, K. 1970. Imagery and social structure at two Dalabon rock art sites. *Anthropological Forum* 2: 444–463.

Mangolamara, S, L. Karadada, J. Oobagooma, D. Woolagoodja and J. Karadada 2018. *We are coming to see you*. Fremantle: Fremantle Press.

Maynard, L. 1977. Classification and terminology in Australian rock art, in P.J. Ucko (ed.), *Form in indigenous art*:387–402. Canberra: AIAS.

McCarthy, F.D. 1972. Recording art on rock surfaces. In D.J. Mulvaney (ed), *Australian archaeology: a guide to field and laboratory techniques*, pp. 53–70. Canberra, Australian Institute of Aboriginal Studies.

McCarthy, F.D. 1976. *Rock art of the Cobar pediplain in central western New South Wales*. Canberra, Australian Institute of Aboriginal Studies.

McCarthy, F.D. 1983. *Catalogue of rock engravings in the Sydney Hawkesbury District, NSW*. Sydney: National Parks and Wildlife Service.

McDonald, J. Cultural Heritage Management 1997. Art recording of Blackfellows Hands Site Complex, Newnes Plateau, via Lithgow, NSW. Unpublished report to the NSW National Parks and Wildlife Service, Blue Mountains District.

McDonald, J. 2008. *Dreamtime superhighway: Sydney Basin rock art and prehistoric information exchange*. Terra Australis 27. Canberra, Australian National University E-Press.

McDonald, J. 2020. Serpent's Glen (Karnatukul): New histories for deep Time attachment to country in Australia's Western Desert. *Bulletin of the History of Archaeology* 30(1): 5, 1–13. DOI: https://doi.org/10.5334/bha-624.

McDonald, J., W. Reynen, F. Petchey, K. Ditchfield, C. Byrne, D. Vannieuwenhuyse, M. Leopold and P. Veth 2018. Karnatukul (Serpent's Glen): A new chronology for the oldest site in Australia's Western Desert. *PLOS One*: 1–35. doi.org/10.1371/journal.pone.0202511

McDonald, J. and P. Veth 2012. The Archaeology of Memory: The recursive relationship of Martu rock art and place. *Anthropological Forum* 23(4): 367–386.

Macintosh, N.W.G. 1951. Archaeology of Tandandjal Cave, South-west Arnhem Land. *Oceania* 21(3): 178–204.

Macintosh, N.W.G. 1952. Paintings in Beswick Creek Cave, Northern Territory. *Oceania* 22(4): 256–273.

McNiven, I.J 2011. The Bradshaw debate: lessons learned from critiquing colonialist interpretations of Gwion Gwion rock paintings in the Kimberley, Western Australia. *Australian Archaeology* 72: 36–44.

Merlan, F. 1989. The interpretive framework of Wardaman rock art: A preliminary report. *Australian Aboriginal Studies* 1989 (2): 14–24. https://search.informit.org/doi/10.3316/informit.161233656312080

Moran, R. 2000. Prehistory painted in a new light. *Big Weekend: The Age Supplement*, 1 November 2000, p.5.

Morelli, G. 1892. Italian painters: critical studies of their works (transl. C. J. Foulkes). James Murray, London.

Morwood, M.J., G.L Walsh and A.L. Watchman 2010. AMS radiocarbon ages for beeswax and charcoal pigments in north Kimberley rock art. *Rock Art Research* 27(1): 3–8.

Motta, A.P. 2022. 'Animals into humans': multispecies encounters, relational ontologies, and social identity in Indigenous rock art from northeast Kimberley, Australia, during the Pleistocene. Unpublished PhD dissertation, University of Western Australia.

Motta, A.P., M. Porr and P. Veth 2020. Recursivity in Kimberley Rock Art Production, Western Australia, in C. Horn, G. Wollentz, G. Di Maida and A. Haug (eds), *Places of Memory: Spatialised Practices of Remembrance from Prehistory to Today*: 137–149. Oxford, Archaeopress.

Motta, A.P., P. Veth and Balanggarra Aboriginal Corporation 2021. Relational ontologies and performance: Identifying humans and nonhuman animals in the rock art from north-eastern Kimberley, Australia. *Journal of Anthropological Archaeology* 63: 101333. https://doi.org/10.1016/j.jaa.2021.101333

Mountford, C. P. 1937. Examples of Aboriginal art from Napier Broome Bay and Parry Harbour, North-western Australia. *Transactions of the Royal Society of South Australia* 61: 30-40.

Mountford, C.P. 1976. *Nomads of the Australian desert*. Adelaide: Rigby.

Mowaljarlai, D., and J. Malnic 1993. *Yorro Yorro: Spirit of the Kimberley*. Broome: Magabala Books.

Mulvaney, K. 2015. *Murujuga marni: Rock art of the macropod hunters and mollusc harvesters*. Centre for Rock Art Research and Management, Monograph 1. Crawley, University of Western Australia Publishing.

Neale, M. (ed.) 2017. *Songlines: Tracking the Seven Sisters*. Canberra: National Museum of Australia Press.

Nicholls, C.J. 2014. 'Dreamings' and place – Aboriginal monsters and their meanings. *The Conversation.* 30 April. https://theconversation.com/dreamings-and-place-aboriginal-monsters-and-their-meanings-25606

Norberg-Schulz, C. 1980. *Genius Loci: Towards a Phenomenology of Architecture*. New York: Rizzoli.

O'Connor, S., J. Balme, J. Fyfe, J. Oscar, M. Oscar, J. Davis, H. Malo, R. Nuggett and D. Surprise 2013. Marking resistance? Change and continuity in the recent rock art of the southern Kimberley, Australia. *Antiquity* 87(336): 539–554.

Oobagooma, J., K. Doohan, L. Umbagai and M. Porr 2016. Yooddoodoom: a narrative exploration of the camp and the sacred place, daily life, images, arranged stones and Lalai Beings. *Hunter Gatherer Research* 2(3): 345–374.

Perrig, A. 1991. Michelangelo's drawings: the science of attribution. Yale University Press, New Haven.

Petri, H. 1950. Kuràngara – new magic cults in North-west Australia. *Zeitschrift für Ethnologie* 75: 43–51. [Translated by M. Pawsey and edited by K. Akerman, Nov 2012.]

Pettitt, P., A.M. Castillejo, P. Arias, R. Ontañón Peredo, and R. Harrison 2014. New views on old hands: the context of stencils in El Castillo and La Garma caves (Cantabria, Spain). *Antiquity* 88 (2014): 47–63.

Pope, A. 1731. *An Epistle to the Right Honourable Richard Earl of Burlington: Occasion'd by his Publishing Palladio's Designs of the Baths, Arches, Theatres of Ancient Rome.* London: L. Gilliver: https://www.eighteenthcenturypoetry.org/works/o3689-w0010.shtml

Porr, M. 2010. Art and Rock-art of the Kimberley, Northwest Australia: Narratives, Interpretations and Imaginations. *Ethnographisch-Archäologische Zeitschrift* 51: 173–190.

Rainsbury, M.P. 2009. River and coast: regionality in Norther Kimberley rock art. Unpublished PhD dissertation, Durham University.

Ross, J., K. Westaway, M. Travers, M.J. Morwood, J. Hayward 2016. Into the past: a step towards a robust Kimberley rock art chronology. *PLoS ONE* 11(8): e0161726. doi: 10.1371/journal.pone.0161726.

Sale, K.M. 1995. Making the old brighter: Aboriginal re-marking of rock pictures, in G.K. Ward and L.A. Ward (eds), *Management of rock imagery*: 128–140. Occasional AURA Publication No. 9. Melbourne: Australian Rock Art Research Association.

Schoffeleers, J.M. (ed.) 1979. *Guardians of the Land: Essays on Central African Territorial Cults*. Gweru: Mambo Press.

Schulz, A.S. 1956. North-west Australian rock paintings. *Memoirs of the National Museum of Victoria* 20: 7–43.

Smith, B.W. 1997. *Zambia's Ancient Rock Art: The Paintings of Kasama*. Livingstone: National Heritage Conservation Commission.

Spencer, B. and F.J. Gillen 1904. *The Northern Tribes of Central Australia*. London: Macmillan.

Stanner, W.E.H. 2014. *On Aboriginal Religion*. Oceania Monograph 11. Sydney: University of Sydney Press.

Taçon, P.S.C. 2016. Rock art, cultural change, the media, and national heritage identity in the 21st Century, in L.M. Brady and P.S.C. Taçon (eds) *Relating to Rock Art in the Contemporary World*. Boulder: University of Colorado Press.

Taçon, P.S.C. and C. Chippindale 1998. An archaeology of rock-art through informed methods and formal methods, in P.S.C. Taçon and C. Chippindale (eds), *The Archaeology of Rock-art*: 1–10. Cambridge: Cambridge University Press.

Taçon, P.S.C., S.K. May, S.J. Fallon, M. Travers, D. Wesley and R. Lamilami 2010. A Minimum age for early depictions of southeast Asian praus in the rock art of Arnhem Land, Northern Territory. *Australian Archaeology* 71: 1–10.

Taçon, P.S.C.., S.K. May, J. Goldhahn, L. Taylor, L.M. Brady, A. Ressel, A. Jalandoni, D. Wesley and G. Maralngurra 2022. Extraordinary back-to-back human and animal figures in the art of Western Arnhem Land, Australia: one of the world's largest assemblages. *Cambridge Archaeological Journal* pp.1-14. https://doi.org/10.1017/S0959774322000129

Taylor, L. 2018. Bodies revealed: X-ray art in western Arnhem Land, in B. David and I.J. McNiven (eds), *The Oxford Handbook of the Archaeology and Anthropology of Rock Art*: 695–716. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190607357.013.7

Thorn, A. 2021. A model to assess insolation impact on painted rock surfaces, in J. Bridgland (ed.), *Transcending Boundaries: Integrated Approaches to Conservation. ICOM-CC 19th Triennial Conference Preprints, Beijing, 17–21 May 2021*. Paris: International Council of Museums.

Thorn A. and J.C. Dean 1995. Condition Surveys: An essential management strategy, in G.K. Ward and L.A. Ward (eds), *Management of Rock Art Imagery*: 116–123. Occasional AURA Publication No.9. Melbourne: Australian Rock Art Research Association.

Travers, M. and J. Ross 2016. Continuity and change in the anthropomorphic figures of Australia's northwest Kimberley. *Australian Archaeology* 82(2): 148-167.

Vecco, M. 2020. Genius loci as a meta-concept. *Journal of Cultural Heritage* 41: 225–231. https://doi.org/10.1016/j.culher.2019.07.001

Veth, P., C. Myers, P. Heaney, S. Ouzman 2018. Plants before farming: the deep history of plant-use and representation in the rock art of Australia's Kimberley region. *Quaternary International* 489: 26–45.

Walsh, G.L. 1979. Mutilated hands or signal stencils? A consideration of irregular hand stencils from Central Queensland. *Australian Archaeology* 9: 33–41.

Walsh, G.L. 1983. Composite stencil art: elemental or specialised. *Australian Aboriginal Studies* 2: 34–44.

Walsh, G.L. 1994 *Bradshaws: ancient rock paintings of north-western Australia*. Carouge-Geneva: Edition Limiteé.

Walsh, G.L. 1997. Wandjinas and recent rock art of the Kimberley, in K.F. Kenneally, M.R. Lewis, M. Donaldson and C. Clement (eds), *Aboriginal rock art of the Kimberley*: 53–64. Perth: Kimberley Society.

Walsh, G.L. 2000. *Bradshaw art of the Kimberley*. Brisbane: Takarakka Nowan Kas Publications.

Watchman, A.L., G.L. Walsh, M.J. Morwood and C. Tuniz 1997. AMS radiocarbon age estimates for early rock paintings in the Kimberley, N.W. Australia: preliminary results. *Rock Art Research* 14(1): 18–25.

Water and Environmental Regulation, Dept. WA 2017. Climate trends – Kimberley. Accessed online 09/06/21 at https://www.water.wa.gov.au/planning-for-the-future/allocation-plans/managing-water-in-a-changing-climate/climate-trends-kimberley.

Welch, D. 1990. The bichrome art period in the Kimberley, Australia. *Rock Art Research* 7(2): 110–124.

Welch, D. 1992. Bradshaw to Wandjina: the evolution of anthropomorphous depictions in the Kimberley area of north-west Australia. Paper presented at the Second AURA congress, Cairns.

Welch, D.M. 1993a. The early rock art of the Kimberley, Australia: developing a chronology, in J. Steinbring, A. Watchman, P. Faulstich, and P. S. C. Taçon (eds), *Time and space*: 13–21. Occasional AURA Publication 8. Melbourne: Australian Rock Art Research Association.

Welch, D. 1993b. Early 'naturalistic' human figures in the Kimberley, Australia. *Rock Art Research* 10(1): 24–37.

Welch, D. 1993c. Stylistic change in the Kimberley rock art, Australia, in M. Lorblanchet and P.G. Bahn (eds), *Rock art studies: the post stylistic era or: where do we go from here?*: 99–113. Oxbow Monograph 35, Oxbow Books, Oxford.

Welch, D. 2003. Plant motifs in Kimberley rock-art, Australia. *Before Farming* 2003/4(5): 387–398.

Welch, D. 2015. *Aboriginal paintings of Drysdale River National Park, Kimberley, Western Australia*. Coolalinga: David M. Welch.

Welch, D. 2016. *From Bradshaw to Wandjina: Aboriginal paintings of the Kimberley Region, Western Australia.* Coolalinga: David M. Welch.

Wilson, I. 2006. *Lost world of the Kimberley*. Crows Nest: Allen and Unwin.

Worms, E.A. 1940. Religiose vorstellungen und kultureiniger nordwest australischen stämme in fünfzig legenden. *Annali Lateranensi* 4: 213–282.

Worms, E.A. 1950. Djamar, the creator. *Anthropos* 45: 641–658.

Worms, E.A. 1952. Djamar and his relation to other culture heroes. *Anthropos* 47: 539–560.

Worms, E.A. 1955. Contemporary and prehistoric rock paintings in central and northern North Kimberley. *Anthropos* 50: 546–566.

Wright, B. 1985. The significance of hand motif variations in the stencilled art of the Australian Aborigines. *Rock Art Research* 2(1): 3–19.

Appendix 1
Art Panel A Motif List

Key:
Combination Form type abbreviations: L = Linear; D = dot; O = Outline; I = Infill; S = Solid. Dominant form given first; e.g. S + L = mostly solid with linear elements
Hand sizes (cm): mf = middle finger length, kn = knuckle width

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A1	1	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	64		
A1	2	scratching	unpatinated	O+I	anthropomorph	other	132		
A1	3	painting	dark red	S+L	anthropomorph	Gwion Dalal	57+		
A1	4	scratching	unpatinated	O+I	fragment	fragment			
A1	5	scratching	unpatinated	O+I	fragment	fragment			
A1	6	drawing	dark red	solid	non-figurative	band			
A1	7	painting	red	solid	non-figurative	arc	117		
A1	8	painting	red	solid	fauna	unknown			
A1	9	spray	red	stencil	object	boomerang pair	49		
A1	10	spray	dark red	stencil	hand	hand right		8.5	
A1	11	spray	red	stencil	hand	hand left		9	8.5
A1	12	painting	dark red	linear	anthropomorph	other	27		
A1	13	scratching	unpatinated	solid	anthropomorph	other	37+		
A1	14	scratching	unpatinated	out-line	hand	hand left	22	7.5	9
A1	15	spray	red	stencil	hand	hand unknown			
A1	16	painting	yellow	solid	anthropomorph	Gwion Ngunuru	51		
A1	17	scratching	unpatinated	out-line	hand	hand left	13	8	9
A1	18	spray	red	stencil	hand	hand left			
A1	19	scratching	unpatinated	linear	non-figurative	design apex			
A1	20	spray	dark red	stencil	hand	hand left AU variant			
A1	21	painting	red	O+I	non-figurative	grid			
A1	22	painting	red	O+I	fauna	snake	113		
A1	23	spray	dark red	stencil	hand	hand left AU variant		10	
A1	24	spray	dark red	stencil	hand	hand left AU variant		9.5	
A1	25	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	132		
A1	25a	pounding	unpatinated	solid	non-figurative	area			
A1	26	painting	red	O+L	fauna	macropod			
A1	186	scratching	unpatinated	linear	non-figurative	line set			
A2	27	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	116		
A2	27a	pounding	unpatinated	solid	non-figurative	area			
A2	28	spray	dark red	stencil	hand	hand left AU variant		9.5	
A2	29	spray	dark red	stencil	hand	hand unknown			
A2	30	painting	red	O+I+S	fauna	unknown	44		
A2	31	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	16		
A2	32	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	17		

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A2	33	spray	red	stencil	hand	hand unknown		9.5	10
A2	34	spray	red	stencil	hand	hand unknown		9.5	
A2	35	spray	red	stencil	hand	hand left			
A2	36	painting	red	linear	non-figurative	design apex			
A2	37	painting	red	linear	non-figurative	line			
A2	38	spray	red	stencil	hand	hand unknown			
A2	39	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	64		
A2	40	painting	yellow	O+I	anthropomorph	Gwion Ngunuru	128		
A2	41	painting	red	S+L	fragment	fragment			
A2	42	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	58		
A2	43	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	82		
A2	44	painting	red	linear	non-figurative	design simple	103		
A2	45	spray	red	stencil	hand	hand unknown			
A2	46	spray	red	stencil	hand	hand left		9.5	10
A2	47	spray	red	stencil	hand	hand unknown			
A2	48	spray	dark red	stencil	hand	hand left AU variant		9.5	
A2	49	painting	dark red	linear	non-figurative	line set	32		
A2	50	painting	red	S+L	flora	yam	36		
A2	51	spray	dark red	stencil	hand	hand left		9	8
A2	52	painting	red	linear	non-figurative	line set			
A2	53	painting	red	linear	non-figurative	line set			
A2	54	painting	red	linear	non-figurative	design apex			
A2	55	painting	red	linear	non-figurative	design apex			
A2	56	spray	red	stencil	hand	hand left			
A2	57	painting	red	linear	non-figurative	design apex			
A2	58	painting	red	linear	non-figurative	shape Y			
A2	59	painting	dark red	O+I	fragment	fragment			
A2	60	painting	red	linear	non-figurative	trident			
A2	61	painting	red	linear	non-figurative	design simple			
A2	62	painting	dark red	linear	non-figurative	arc			
A2	63	spray	dark red	stencil	hand	hand right		9	8
A2	64	painting	dark red	linear	non-figurative	bar row			
A2	65	painting	red	linear	non-figurative	line set			
A2	66	spray	yellow	stencil	hand	hand left 1-2-1 Variant			
A2	67	spray	yellow	stencil	hand	hand unknown			
A2	68	painting	dark red	out-line	anthropomorph	other			
A2	69	painting	yellow	S+L	anthropomorph	other			
A2	70	spray	red	stencil	hand	hand unknown			
A2	71	spray	red	stencil	hand	hand left		6	
A2	72	spray	red	stencil	hand	hand unknown			
A2	73	spray	red	stencil	hand	hand left		5.5	5.5
A2	74	painting	yellow	S+L	anthropomorph	Gwion Ngunuru	37		
A2	75	painting	yellow	S+L	anthropomorph	Gwion Ngunuru	78		
A2	76	spray	dark red	stencil	hand	hand right		9	9
A2	77	painting	dark red	S+L	anthropomorph	Gwion Ngunuru			
A2	78	painting	red	O+I	anthropomorph	other			
A2	79	painting	red	S+L	anthropomorph	Gwion Ngunuru	37		
A2	80	painting	red	S+L	anthropomorph	Gwion Ngunuru			

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A2	81	spray	red	stencil	hand	hand left			
A2	82	painting	red	frag-ment	fragment	fragment			
A2	83	painting	red	O+I	fragment	fragment			
A2	84	spray	dark red	stencil	hand	hand left AU variant		9	
A2	85	painting	red	linear	non-figurative	fragment			
A2	86	spray	dark red	stencil	hand	hand-? AU variant			
A2	87	spray	red	stencil	hand	hand left			
A2	88	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	91		
A2	89	painting	dark red	S+L	anthropomorph	Gwion Ngunuru	36		
A2	90	spray	dark red	stencil	hand	hand left AU variant		9	
A2	91	painting	yellow	linear	fragment	fragment			
A2	92	drawing	dark red	linear	non-figurative	line pair	10		
A2	93	drawing	dark red	linear	non-figurative	design apex	15		
A2	94	spray	yellow	stencil	hand	hand right			
A2	95	painting	dark red	S+L	anthropomorph	other	19		
A2	96	painting	dark red	S+L	anthropomorph	other	20		
A2	97	painting	dark red	linear	non-figurative	design simple	45		
A2	98	painting	dark red	linear	non-figurative	bar row	18		
A3	99	spray	dark red	stencil	hand	hand left AU variant		9	
A3	100	painting	red	linear	non-figurative	line			
A3	101	spray	red	stencil	hand	hand unknown		7	
A3	102	spray	red	stencil	hand	hand left		8	9
A3	103	spray	red	stencil	hand	hand unknown			
A3	104	spray	mulberry	stencil	object	boomerang	40		
A3	105	painting	mulberry	solid	fauna	macropod	116		
A3	106	spray	dark red	stencil	hand	hand unknown			
A3	107	spray	dark red	stencil	hand	hand-? AU variant		9	
A3	108	spray	red	stencil	object	boomerang pair(?)			
A3	109	spray	red	stencil	hand	hand right			
A3	110	spray	red	stencil	hand	hand right			
A3	111	spray	red	stencil	hand	hand right			
A3	112	spray	red	stencil	hand	hand left			
A3	113	painting	dark red	linear	non-figurative	fragment			
A3	114	painting	dark red	frag-ment	fragment	fragment			
A3	115	spray	mulberry	stencil	object	boomerang	44		
A3	116	spray	red	stencil	hand	hand left		8	
A3	117	spray	white	stencil	hand	hand unknown			8
A3	118	spray	white	stencil	hand	hand unknown			9
A3	119	painting	dark red	linear	fauna	other			
A3	120	painting	dark red	linear	fauna	snake	272		
A3	121	spray	red	stencil	hand	hand unknown			
A3	122	painting	dark red	frag-ment	fragment	fragment			
A3	123	painting	dark red	linear	anthropomorph	other	32		

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A3	124	painting	dark red	linear	non-figurative	bar row			
A3	125	painting	dark red	linear	non-figurative	bar set	7		
A3	126	painting	dark red	linear	anthropomorph	other	13		
A3	127	painting	mulberry	S+L	anthropomorph	Gwion Ngunuru	66		
A3	127a	pounding	unpatinated	solid	non-fig	area			
A3	128	painting	mulberry	S+L	anthropomorph	Gwion Ngunuru	62		
A3	128a	pounding	unpatinated	solid	non-fig	area			
A3	129	painting	mulberry	S+L	anthropomorph	Gwion Ngunuru	36		
A3	130	painting	dark red	linear	fauna	other	12		
A3	131	painting	dark red	S+L	anthropomorph	other	18		
A3	132	painting	mulberry	S+L	anthropomorph	Gwion Yowna	49		
A3	133	painting	mulberry	S+L	anthropomorph	Gwion Yowna			
A3	134	painting	mulberry	S+L	anthropomorph	Gwion Yowna	56		
A3	135	painting	mulberry	linear	fragment	fragment			
A3	136	painting	mulberry	S+L	anthropomorph	Gwion Yowna	50		
A3	136a	pounding	unpatinated	solid	non-figurative	area			
A3	137	painting	red	linear	non-figurative	design element			
A3	138	painting	white+red	O+I	anthropomorph	Wanjina	106		
A3	138a	painting	red	out-line	object	Wanjina head-dress			
A3	139	painting	red	linear	fragment	fragment			
A3	140	painting	orange	linear	fragment	fragment			
A3	141	painting	orange	O+I	fragment	fragment			
A3	142	painting	white	out-line	fragment	fragment			
A3	143	painting	red	linear	non-figurative	design apex			
A3	144	painting	white	O+I	anthropomorph	fragment (leg)	*c.* 60		
A3	145	drawing	red	linear	non-figurative	design simple	24		
A3	146	drawing	dark red	dot	non-figurative	arc			
A3	147	drawing	dark red	linear	non-figurative	design apex	11		
A3	148	drawing	dark red	linear	non-figurative	bar set			
A3	149	drawing	dark red	linear	non-figurative	design apex	8		
A3	150	drawing	red	linear	non-figurative	line			
A3	151	drawing	mulberry	linear	non-figurative	line			
A3	152	drawing	mulberry	O+I	non-figurative	design element	23		
A3	153	drawing	mulberry	O+I	non-figurative	design element	39		
A3	154	drawing	mulberry	O+I	non-figurative	design element	22		
A3	155	painting	yellow+white	solid	fauna	unknown	*c.* 120		
A3	156	scratching	unpatinated	S+L	object	other	28		
A3	157	painting	red	solid	object	boomerang	44		
A4	158	spray	red	stencil	hand	hand left		6.5	
A4	159	spray	red	stencil	hand	hand left		7.5	
A4	160	spray	red	stencil	hand	hand right			
A4	161	painting	mulberry	O+I	fauna	other	96		
A4	161a	pounding	unpatinated	solid	non-figurative	area			
A4	162	painting	mulberry	O+I	non-figurative	oval barred	19		
A4	163	spray	mulberry	stencil	hand	hand left		7.5	
A4	164	spray	red	stencil	hand	hand right		9	
A4	165	spray	mulberry	stencil	object	boomerang	50		
A4	166	spray	mulberry	stencil	hand	hand left		9	
A4	167	spray	red	stencil	hand	hand unknown	10		

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A4	168	spray	mulberry	stencil	hand	hand unknown			
A4	169	spray	red	stencil	hand	hand unknown			
A4	170	spray	red	frag-ment	fragment	fragment			
A4	171	spray	red	stencil	hand	hand left			
A4	172	spray	red	stencil	hand	hand unknown			
A4	173	spray	dark red	stencil	hand	hand left			
A4	174	spray	red	stencil	hand	hand unknown			
A4	175	spray	red	stencil	hand	hand left			
A4	176	spray	red	stencil	hand	hand left			
A4	177	painting	dark red	O+I	fauna	macropod	226		
A4	177a	painting	mulberry	O+I	fauna	macropod repaint			
A4	177b	drawing	dark red	linear	non-figurative	line set infill			
A4	177c	pounding	unpatinated	solid	non-figurative	area			
A4	177d	painting	orange-red	O+I	fauna	macropod	226		
A4	178	painting	dark red	linear	non-figurative	bar			
A4	179	painting	dark red	linear	non-figurative	bar			
A4	180	spray	red	stencil	hand	hand unknown			
A4	181	spray	red	stencil	hand	hand right		7	
A4	182	spray	red	stencil	hand	hand right 1U variant		8.5	
A4	183	painting	dark red	O+I	non-figurative	oval barred	16		
A4	184	painting	mulberry	linear	non-figurative	bar row pair			
A4	185	spray	red	stencil	hand	hand right		9	
A4	186	scratching	unpatinated	linear	non-figurative	line set			
A4	187	painting	red	S+L	anthropomorph	Gwion Ngunuru	45		
A4	188	painting	mulberry	S+L	anthropomorph	Gwion Yowna	46		
A4	188a	pounding	unpatinated	solid	non-figurative	area			
A4	189	painting	mulberry	S+L	anthropomorph	Gwion Yowna	41		
A4	189a	pounding	unpatinated	solid	non-figurative	area			
A4	190	painting	mulberry	S+L	anthropomorph	Gwion Yowna	57		
A4	190a	pound/abr	unpatinated	solid	non-figurative	area			
A4	191	painting	mulberry	S+L	anthropomorph	Gwion Yowna	32		
A4	191a	pound/abr	unpatinated	solid	non-figurative	area			
A4	192	painting	mulberry	linear	anthropomorph	Gwion Dalal	30		
A4	193	painting	mulberry	solid	fragment	fragment			
A4	194	painting	red	linear	non-figurative	line set			
A4	195	painting	dark red	linear	non-figurative	line set			
A4	196	painting	dark red	linear	non-figurative	line set			
A4	197	painting	dark red	O+L	anthropomorph	foot	14		
A4	198	painting	dark red	linear	non-figurative	bar pair			
A4	199	painting	dark red	linear	fragment	fragment			
A4	200	painting	dark red	linear	anthropomorph	other + imple-ments	19		
A4	201	painting	dark red	linear	fauna	flying-fox on branch	202		
A4	201a	pounding	unpatinated	solid	non-figurative	area			
A4	201b	painting	orange-red	linear	fauna	flying-fox ears			
A4	201c	painting	red	O+I+L	fauna	flying-fox	17		
A4	202	painting	dark red	linear	non-figurative	design element			

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A4	203	painting	dark red	O+I	non-figurative	design simple	21		
A4	204	painting	dark red	O+I	non-figurative	design simple	24		
A4	205	painting	dark red	O+I	non-figurative	design simple	36		
A4	206	painting	dark red	O+I	object	boomerang	35		
A4/A5	207	painting	red	out-line	non-figurative	line pair	386		
A4/A5	207a	painting	white	dot	non-figurative	dot row			
A4	208	painting	red	L+O+I	anthropomorph	other	18		
A4	209	painting	red	linear	non-figurative	line set			
A4	210	painting	red	linear	fauna	track bird			
A4	211	painting	red	linear	non-figurative	line set			
A4	212	painting	red	frag-ment	fragment	fragment			
A4	213	painting	red	O+I	non-figurative	fragment			
A4	214	painting	red	frag-ment	fragment	fragment			
A4	215	painting	red	O+I	non-figurative	fragment			
A4	216	painting	red	linear	non-figurative	line set			
A4	217	painting	white	linear	non-figurative	line set			
A4	218	painting	red	linear	non-figurative	line			
A4	219	scratching	unpatinated	linear	non-figurative	fragment			
A4	220	painting	off-white	linear	non-figurative	line	16		
A4	221	painting	off-white	linear	non-figurative	line	15		
A4	222	painting	white	O+I	non-figurative	design complex	24		
A4	223	drawing	dark red	linear	non-figurative	line set	27		
A4	224	painting	off-white	S+L	anthropomorph	other			
A4	225	painting	off-white	frag-ment	fragment	fragment			
A4	226	painting	red	O+I	non-figurative	design complex	48		
A4	227	painting	red	linear	fragment	fragment			
A4	228	scratching	unpatinated	linear	non-figurative	line			
A4	229	spray	white	stencil	hand	hand unknown			
A4	230	spray	white	stencil	hand	hand unknown			
A4	231	painting	white	solid	non-figurative	disc			
A4	232	painting	white	linear	anthropomorph	other	19		
A4	233	painting	orange-red	solid	non-figurative	ovoid	32		
A4	234	painting	orange-red	solid	non-figurative	ovoid	35		
A4	235	drawing	yellow	O+I	non-figurative	design simple			
A4	236	drawing	dark red	O+I	non-figurative	design simple	19		
A4	237	drawing	dark red	out-line	non-figurative	oval	8		
A4	238	smear	dark red	linear	non-figurative	smear			
A4	239	painting	red	linear	non-figurative	design element			
A4	240	smear	yellow	solid	non-figurative	area			
A4	241	scratching	unpatinated	linear	non-figurative	line set			
A4	242	painting	red	linear	fauna	track bird			
A4	243	painting	orange-red	frag-ment	fragment	fragment			
A4	244	painting	orange-red	dot	non-figurative	dot			
A4	245	painting	orange-red	linear	non-figurative	bar			
A4	246	painting	red	O+I	non-figurative	design simple	14		

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A4	247	painting	orange-red	dot	non-figurative	dot			
A4	248	painting	orange-red	fragment	fragment	fragment			
A4	249	painting	red	linear	non-figurative	line			
A4	250	painting	red	linear	non-figurative	line			
A4	251	spray	red	stencil	hand	hand left			
A4	252	pounding	unpatinated	linear	non-figurative	area			
A4	253	drawing	orange-red	linear	non-figurative	line			
A4	254	painting	red	linear	non-figurative	bar pair			
A4	255	painting	off-white	linear	non-figurative	bar pair			
A4	256	painting	dark red	O+I	object	boomerang	30		
A5	257	spray	red	solid	hand	hand left		9	
A5	258	spray	red	solid	hand	hand unknown			
A5	259	spray	red	stencil	hand	hand right			
A5	260	spray	dark red	solid	hand	hand right		9	
A5	261	spray	red	stencil	hand	hand left			
A5	262	spray	red	stencil	hand	hand left		7	
A5	263	spray	red	stencil	hand	hand right		8	
A5	264	spray	red	stencil	hand	hand left		9	
A5	265	spray	dark red	stencil	hand	hand right		9	
A5	266	spray	red	stencil	hand	hand left			
A5	267	spray	red	stencil	hand	hand unknown			
A5	268	spray	red	stencil	hand	hand unknown		6	
A5	269	spray	dark red	stencil	hand	hand right		8	
A5	270	painting	red	O+I	fragment	fragment			
A5	271	painting	red	S+O+I	fauna	fish(?)			
A5	272	spray	red	stencil	hand	hand unknown			
A5	273	spray	red	stencil	hand	hand unknown			
A5	274	spray	red	stencil	hand	hand unknown			
A5	275	spray	red	stencil	hand	hand right			
A5	276	spray	red	stencil	hand	hand right			
A5	277	spray	red	stencil	hand	hand unknown			
A5	278	spray	red	stencil	hand	hand left			
A5	279	spray	red	stencil	hand	hand unknown			
A5	280	spray	red	stencil	hand	hand right		7	
A5	281	painting	red	O+I	non-figurative	design apex			
A5	282	painting	red	solid	non-figurative	disc			
A5	283	painting	red	fragment	fragment	fragment			
A5	284	painting	red	fragment	fragment	fragment			
A5	285	painting	red	fragment	fragment	fragment			
A5	286	painting	red	fragment	fragment	fragment			
A5	287	painting	red	fragment	fragment	fragment			
A5	288	painting	red	fragment	fragment	fragment			
A5	289	painting	red	fragment	fragment	fragment			
A5	290	painting	red	linear	non-figurative	design element			

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A5	291	painting	red	linear	non-figurative	line			
A5	292	painting	red	linear	fragment	fragment			
A5	293	painting	red	out-line	non-figurative	design simple			
A5	294	painting	red	frag-ment	fragment	fragment			
A5	295	painting	red	solid	fragment	fragment			
A5	296	painting	red	solid	fauna	macropod	36		
A5	297	painting	red	solid	fauna	track macropod			
A5	298	painting	red	O+I	fauna	other			
A5	299	painting	red	O+I	non-figurative	design complex			
A5	300	painting	red	O+I	non-figurative	design complex			
A5	301	painting	red	O+I	non-figurative	design apex			
A5	302	painting	red	frag-ment	fragment	fragment			
A5	303	painting	red	O+I	non-figurative	design apex			
A5	304	painting	red	frag-ment	fragment	fragment			
A5	305	spray	white	stencil	hand	hand left			
A5	306	spray	white	stencil	hand	hand unknown			
A5	307	spray	white	stencil	hand	hand unknown			
A5	308	spray	white	stencil	hand	hand right			
A5	309	spray	white	stencil	hand	hand right			
A5	310	painting	white	solid	non-figurative	arc pair			
A5	311	painting	white	O+I	non-figurative	design complex			
A5	312	painting	white	O+I	non-figurative	design complex			
A5	313	painting	white	linear	anthropomorph	anthro squat-ting			
A5	314	painting	mulberry	solid	flora	grass seed-head			
A5	315	painting	dark red	O+I	object	boomerang			
A5	316	painting	dark red	O+I	object	boomerang	27		
A5	317	painting	dark red	linear	non-figurative	arc pair			
A5	318	painting	dark red	O+I	fauna	other	97		
A5	318a	pound/scratch	unpatinated	dot	non-figurative	area			
A5	319	painting	dark red	linear	non-figurative	arc pair			
A5	320	painting	dark red	linear	non-figurative	bar row set			
A5	321	painting	dark red	linear	non-figurative	bar row			
A5	322	painting	red	linear	fragment	fragment			
A5	323	painting	red	O+I	non-figurative	design complex			
A5	324	painting	red	O+I	non-figurative	design simple			
A5	325	painting	red	frag-ment	fragment	fragment			
A5	326	painting	red	solid	non-figurative	fragment			
A5	327	painting	red	solid	non-figurative	fragment			
A5	328	printing	mulberry	solid	flora	grass seed-heads			
A5	329	printing	mulberry	solid	flora	grass seed-heads			
A5	330	printing	mulberry	solid	flora	grass seed-heads			
A5	331	printing	mulberry	solid	flora	grass seed-heads			

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A5	332	printing	mulberry	solid	flora	grass seed-heads			
A5	333	printing	mulberry	solid	flora	grass seed-heads			
A5	334	printing	mulberry	solid	flora	grass seed-heads			
A5	335	printing	mulberry	solid	flora	grass seed-heads			
A5	336	printing	mulberry	solid	flora	grass seed-heads			
A5	337	printing	mulberry	solid	flora	grass seed-heads			
A5	338	flicking	mulberry	linear	non-figurative	band			
A5	339	flicking	mulberry	linear	non-figurative	band			
A5	340	flicking	mulberry	linear	non-figurative	band			
A5	341	flicking	mulberry	linear	non-figurative	band			
A5	342	flicking	mulberry	linear	non-figurative	band			
A5	343	flicking	mulberry	linear	non-figurative	band			
A5	344	flicking	mulberry	linear	non-figurative	band			
A5	345	flicking	mulberry	linear	non-figurative	band			
A5	346	flicking	mulberry	linear	non-figurative	band			
A5	347	flicking	mulberry	linear	non-figurative	band			
A5	348	flicking	mulberry	O+I	non-figurative	design element			
A5	349	painting	mulberry	S+L	anthropomorph	Gwion Yowna	42		
A5	349a	pound/scratch	unpatinated	dot	non-figurative	area			
A5	350	painting	mulberry	S+L	anthropomorph	Gwion Yowna	37		
A5	350a	pound/scratch	unpatinated	dot	non-figurative	area			
A5	351	painting	mulberry	linear	non-figurative	bar			
A5	352	painting	mulberry	S+L	anthropomorph	Gwion Yowna	77		
A5	352a	pounding	unpatinated	dot	non-figurative	area			
A5	353	painting	red	S+L	anthropomorph	Gwion Ngunuru	54		
A5	353a	painting	red	O+I	anthropomorph	Gwion Ngunuru			
A5	354	painting	red	solid	object	other	16		
A5	355	painting	red	S+L	anthropomorph	Gwion Ngunuru	74		
A5	355a	painting	dark red	O+I	anthropomorph	Gwion Ngunuru	74		
A5	355b	pounding	unpatinated	dot	non-figurative	area			
A5	356	painting	dark red	S+O+I	fauna	bandicoot	8		
A5	357	painting	dark red	linear	non-figurative	bar			
A5	358	spray	yellow	stencil	hand	hand left		10	
A5	359	spray	yellow	stencil	hand	hand left		10	
A5	360	spray	yellow	stencil	hand	hand left			
A5	361	spray	yellow	stencil	hand	hand right			
A5	362	spray	yellow	stencil	hand	hand left			
A5	363	spray	yellow	stencil	hand	hand left		10	
A5	364	spray	yellow	stencil	hand	hand left		10	
A5	365	painting	yellow	S+L	anthropomorph	Gwion (part)	9		
A5	366	spray	yellow	stencil	hand	hand left			
A5	367	spray	yellow	stencil	hand	hand left			
A5	368	spray	yellow	stencil	hand	hand right		7	
A5	369	spray	yellow	stencil	hand	hand unknown			
A5	370	spray	yellow	stencil	hand	hand left		5	

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A5	371	spray	yellow	stencil	hand	hand unknown		5	
A5	372	spray	yellow	stencil	hand	hand right 2-2 Variant			
A5	373	spray	yellow	stencil	hand	hand left		5	
A5	374	spray	yellow	stencil	hand	hand right			
A5	375	spray	yellow	stencil	hand	hand unknown			
A5	376	painting	red	L+D	flora	fruiting branch			
A5	377	printing	red	print	flora	grass seed-head			
A5	378	printing	red	print	flora	grass seed-head			
A5	379	printing	red	print	flora	grass seed-head			
A5	380	printing	red	print	flora	grass seed-head			
A5	381	printing	red	print	flora	grass seed-head			
A5	382	printing	red	print	flora	grass seed-head			
A5	383	painting	red	O+I	non-figurative	design apex			
A5	384	painting	red	solid	anthropomorph	anthro	113		
A5	385	drawing	red	O+I	fauna	catfish	39		
A5	386	drawing	red	frag-ment	fragment	fragment			
A5	387	drawing	red	O+I	fauna	longtom	62		
A5	388	drawing	red	solid	non-figurative	area			
A5	389	drawing	red	solid	non-figurative	area			
A5	390	drawing	red	O+I	anthropomorph	anthro	76		
A5	391	drawing	red	O+I	object	other	36		
A5	392	painting	red	linear	fragment	fragment			
A5	393	painting	red	out-line	fragment	fragment			
A5	394	painting	red	linear	flora	vine(?)			
A5	395	painting	red	S+L	object	other	14		
A5	396	painting	red	linear	object	other			
A5	397	pounding	unpatinated	dot	non-figurative	area			
A5	398	pounding	unpatinated	dot	non-figurative	area			
A5	399	pounding	unpatinated	dot	non-figurative	area			
A5	400	pounding	unpatinated	dot	non-figurative	area			
A5	401	pounding	unpatinated	dot	non-figurative	area			
A5	402	pounding	unpatinated	dot	non-figurative	area			
A5	403	abraded	unpatinated	solid	non-figurative	area	34		
A5	404	abraded	unpatinated	solid	non-figurative	area	83		
A5	405	abraded	unpatinated	solid	non-figurative	area	68		
A5	406	painting	mulberry	O+I	fauna	macropod head			
A5	406a	painting	orange-red	O+I	fauna	macropod head			
A5	406b	painting	orange-red	solid	non-figurative	smear			
A5	406c	painting	orange-red	O+I	fauna	macropod head			
A5	407	spray	white	stencil	object	boomerang pair			
A5	408	painting	red	S+O+I	anthropomorph	anthro	89		
A5	408a	painting	dark red	linear	anthropomorph	anthro			
A5	408b	painting	purple	solid	non-figurative	smear			
A5	409	painting	dark red	out-line	non-figurative	oval			
A5	410	painting	dark red	O+l	non-figurative	design element			
A5	411	painting	dark red	S+L	fauna	waterbird	62		

Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
A5	411a	painting	white	O+I	non-figurative	design apex			
A5	412	painting	orange-red	S+L	flora	yam			
A5	413	smear	orange-red	solid	non-figurative	smear			
A5	414	smear	orange-red	solid	non-figurative	smear			
A5	415	painting	orange-red	linear	non-figurative	paint dribbles			
A5	416	painting	orange-red	linear	non-figurative	bar set	28		
A5	417	painting	orange-red	linear	non-figurative	bar			
A5	418	painting	dark red	S+L	non-figurative	design element	14		
A5	419	spray	red	stencil	hand	hand unknown			
A5	420	spray	yellow	stencil	hand	hand right			
A5	421	painting	red	S+I	non-figurative	design element			
A5	422	painting	red	solid	non-figurative	disc			
A5	423	spray	white	stencil	hand	hand left			

Appendix 2
Art Panels B–L Motif List

Key: As for Appendix 1

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
B1	423	painting	red	fragment	fragment	fragment			
B1	424	print	orange-red	solid	flora	grass stalks			
B1	425	spray	red	stencil	hand	hand unknown		6	
B1	426	spray	white	stencil	hand	hand left		6	4
B1	427	print	orange-red	solid	flora	grass stalks			
B1	428	print	orange-red	solid	flora	grass stalks			
B1	429	print	orange-red	solid	flora	grass stalks			
B1	430	print	orange-red	solid	flora	grass stalks			
B1	431	print	orange-red	solid	flora	grass stalks			
B1	432	print	orange-red	solid	flora	grass stalks			
B1	433	print	orange-red	solid	flora	grass stalks			
B1	434	print	orange-red	solid	flora	grass stalks			
B1	435	print	orange-red	solid	flora	grass stalks			
B1	436	print	orange-red	solid	flora	grass stalks			
B1	437	print	orange-red	solid	flora	grass stalks			
B1	438	print	orange-red	solid	flora	grass stalks			
B1	439	print	orange-red	solid	flora	grass stalks			
B1	440	painting	dark red	linear	non-figurative	bar row pair	31		
B2	441	spray	red	stencil	hand	hand left		7	8.5
B2	442	print	orange-red	solid	flora	grass stalks			
B2	443	print	orange-red	solid	flora	grass stalks			
B2	444	print	orange-red	solid	flora	grass stalks			
B2	445	print	orange-red	solid	flora	grass stalks			
B2	446	print	orange-red	solid	flora	grass stalks			
B2	447	print	orange-red	solid	flora	grass stalks			
B2	448	print	orange-red	solid	flora	grass stalks			
B2	449	print	orange-red	solid	flora	grass stalks			
B2	450	print	orange-red	solid	flora	grass stalks			
B2	451	print	orange-red	solid	flora	grass stalks			
B2	452	print	orange-red	solid	flora	grass stalks			
B2	453	print	orange-red	solid	flora	grass stalks			
B2	454	print	orange-red	solid	object	string skein	18		
B2	455	print	orange-red	solid	object	string skein	26		
B2	456	print	orange-red	solid	object	string skein	13		
B2	457	print	orange-red	solid	object	string skein	32		
B2	458	print	orange-red	solid	object	string skein	21		
B2	459	print	orange-red	solid	object	string skein	24		
B2	460	print	orange-red	solid	object	string skein	15		
B3	461	spray	red	stencil	hand	hand unknown			
B3	462	spray	orange-red	stencil	hand	hand left			8.5
B3	463	spray	orange-red	stencil	hand	hand unknown			
B3	464	painting	dark red	linear	non-figurative	line set	21		
B3	465	painting	dark red	linear	non-figurative	bar row	50		
B3	466	painting	dark red	solid	non-figurative	smear	7		

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
B3	467	painting	orange-red	linear	non-figurative	design simple	26		
B3	468	print	orange-red	solid	flora	grass stalks			
B3	469	print	orange-red	solid	flora	grass stalks			
B3	470	print	orange-red	solid	flora	grass stalks			
B3	471	print	orange-red	solid	flora	grass stalks			
B3	472	print	orange-red	solid	flora	grass stalks			
B3	473	print	orange-red	solid	flora	grass stalks			
B3	474	print	orange-red	solid	flora	grass stalks			
B3	475	print	orange-red	solid	flora	grass stalks			
B3	476	print	orange-red	solid	flora	grass stalks			
B3	477	painting	white	O+I	fauna	bird	63		
C	478	painting	dark red	linear	non-figurative	bar row pair	58		
C	479	painting	dark red	linear	non-figurative	bar row	34		
C	480	painting	dark red	linear	non-figurative	bar row	69		
C	481	painting	red	S+L	anthropo-morph	Gwion Ngunuru	15		
C	482	painting	red	S+L	anthropo-morph	Gwion Ngunuru	20		
C	483	painting	red	S+L	anthropo-morph	Gwion Ngunuru	24		
C	484	painting	red	S+L	anthropo-morph	Gwion Ngunuru	24		
D1	485	painting	white	linear	non-figurative	bar	8		
D1	486	battering	unpatinat-ed	linear	non-figurative	band	12		
D1	487	battering	unpatinat-ed	solid	non-figurative	area	74		
D1	488	battering	unpatinat-ed	solid	non-figurative	area	25		
D1	489	drawing	dark red	linear	non-figurative	line set	11		
D2	490	spray	red	stencil	hand	hand unknown			
D2	491	spray	red	stencil	hand	hand unknown			
D2	492	painting	red	fragment	hand	hand unknown			
D2	493	painting	red	stencil	non-figurative	line	13		
D2	494	painting	brown	linear	anthropo-morph	Gwion Ngunuru part	30		
D2	495	spray	red	stencil	hand	hand left variant		6.5	
D2	496	spray	red	stencil	hand	hand left			10
D3	497	spray	red	stencil	hand	hand left			5.5
D3	498	spray	red	stencil	hand	hand unknown			
D3	499	painting	red	linear	non-figurative	bar set pair	28		
D3	500	painting	red	linear	fauna	track bird	10		
D3	501	painting	dark red	S+L	anthropo-morph	Gwion Yowna	30		
D3	501a	battering	unpatinat-ed	solid	non-figurative	area	30		
D3	502	painting	dark red	S+L	anthropo-morph	Gwion Yowna	45		
D3	502a	battering	unpatinat-ed	solid	non-figurative	area	45		
D3	503	painting	dark red	S+L	anthropo-morph	Gwion Yowna			
D3	503a	battering	unpatinat-ed	solid	non-figurative	area	33		

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
D3	504	painting	dark red	S+L	anthropo-morph	Gwion Yowna			
D3	504a	battering	unpatinat-ed	solid	non-figurative	area	37		
D3	505	painting	dark red	S+L	anthropo-morph	Gwion Yowna	26		
D3	505a	battering	unpatinat-ed	solid	non-figurative	area	41		
D3	506	painting	dark red	S+L	anthropo-morph	Gwion Yowna	22		
D3	506a	battering	unpatinat-ed	solid	non-figurative	area	23		
E	507	spray	red	stencil	hand	hand right		6.5	7.5
E	508	drawing	red	linear	non-figurative	design simple	22		
F	509	spray	red	stencil	hand	hand unknown		5	
F	510	spray	red	stencil	hand	hand right		7	
F	511	painting	red	solid	non-figurative	smear	33		
F	512	spray	red	stencil	object	boomerang	45		
G	513	painting	red	fragment	fragment	fragment			
G	514	spray	red	stencil	hand	hand right		3.5	5
G	515	painting	yellow	S+L	anthropo-morph	Gwion x			
G	515a	painting	red	S+L	anthropo-morph	Gwion Ngunuru	37		
G	515b	painting	dark red	L+O+I	non-figurative	decoration	32		
G	516	painting	red	linear	fragment	fragment			
G	517	painting	red	linear	non-figurative	design apex	7		
G	518	painting	red	linear	non-figurative	line	4		
G	519	painting	red	solid	anthropo-morph	anthropomorph			
G	520	painting	red	L+O+I	anthropo-morph	anthropomorph	30		
H	521	painting	red	fragment	fragment	fragment			
H	522	painting	red	linear	fragment	fragment			
H	523	painting	red	fragment	fragment	fragment			
H	524	painting	red	fragment	fragment	fragment			
H	525	painting	red	fragment	fragment	fragment			
H	526	painting	dark red	S+L	anthropo-morph	Gwion Yowna	40		
H	526a	painting	mulberry	S+L	anthropo-morph	Gwion Yowna repaint			
H	527	painting	dark red	fragment	fragment	fragment			
H	528	painting	mulberry	O+I	non-figurative	ovoid	12		
H	529	painting	mulberry	fragment	fragment	fragment			
H	530	painting	red	fragment	fragment	fragment			
H	531	painting	red	S+L	anthropo-morph	anthropomorph			
H	532	painting	red	S+L	anthropo-morph	anthropomorph	25		
H	533	painting	red	S+L	anthropo-morph	anthropomorph			
H	534	painting	red	S+L	anthropo-morph	anthropomorph			
H	535	painting	red	linear	non-figurative	line	3		
H	536	painting	red	fragment	fragment	fragment			

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
H	537	painting	red	S+L	anthropo-morph	anthropomorph			
H	538	painting	red	fragment	fragment	fragment			
H	539	painting	red	S+L+O+I	anthropo-morph	anthropomorph	9		
H	540	painting	red	fragment	fragment	fragment			
H	541	painting	red	solid	fauna	macropod	12		
H	542	painting	red	solid	fauna	macropod	17		
H	543	painting	red	linear	non-figurative	design simple	8		
H	544	painting	orange-red	linear	flora	plant			
H	545	painting	orange-red	linear	flora	plant			
H	546	painting	orange-red	linear	flora	plant			
H	547	painting	orange-red	linear	flora	plant	17		
H	548	painting	orange-red	linear	flora	plant			
H	549	painting	orange-red	linear	flora	plant			
H	550	painting	orange-red	linear	flora	plant			
H	551	painting	orange-red	linear	flora	plant			
H	552	painting	orange-red	linear	fragment	fragment			
H	553	flicking	dark red	dot	non-figurative	area	20		
H	554	flicking	dark red	linear	non-figurative	line	19		
H	555	flicking	dark red	dot	non-figurative	area	16		
J	556	spray	red	stencil	hand	hand unknown		5	
J	557	painting	red	solid	anthropo-morph	anthropomorph			
J	558	painting	dark red	fragment	fragment	fragment			
J	559	painting	red	fragment	fragment	fragment			
J	560	painting	dark red	fragment	fragment	fragment			
J	561	painting	dark red	fragment	fragment	fragment			
J	562	painting	red	fragment	fragment	fragment			
J	563	painting	red	fragment	fragment	fragment			
J	564	painting	red	fragment	fragment	fragment			
J	565	spray	red	stencil	hand	hand unknown			
J	566	painting	red	fragment	fragment	fragment			
J	567	painting	red	S+L	anthropo-morph	anthropomorph			
J	568	painting	red	fragment	fragment	fragment			
J	569	painting	mulberry	S+L	object	object	16		
J	570	painting	mulberry	S+L	anthropo-morph	Gwion Ngunuru	38		
J	571	painting	mulberry	S+L	non-figurative	Y-shape	11		
J	572	painting	mulberry	S+L	anthropo-morph	Gwion Yowna			
J	573	painting	mulberry	S+L	anthropo-morph	Gwion part	17		
J	574	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	43		
J	574a	painting	dark red	linear	anthropo-morph	Gwion infill			
J	575	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	35		
J	576	painting	mulberry	S+L	anthropo-morph	anthropomorph			
J	577	painting	mulberry	S+L	anthropo-morph	anthropomorph	39		

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
J	578	painting	mulberry	S+L	anthropo-morph	Gwion x	19		
J	579	painting	dark red	linear	fragment	fragment			
J	580	painting	dark red	outline	non-figurative	design simple	6		
J	581	painting	dark red	fragment	fragment	fragment			
J	582	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	36		
J	582a	battering	unpatinat-ed	solid	non-figurative	area			
J	583	painting	mulberry	S+L	object	object	9		
J	584	painting	dark red	fragment	fragment	fragment			
J	585	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	26		
J	585a	battering	unpatinat-ed	solid	non-figurative	area			
J	586	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	52		
J	586a	battering	unpatinat-ed	solid	non-figurative	area			
J	587	painting	mulberry	S+L	anthropo-morph	Gwion Yowna	45		
J	587a	battering	unpatinat-ed	solid	non-figurative	area			
J	588	painting	red	S+L	anthropo-morph	anthropomorph	14		
J	589	painting	red	linear	non-figurative	design apex	9		
J	590	spray	red	stencil	hand	hand left		8	8
J	591	drawing	dark red	linear	non-figurative	line	10		
J	592	drawing	dark red	linear	non-figurative	band	21		
J	593	drawing	black	linear	non-figurative	band	15		
J	594	scratching	unpatinat-ed	linear	non-figurative	design apex	15		
J	595	scratching	unpatinat-ed	linear	non-figurative	scribble	10		
J	596	spray	red	dot	non-figurative	area	49		
J	597	battering	unpatinat-ed	solid	non-figurative	area	19		
J	598	scratching	unpatinat-ed	linear	non-figurative	line	26		
J	599	battering	unpatinat-ed	solid	non-figurative	area	34		
K1	600	print	red	solid	non-figurative	string skein	14		
K1	601	print	red	solid	non-figurative	string skein	29		
K1	602	print	red	solid	non-figurative	string skein	11		
K1	603	print	red	solid	non-figurative	string skein	25		
K1	604	print	red	solid	non-figurative	string skein	20		
K1	605	print	red	solid	non-figurative	string skein	23		
K1	606	print	red	solid	non-figurative	string skein	12		
K1	607	print	red	solid	non-figurative	string skein	28		
K1	608	print	red	solid	non-figurative	string skein	19		
K1	609	spray	yellow	stencil	hand	hand left		9	9
K1	610	spray	red	stencil	hand	hand left variant		9	10
K1	611	spray	yellow	stencil	hand	hand left		9	10
K1	612	spray	yellow	stencil	object	object unknown	14		
K1	613	print	cream	solid	flora	grass stalks	45		

Art Area	Motif Number	Technique	Colour	Form	Motif Group	Motif type	Size (cm)	mf	kn
K1	614	spray	red	stencil	hand	hand unknown			
K1	615	spray	red	stencil	fragment	fragment			
K1	616	print	red	solid	non-figurative	string skein	25		
K1	617	print	cream	solid	flora	grass stalks	20		
K1	618	print	red	solid	non-figurative	string skein	25		
K1	619	spray	yellow	stencil	hand	hand left			9
K1	620	spray	red	stencil	hand	hand unknown			
K1	621	print	red	solid	non-figurative	string skein	32		
K1	622	print	red	solid	non-figurative	string skein	32		
K1	623	print	red	solid	non-figurative	string skein	50		
K1	624	print	red	solid	non-figurative	string skein	36		
K1	625	spray	red	stencil	hand	hand right		8	9
K1	626	print	cream	solid	flora	grass stalks	25		
K1	627	spray	red	stencil	object	object unknown	25		
K2	628	spray	red	stencil	object	unknown			
K2	629	painting	red	O+l	fauna	quadruped	31		
K2	629a	painting	red	linear	non-figurative	line			
K2	630	print	red	solid	non-figurative	string skein	17		
K2	631	spray	red	stencil	hand	hand right		6.5	
K2	632	spray	red	stencil	hand	hand left			9
K2	633	painting	red	linear	non-figurative	bar	3		
K2	634	spray	red	stencil	hand	hand unknown		6	
K2	635	spray	red	stencil	fragment	fragment			
K2	636	spray	red	stencil	hand	hand left		10	10
K2	637	print	cream	solid	flora	grass stalks	39		
K2	638	print	cream	solid	flora	grass stalks	44		
K2	639	painting	dark red	linear	non-figurative	bar row	38		
K2	640	print	red	solid	non-figurative	string skein	24		
K2	641	print	red	solid	non-figurative	string skein	32		
K2	642	spray	red	stencil	hand	hand left		6	7
L	643	print	orange-red	solid	non-figurative	string skein	23		
L	644	print	orange-red	solid	non-figurative	string skein	24		
L	645	print	orange-red	solid	non-figurative	string skein	26		
L	646	print	orange-red	solid	non-figurative	string skein	25		
L	647	print	orange-red	solid	non-figurative	string skein	31		
L	648	print	orange-red	solid	non-figurative	string skein	20		
L	649	print	red	solid	non-figurative	string skein			
L	650	print	red	solid	non-figurative	string skein	22		
L	651	print	red	solid	non-figurative	string skein	27		
L	652	print	orange-red	solid	non-figurative	string skein	23		
L	653	print	orange-red	solid	non-figurative	string skein	13		
L	654	print	orange-red	solid	non-figurative	string skein	13		
L	655	print	red	solid	non-figurative	string skein	25		
L	656	print	orange-red	solid	non-figurative	string skein	16		
L	657	print	red	solid	non-figurative	string skein	23		
L	658	print	red	solid	non-figurative	string skein	22		
L	659	print	red	solid	non-figurative	string skein			
L	660	print	red	solid	non-figurative	string skein			
L	661	print	red	solid	non-figurative	string skein	13		
L	662	print	orange-red	solid	non-figurative	string skein	12		
L	663	spray	red	stencil	non-figurative	hand left			

Appendix 3
Pundawar Manbur Motif Tallies for Art Panel A

(Excluding overlapping motifs from previous sub-panels)

MOTIF GROUP	MOTIF TYPE	Art Panel A1	A2	A3	A4	A5	TOTALS	
Anthropomorph	Gwion Dalal	1					**1**	
	Gwion Ngununu	3	11	3	1	4	**22**	
	Gwion Yowna			4	4	3	**11**	
	Gwion unknown		2			1	**3**	
	Wanjina			1			**1**	
	Other anthro	5	6	3	4	5	**23**	
	fragment			1	1		**2**	**63**
Fauna	Bandicoot					1	**1**	
	Bird track				2		**2**	
	Waterbird					1	**1**	
	Catfish					1	**1**	
	Longtom					1	**1**	
	Fish unknown					1	**1**	
	Flying fox				1		**1**	
	Flying fox set				1		**1**	
	Macropod	1		1	3	1	**6**	
	Macropod head					3	**3**	
	Macropod track					1	**1**	
	Snake	1		1			**2**	
	Other	1	1	3	2	2	**9**	**30**
Flora	Grass prints					11	**11**	
	Vine					1	**1**	
	Yam					1	**1**	
	Other		1			7	**8**	**21**
Hand stencils	Hand left	2	8	3	9	17	**39**	
	Hand right	1	3	2	4	13	**23**	
	Hand? (unknown)		9	7	8	15	**39**	
	Hand variant	3	6	2	1	1	**13**	**114**
Non-figurative	Arc	1	1	1			**3**	
	Arc pair					3	**3**	
	Area	1	1	3	10	16	**31**	
	Band	1				10	**11**	
	Bar/Stroke				3	3	**6**	
	Bar pair				3		**3**	
	Bar set		2	3	1	3	**9**	
	Design apex	1	5	3		5	**14**	
	Design element			4	2	4	**10**	
	Design simple		3	1	6	1	**11**	
	Design complex				2	3	**5**	
	Disc					2	**2**	

MOTIF GROUP	MOTIF TYPE	Art Panel A1	A2	A3	A4	A5	TOTALS	
	Dot				2		**2**	
	Dot row				1		**1**	
	Dribble					1	**1**	
	Grid	1					**1**	
	Line		1	3	9	1	**14**	
	Line pair		1		1		**2**	
	Line set	1	4		10		**15**	
	Oval				1	1	**2**	
	Oval barred				2		**2**	
	Ovoid solid				2		**2**	
	Smear					4	**4**	
	Trident		1				**1**	
	Y-shape		1				**1**	**156**
Object	Boomerang			3	3	2	**8**	
	Boomerang pair	1		1		1	**3**	
	Headdress			1			**1**	
	other			1		4	**5**	**17**
fragment		3	6	7	12	24		**52**
TOTAL		28	73	63	111	179		**454**