Maliwawa figures—a previously undescribed Arnhem L and rock art style

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ABSTRACT

In this paper, a previously undescribed rock art style consisting of large human figures and animals with stroke-line infill is introduced. These depictions have been named Maliwawa Figures. They are primarily found in northwest Arnhem Land and to date have been recorded at 87 sites from Awunbarna (Mount Borradaile area) to the Namunidjbuk clan state of the Wellington Range. There are solitary figures and others arranged in compositions or scenes. We describe the features of this style, its distribution, subject matter and probable age. The results of a detailed analysis of all sites are discussed and a new, refined Arnhem Land rock art chronology is presented. It is concluded that Maliwawa Figures are most likely to date between 6,000 to 9,400 years of age and to be contemporaneous with Northern Running Figures and Yam Figures found at sites to the south.

Abbreviations: Awum: Awunbarna; Nam: Namunidjbuk; m: metre

INTRODUCTION

Western Arnhem Land, including Kakadu National Park, has a remarkable range and number of rock art sites with some sites known to the outside world since the 1800s. Focussed rock art research since the late 1940s has seen increasingly refined chronologies across a temporal span of tens of thousands of years, with regional differences defined (see David et al. 2017 for a review). Several thousand sites have now been documented and each year new discoveries are made by various teams of scholars working closely with Aboriginal communities. May et al. (2015), and May and Taçon (2014) have recently summarised the nature of this rock art based on detailed studies such as those of Brandl (1973), Chaloupka (1984a, 1993), Jelinek (1989), Lewis (1988) and Taçon (1989). Adding to this knowledge base, a number of recent PhD theses have explored different aspects of the rock art, focussing on specific areas within the region (e.g. Gunn 2016; Hayward 2016; Johnston 2018; Jones 2017; Marshall under review; Wesley 2014).

After undertaking vast amounts of fieldwork, various forms, styles and periods of art have been defined. Varying stylistic chronologies for western Arnhem Land rock art, spanning tens of millennia, have also been proposed (e.g. Brandl 1973; Chaloupka 1993; Chippindale and Taçon 1993, 1998; David et al. 2013; Gunn 2016, 2018; Jones et al. 2017; Lewis 1988; Taçon 1987; Taçon and Brockwell 1995; Taçon and Chippindale 2008; various papers in David et al. 2017). Although there are debates about terms to be used and the age of west Arnhem Land rock art styles, essentially the sequence from oldest to most recent consists of large naturalistic animals, Dynamic Figures, a mix of forms and styles including Yam Figures, Simple Figures, Northern Running Figures and early X-ray paintings, and then detailed X-ray art, a range of stick figures, and designs made of beeswax. Stencils run through the entire sequence. Despite profound change brought about by the arrival of people from Asia and Europe since at least the 1600s (Taçon et al. 2010), rock paintings continued to be made regularly through the contact period up to the mid-1980s (e.g. Taçon 1992) and have occasionally been made up to the present. Both recent and older rock art remains important for Kakadu-Arnhem Land communities today (e.g. Brady et al. 2020; May et al. 2019, 2020a, 2020b; Taçon 2019).
In this paper, we introduce a previously unrecognised style of rock painting that is primarily found at sites in northwest Arnhem Land and report on some of this rock art from Awunbarna (Mount Borradale area) and the Namunidjbuk clan estate of the Wellington Range (Figure 1). Large- to medium-sized human figures and animals dominate this style in terms of subject matter. Besides describing them in detail we also place the style in an updated and refined Arnhem Land rock art chronology.

**Background**

Between 2008 and 2011, we recorded 146 rock art sites in the Namunidjbuk Estate of the Wellington Range in northwest Arnhem Land with Aboriginal Traditional Owners. This was part of the Picturing Change and the Bajini, Macassans, Balanda and Bininj research projects that explored very recent rock art, especially from the Asian-European contact period (e.g. May et al. 2010; Taçon et al. 2010, 2012; Wesley 2014). In 2016–2018, as part of the History Places research project, a further 206 rock art sites were located and recorded during extensive surveys with Aboriginal research partners, bringing the total to 352.

In 2008, we began to notice that at some Wellington Range rock art sites there were unusual groups of human and animal figures in a style unlike those previously described for western Arnhem Land or elsewhere in Australia. Often the human figures were very large, even life-size, and composed in scenes. They differed from most large human figures that occur in other parts of Kakadu-Arnhem Land. During the 2016–2018 field seasons numerous examples of these figures emerged, including on previously undocumented large panels with a range of subject matter. Unusual scenes, compositions and activities were noted and it soon became apparent that the style was an important missing link from the middle period of the known Arnhem Land rock art chronology (see below). In 2018–2019, nine sites in the Awunbarna area, over 100 kilometres southwest of the Wellington Range, were also documented with figures in this recently identified style.

At the end of the 2016 field season, senior Traditional Owner Ronald Lamilami decided to give the style and figures a local Aboriginal name in his Mawng language. He chose to name the style after an area within his traditional clan estate, ‘Maliwawa’ (also spelt ‘Maliwarl’), that has a range of important rock art sites with imagery from various periods (May et al. 2010) and some highly significant panels of these figures. We have used the term Maliwawa Figures since and introduce the term and style here while also acknowledging that this style also appears in other clan lands. In this paper, we describe these distinctive figures in detail after reviewing the evidence and chronology of large human and animal figures from elsewhere in Kakadu-Arnhem Land.

![Figure 1. Map of Kakadu/Arnhem Land showing the general location of the Awunbarna and Namunidjbuk areas (Produced by A. Jalandoni; base map by Stamen Design [OpenStreetMap]).](image)
Kakadu-Arnhem land large naturalistic humans and animals

'Large Naturalistic Designs' were first described in detail by Chaloupka (1977:248) who argued that 'The oldest paintings at the Mt. Gilruth sites are of large anthropomorphs and animal designs ... executed as line paintings, in which the whole of the figure is filled with lines which follow the outline of the body, its appendages and contours'. Brandl (1973:183) had earlier proposed the oldest Arnhem Land rock art phase as 'red crudely painted animals and anthropomorphic figures'; however, he does not describe this phase in any more detail. Chaloupka (1977:248, 1985:274) noted that many of the large naturalistic animals were speared with three-pronged multibarbed spears and sometimes were associated with schematised human figures that have three-pronged spears, single pronged multi-barbed spears and what he calls a 'fighting pick'. Curiously, Chaloupka (1985:274) remarks 'The fighting pick appears again in the second last style of this period, whilst the three pronged spear came into use again during the following estuarine period'. It is unusual for distinctive material culture to disappear from use/depiction and then reappear thousands of years later, so this hints at a problem with Chaloupka's chronology.

In relation to a large naturalistic female anthropomorph he stated 'The shape of its head is similar to that of the later 'yam' representations' (Chaloupka 1977:248). This also suggests these figures are more recent in the Arnhem Land chronology. Chaloupka also noted that for large naturalistic human figures 'Noticeable attention was given to faces shown in profile with recognisable features, and also to hands and feet' (Chaloupka 1985:274). For Chaloupka (1993:102):

A typical figure is depicted with the head in profile, detailing its facial features and the shape of the cranium. The arms are held open and outstretched, or, in some horizontal figures, hanging down at right angles to the body. Although the upper part of the body is depicted frontally, the lower part is slightly turned aside, showing a slightly swelling abdomen and penis, and, on the opposite side, the buttocks. The legs are bent at the knees, with the feet protruding down ... Most of the figures have an unearthly aura about them, appearing as if floating in space. So far, they have not been found engaged in any activities or associated with weapons or implements.

Chaloupka (1993:102) states that most of these figures are male, depictions of females are rare and 'the majority of human figures are individual representations'. He also notes that some have detailed X-ray features (1993:102) and illustrates this with an example from the Liverpool River area of Arnhem Land (Chaloupka 1993:104, Figure 100). However, Lewis (1988:72) concludes that Chaloupka's large naturalistic period of animals and humans is poorly described and that most of these paintings are much more recent than Chaloupka believed. 'An alternative, and in my opinion, more likely possibility is that most of the 'large naturalistic style paintings' of the type Chaloupka has published post-date 'early' Mimi art and predate early X-ray art' (Lewis 1988:72).

Haskovec (1992) came to similar conclusions after revisiting Mt. Gilruth sites critical for establishing Chaloupka's sequence. After detailed analysis, he found no support for the contention that large humans and animals were made early in the sequence and states 'It is my opinion that the Large Naturalistic style evolved from or immediately followed the original Yam style' (Haskovec 1992:70).

About the same time in the early 1990s, Chippindale and Taçon (1993) undertook a detailed analysis of two large rock art panels in Kakadu National Park and showed that large naturalistic animals do occur under most earlier forms of rock art, as Chaloupka contended, but not large naturalistic humans. After documenting and analysing a few hundred sites in the 1990s, they reconfirmed this finding time and again, resulting in their published chronology only having large naturalistic animals early in the sequence without humans (Chippindale and Taçon 1998:106; Taçon and Chippindale 1994:215, Table 1). Instead, they argue Chaloupka’s Dynamic Figures are the first depictions of the human form (see also May et al. 2018).

In 1992, Taçon and Chippindale recorded a previously undocumented panel with two life-size human figures above Jim Jim Creek near the Kakadu—Arnhem Land border (see Taçon and Chippindale 2008:91 and their Figure 5.9). The figures have yam-like heads and appear to float horizontally across the panel. Because of these features and the weapons they hold, Taçon and Chippindale (2008) place them in the 4,000–6,000 year period that includes Yam Figures and Simple Figures:

Some of these human-like figures hold the three-prong spears, spearthrowers and other artefacts characteristic of this transitional period (Figure 5.9). Occasionally, animals (mostly macropods) are shown with a three-pronged spear piercing hind, back or stomach (Figure 5.10). Some of the human and macropod figures have tassels, bobbles or other designs characteristic of classic Yam figures but used sparingly. These features, along with the artefacts, help place the figures. In some ways they appear transitional between Yam Figures/Simple Figures and the solid infill/X-ray paintings of the most recent phase.
In summary, Chaloupka (1977, 1985, 1993) contends that large naturalistic humans and animals were made before Dynamic Figures and could have a Pleistocene age. Lewis (1988) and Haskovec (1992) argue that large naturalistic humans and animals postdate Dynamic Figures and were made in the mid-Holocene. Taçon and Chippindale (2008; and see Chippindale and Taçon 1993, 1998), on the other hand, conclude that large paintings of animals both postdate and predate Dynamic Figures but large naturalistic humans were only made after Dynamic Figures. Haskovec (1992:70) also argues that large naturalistic humans and animals ‘evolved from or immediately followed the original Yam style’. With new data from north-west Arnhem Land, we set out to test these propositions and to update the Arnhem Land chronology accordingly.

Maliwawa figure description

General features

Maliwawa Figures comprise mainly naturalistic human and animal forms with stroke-line infill throughout but occasionally they are in outline with only a few strokes of infill. The stroke infill typically runs parallel to the limbs and to the length of the figure. Maliwawa Figures are often large (over 50 cm high), sometimes life-size (Figure 2), although there are also some small Maliwawa figures 20–50 cm in height. Generally, they are larger than Dynamic Figures. Maliwawa Figures are primarily found in various shades of red to mulberry. At two sites, animal and human figures have some faded dark yellow with the red, suggesting many Maliwawas may once have been bichrome paintings. Almost all Maliwawa Figures were painted, but there is one drawing of a Maliwawa human figure.

Unlike Simple Figures, Maliwawa human figures have fully formed musculature akin to X-ray paintings. Maliwawas are in less animated poses than Dynamic Figures but more animated than Simple, Yam or X-ray figures (e.g. Johnston 2017). However, some are static or appear to be ‘floating’. Often Maliwawa human bodies are somewhat twisted with different aspects of perspective shown. Human figures were classified as male if male genitalia were depicted, female if they had breasts and no male genitalia, and indeterminate if they had neither. Some male figures and others that lack sex-specific characteristics have hair or headdresses shown (see below). Maliwawa males are usually in profile and often have a bulging stomach above a penis. Penises are rarely depicted in Dynamic Figure paintings (Chaloupka 1984b; Johnston 2018; May et al. 2018) but are more common for X-ray and related recent paintings. A few Maliwawa females are also shown with an extended abdomen.

The arms of human figures are often bent with the forearm and hands shown at a right angle or lowered at an obtuse angle in relation to the body, mirroring the feet. Sometimes hands/fingers are also drooping downwards. Defined fingers and toes (although not always five of each) and defined muscles in the legs (especially calves) are common. Indeed, there is much definition of the legs, showing musculature and realistic foot details. The angle of the foot between the foot and the lower leg tends towards obtuse, giving the impression of ‘floating’, ‘dream-like’, ungrounded figures. The head of human figures is more likely to be orientated or tilted upwards/backwards, rather than down. Maliwawa human figures appear animated and are often depicted doing things but not in vigorous motion the way that Dynamic Figures are usually portrayed (see Johnston 2018:224).

Generally, Maliwawa paintings do not have X-ray features but a few depictions of animals have rudimentary body cavities depicted, suggestive of a first step towards early X-ray paintings in which body cavities feature. Maliwawa human figures are almost as detailed in terms of body features as Dynamic
Figures but have much less material culture depicted. As is typical of early Arnhem Land animal depictions, Maliwawa animals are usually in profile. Some macropods are shown in a human-like sitting pose with front paws in front, resembling a sitting person playing a piano (Figure 3). Tracks and geometric designs are rare. Only one animal-headed being has been recorded, a therianthrope with a human-like body and a macropod-like head. The macropod-like head is similar to some Dynamic Figure theriantropes but the legs and arms are Maliwawa-like (Figures 4 and 5). Therianthropes are more common in Dynamic Figure rock paintings, with 14 recorded (4.7% of all Dynamic Figures) in the Jabiluka lease area (Johnston 2018; May et al. 2018:73) and 45 others from the rest of Kakadu-Arnhem Land analysed by Taçon and Chippindale (2001:190–196). Chaloupka (1993:112) concluded they comprise 3% of Dynamic Figure paintings.

**Distribution**

Most Maliwawa Figures are in accessible/visible places at low landscape elevations rather than hidden away or at shelters high in the landscape. Maliwawa Figures were recorded in northwestern Arnhem Land at a total of 87 sites, at several locations within Awunbarna in the west to sites at the eastern end of the Namunidjbuk clan estate of the Wellington Range, which are about 130 kilometres northeast of the westernmost Awunbarna site. There may be others at sites between these areas but a review of site records made by Chaloupka did not indicate any. At Awunbarna, Maliwawas are found at nine of 39 sites (23.08%) we recorded while at Namunidjbuk they are found at 78 of 352 sites (22.16%). Roberts and Parker (2003:37) were the first to publish a photograph of a panel of what we are calling Maliwawa Figures, from one of the Awunbarna sites we studied, although they did not explore their significance.
Further south and west in Kakadu-Arnhem Land, Maliwawa Figures are much scarcer. A handful of definitive sites with Maliwawa Figures are found on the Arnhem Land plateau, the best of which is on Upper Jim Jim Creek near the Kakadu-Arnhem Land border (see Taçon and Chippindale 2008:91, Figure 5.9 and 2008:78, as well as quote above) and an Upper Twin Falls Creek site with many contemporary Yam Figures (e.g. see Chaloupka 1993:140–141; Figure 140). A probable Maliwawa scene is located at a site near the East Alligator River and, in 1993, two large Maliwawa-like males were recorded in central Arnhem Land (Taçon 1993:53–54, Figures 24 and 25). Also, Brandl (1973:95, Figure 221) recorded one female Maliwawa-like figure at the Cadell River. It is important to note, however, that we are convinced many more examples of this style exist and have not yet been identified, including in the work of other researchers.

Maliwawa subject matter

A detailed analysis of the subject matter of all 87 sites was undertaken. In total, we recorded 572 Maliwawa motifs consisting of 319 animals (55.77%), 240 humans (41.96%), 8 geometric designs (1.40%), 4 macropod tracks (0.70%), and an animal-headed being (Table 1). However, the Awunbarna sample is about two-thirds human (62.39%) and one-third animal (35.78%) while Namunidjbuk sites have more animal depictions (60.48%) than human (37.15%).

Fauna

Animals are mostly in profile but occasionally are depicted in split/dual perspectives. There are 18 faunal categories including ‘unidentified’. Macropods, birds and snakes are the most frequent subjects, in that order, for Namunidjbuk, Awunbarna and the entire sample (Table 2). Macropods, birds, snakes and longtom fish make up 74.92% of the total. More generally, mammals are most common (58.31%), followed by reptiles (16.30%), birds (11.91%) and fish (11.91%) (Table 3).

<table>
<thead>
<tr>
<th>Nam</th>
<th>Percent</th>
<th>Awun</th>
<th>Percent</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human</td>
<td>37.15%</td>
<td>68</td>
<td>62.39%</td>
<td>240</td>
<td>41.96%</td>
</tr>
<tr>
<td>Animal</td>
<td>60.48%</td>
<td>39</td>
<td>35.78%</td>
<td>319</td>
<td>55.77%</td>
</tr>
<tr>
<td>Geometric</td>
<td>1.51%</td>
<td>1</td>
<td>0.92%</td>
<td>8</td>
<td>1.40%</td>
</tr>
<tr>
<td>Macropod track</td>
<td>0.65%</td>
<td>1</td>
<td>0.92%</td>
<td>4</td>
<td>0.70%</td>
</tr>
<tr>
<td>Animal-headed being</td>
<td>0.22%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>0.17%</td>
</tr>
<tr>
<td>Total</td>
<td>100.01%</td>
<td>109</td>
<td>100.01%</td>
<td>572</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Namunidjbuk has a greater proportion of macropods, snakes, flying foxes and longtom fish than Awunbarna. In contrast, Awunbarna has a higher percentage of birds, turtles, thylacines and ‘bilbies’ than was found at Namunidjbuk sites. Namunidjbuk has five sets of back-to-back macropods (Figure 3), something more common in the recent rock art of western Arnhem Land. Awunbarna has two back-to-back ‘bilbies’ (Figure 6). There are seven depictions of animals long extinct in the Arnhem Land region (2.19% of faunal subject matter), consisting of four...
thylacines and three ‘bilbies’. At one Namunidjbuk site there is a rare depiction of a dugong.

**Human figures**

A third of human depictions were classified as male because they have male genitalia. Females, identified because breasts were shown, are rare, comprising only 5.00% of human depictions. Almost 59% of human figures could not be determined to be either male or female because they lack sex-specific characteristics and thus are labelled ‘indeterminate human figure’ (Table 4). Most human figures face right, 99 (41.25%), 86 (35.83%) face left and 50 (20.83%) are obverse (although five of these may be shown from behind). For males, 58 (66.66%) face right, 25 (28.74%) face left, 4 (4.60%) are obverse. This compares to 40 (28.37%) indeterminate human figures facing right (including three sitting), 58 (41.13%) facing left and 40 (28.37%) obverse. One lone drawing is of an indeterminate figure facing left and shown leaning over (Table 5).

Half (6) of all females are obverse (Figure 7), three face left and only one faces right. One is shown in obverse and facing left in pronounced twisted perspective. Another female is upside down next to a male with their genitals in proximity to each other. Several males and indeterminates in both Awunbarna and Namunidjbuk are depicted in various stages of bending over. Two indeterminate human figures at Awunbarna sites, and one at Namunidjbuk, are shown sitting. Another at Awunbarna is on its knees while one is lying on its back at Namunidjbuk and three appear to be crawling.

Human figures generally have round-shaped or oval-shaped heads; some have lines on the head suggestive of hair; others have a range of headdresses. One unique indeterminate human figure has hair-like lines all over its body (Figure 8). A total of 83 (34.58%) of 240 human figures are shown with material culture, consisting of 72 headdresses (86.75%), six barbed spears (7.23%), four bags (4.82%) and a boomerang (1.20%). There are 10 headdress forms. The most common is a ball headdress (33; 45.83% overall, 45.83% of Namunidjbuk headdresses and 61.54% of Awunbarna headdresses), followed by oval (10; 13.89%), cone (7; 9.72%), feather (6; 8.33%) and rayed line (6; 8.33%). There are three cone + feather headdresses. A greater range of headdress types was found at Namunidjbuk sites compared to Awunbarna, as well as in association with indeterminate human figures compared to males. At Awunbarna, three males have a bag shown suspended from the neck and also have headdresses, while an indeterminate figure carries a bag in its hand. Barbed spears are held by one male at one Namunidjbuk site, three males at a second site, and two indeterminate figures at a third Namunidjbuk site. At one Namunidjbuk site, a barbed spear was depicted through a macropod’s

**Table 4.** Maliwawa human figures analysed.

<table>
<thead>
<tr>
<th>Site</th>
<th>Nam total</th>
<th>Nam per cent</th>
<th>Awun total</th>
<th>Awun per cent</th>
<th>Total</th>
<th>Total per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>62</td>
<td>36.05%</td>
<td>25</td>
<td>36.76%</td>
<td>87</td>
<td>36.25%</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>6.40%</td>
<td>1</td>
<td>1.47%</td>
<td>12</td>
<td>5.00%</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>99</td>
<td>57.56%</td>
<td>42</td>
<td>61.76%</td>
<td>141</td>
<td>58.75%</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>100.01%</td>
<td>68</td>
<td>99.99%</td>
<td>240</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

**Table 5.** Human Figure orientation.

<table>
<thead>
<tr>
<th>Site</th>
<th>Nam total</th>
<th>Nam orientation</th>
<th>Awun total</th>
<th>Awun orientation</th>
<th>Total</th>
<th>Total Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>62</td>
<td>42r, 18l, 2o</td>
<td>25</td>
<td>16r, 7l, 2o</td>
<td>87</td>
<td>58r (66.66%), 25l (28.74%), 4o (4.60%)</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>1r, 2l, 6o, 1o, 1oud</td>
<td>1</td>
<td>11</td>
<td>12</td>
<td>1r, 3l, 6o, 3o, 1oud</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>99</td>
<td>24r, 39l, 35o, 1sr</td>
<td>42</td>
<td>16r, 19, 5o, 2sr</td>
<td>141</td>
<td>40r (28.37%), 58l (41.13%), 40o (28.37%), 2sr, 1sr</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>67l, 60o, 43o, 1o, 1oud</td>
<td>68</td>
<td>31r, 26l, 7o, 2sr</td>
<td>240</td>
<td>99r (41.25%), 86l (35.83%), 50o (20.83%), 2sr, 1sr, 1o, 1oud</td>
</tr>
</tbody>
</table>

I: left; r: right; o: obverse/reverse; s: sitting; ud: upside down.
Scenes/compositions/themes
As with earlier Dynamic Figure rock art (e.g. see Chaloupka 1984b; Johnston 2018; May et al. 2018), some Maliwawa Figures are arranged in complex scenes of activity. Importantly, human figures are frequently depicted with animals, especially macropods, and these animal–human relationships appear to be central to the artists’ message. Another key theme at Awunbarna sites is a male or indeterminate human figure holding an animal, another human figure or an object. For instance, at one site an obverse male holds a turtle. At another site, an obverse male holds a large bird. At a third location, an indeterminate human figure is depicted bending over holding a snake by the tail (Figures 9 and 10). Some human figures reach down to others or hold hands. For example, two indeterminate human figures facing opposite directions hold hands (Figures 9 and 10). At another Awunbarna site, a male Maliwawa reaches down and holds the head of a shorter male facing him and a female stands behind the taller male. At one site, two males standing side-by-side are facing right with the slightly taller forward male reaching back so that his arm is around the rear figure’s shoulders and he is looking back to him. At another site, an indeterminate human figure holds a bag.

Occasionally there are rows of male and indeterminate human figures. In one row, three males wear a bag strung from the neck. There are 11 indeterminate human figures or males in various stages of bending over, including the one holding a snake by the tail mentioned above. Another indeterminate human figure was portrayed as if on its knees. At one site, there is a sitting male with possible faeces below its bottom.

All of these themes can also be found at Namunidjbuk sites. For instance, holding something, especially a snake, is common. At one site, a male is holding a snake with both hands and the blunt end of a spear. At another, back-to-back indeterminate figures with ball headdresses are bending down and one holds a snake by the tail. At a third site, a male is shown holding an enormous snake with both hands around the snake’s lower body. In a fourth rock shelter, a male and an indeterminate figure are shown next to each other with hands on/next to their hips and the indeterminate figure is standing on the tail of a snake. At two other sites a male holds a snake. At another locality, a snake encircles three ovals.

Elsewhere, a male is shown reaching down holding what appears to be a dead bird. An unusual composition consists of a male Maliwawa human figure with cone plus feather headdress (0.80 metres wide by 1.44 metres high) reaching out to a large...
bird with one hand and a large macropod with the other (possibly an emu and kangaroo). Between the macropod and the human figure is a therianthrope. The therianthrope has a macropod-like head and human body. It is positioned between the macropod and the male Maliwawa figure giving the suggestion of transformation from animal to animal-human to human (Figures 4 and 5). At other sites, an indeterminate holds a bird, a bird holds an oval with its small wings, a large indeterminate figure bending forward to the left holds a boomerang, and a male holds a fish. At one site, a thylacine appears to be climbing/holding something below a male Maliwawa figure.

On one rock shelter wall, two males with ball headdresses face each other and reach down to a shorter obverse indeterminate human figure. On another wall, a male Maliwawa reaches down to hold the head of a shorter indeterminate human figure facing away from him (Figure 11). A female stands behind the male on the left. A vertical macropod is behind the female. A second male facing the first and the indeterminate human figure in the middle also reaches down towards the head of the indeterminate figure. Both males have ball headdresses. It is somewhat similar to another Namunidjbuk scene and one at Awunbarna in terms of the number and arrangement of the figures.

There are two sets of back-to-back indeterminate human figures, including the set mentioned above, and two sets of back-to-back macropods at the same site as one of the sets of back-to-back humans. Three other sites have back-to-back macropods while at another site two macropods face each other. Some sites have rows of humans or rows of macropods. At one location, there is a row of six males and an indeterminate figure on a boulder across from a row of three macropods. Three males hold barbed spears. At another site there is a row of animals and humans including a male with a snake

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**Table 6. Human Figures with material culture**

<table>
<thead>
<tr>
<th>Site</th>
<th>Male</th>
<th>Female</th>
<th>Indeterminate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nam Total</td>
<td>Nam Range</td>
<td>Nam Total</td>
<td>Nam Range</td>
</tr>
<tr>
<td>Male</td>
<td>36 (32h or 88.89%)</td>
<td>11 (8h or 72.73%)</td>
<td>5hb (62.50% of h), 2hf, 1hc, 3b</td>
<td>47 (40h or 85.11%)</td>
</tr>
<tr>
<td></td>
<td>36 = 14hb (43.75% of h), 4ho, 4hc, 3hf, 2hrl, 3hbrl, 1hb, 1hcf, 1hbf, 1s</td>
<td>3hb (60.00% of h), 1 ho, 1hdf, 1b</td>
<td>36 (32 h or 88.89%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 (27 h or 90%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>30 = 11hb (40.74% of h), 5ho, 4hrl, 2hc, 2hcf, 1hf, 1hl, 1hbf, 2s, 1bo</td>
<td>6 (5h or 83.33%)</td>
<td>3hb (60.00% of h), 1 ho, 1hdf, 1b</td>
<td>36 = 14hb (43.75% of h), 6ho, 4hrl, 2hc, 2hcf, 1hdf, 1hf, 1hl, 1hbf, 1b, 2s, 1bo</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>66 (59h or 89.39%)</td>
<td>17 (13h or 76.47%)</td>
<td>8hb (61.54% of h), 2hf, 1hc, 1ho, 1hdf, 4b</td>
<td>83 (72 h or 86.75%)</td>
</tr>
<tr>
<td></td>
<td>66 = 25hb (42.37% of h), 9ho, 6hc, 6hrl, 4hf, 3hcf, 3hbrl, 2hbf, 1hl, 6s, 1bo</td>
<td>17 (13h or 76.47%)</td>
<td>8hb (61.54% of h), 2hf, 1hc, 1ho, 1hdf, 4b</td>
<td>83 = 33hb (45.83% of h), 10ho, 7hc, 6hf, 6hrl, 3hcf, 2hbf, 3hbf, 1hl, 1hdf, 4b, 6s, 1bo</td>
</tr>
</tbody>
</table>

h: headdress; hb: ball headdress; ho: oval headdress; hc: cone headdress; hf: feather-shaped headdress; hrl: rayed line headdress; hcf: cone and feather headdress; hbf: ball and feather headdress; hbrl: ball and rayed line headdress; hl: line headdress; hdl: double line headdress; b: bag; s: spear; bo: boomerang.
partly wrapped around his torso. One Namunidjbuk site has a life size male 1.8 m high in a ‘flying/float- ing’ stance with a crawling indeterminate human figure reaching up to the male’s waist. At various sites, human figures are shown bending over. This includes a scene of three indeterminate human figures with lines coming from their faces leaning over and holding their hands close to their heads (Figure 12). Elsewhere at this site a small indeterminate human facing left next to a male facing left has similar lines coming from its bottom. At another site, two indeterminate figures with their backs to us are side by side and something is coming out of one’s bottom. At one site, a male figure has dots coming out of, and around, its penis.

Three sites have scenes suggestive of sexual intercourse. The first has a male and female shown with the female upside down near the male and with their genitals in close proximity to each other. At a second site, where the male with dots coming out of its penis is located, a male and an indeterminate human figure appear to be engaged in intercourse. At a third site, an indeterminate human figure is standing next to a male that is bending over as if the two are engaged in intercourse.

Interestingly, there is only one scene that could be related to hunting in this style, unlike with Dynamic Figures, X-ray paintings and recent stick figure compositions. However, as mentioned above, there is also one Maliwawa macropod that has a barbed spear through its neck.

**Chronology and possible age**

Maliwawa figures were noted to be superimposed under Simple Figures at two sites and over Dynamic Figures at four locations. At three sites a Maliwawa human or animal figure is over 3 Middle Finger Closed (3MF) hand stencils (e.g. Figure 13) and at one site a Maliwawa macropod is over a 2 Middle Finger Closed (2MF) hand stencil. These types of stencils are often associated with Dynamic Figures (Chaloupka 1984b; Johnston 2018) but some appear under Dynamic Figures at Namunidjbuk sites. Maliwawa animals are typical of a freshwater environment rather than estuarine (e.g. freshwater fish such as longtom; no barramundi or fork-tail catfish; macropods and snakes common). Some Maliwawa
human figures are associated with Maliwawa thylacines. These observations, along with data from recent literature (e.g. papers in David et al. 2017; Gunn 2018; Hayward 2016; Johnston 2018; Jones 2017; Jones et al. 2017; Wesley 2014), and the past decade of our fieldwork in various parts of western Arnhem Land, has led to a new refined rock art chronology that fleshes out the middle of the sequence and indicates that Maliwawa, Yam and Northern Running Figures were regional traditions from the same time period with some overlap. They were also transitional styles between Dynamic Figures and later Simple Figures, X-ray humans and animals and other recent forms of rock art (Table 7).

This detailed chronology (primarily developed by PT, SM and IJ) is based on past proposed chronologies by various researchers including our own (summarised in David et al. 2017), and data collected from several locations in Kakadu National Park and in northwest Arnhem Land between 2008–2019, recent rock art research elsewhere across Kakadu-Arnhem Land by others (see above), and the latest environmental records. Although the environmental setting provides context to our chronology, we note that the environment is not the key stylistic determinate player in rock art change. We argue that rock art stylistic change is influenced by both environmental and cultural factors, such as contact with other groups of people, population increase and, in other parts of the world, the domestication of animals and plants.

However, there were shifting forms of interplay between environmental and cultural influences on rock art change in the past 20,000 or more years in Australia. As June Ross (2013:165) notes in her pan-Australian study of regionally distinct rock-art styles, 'alterations noted in the archaeological record such as the introduction of a new art style are viewed as adaptive strategies aimed at ameliorating changing ecological conditions'. Ross (2013:165) also suggests there is more to this story than just adaptation to environmental change. She argues that: 'each of the varied art assemblages were introduced at a time when the relationship between people and place was under pressure, whether the pressure came from outside intruders, rising sea levels, population increase or the introduction of more intense

<table>
<thead>
<tr>
<th>Estimated Years BP</th>
<th>Main Rock Art Styles and Techniques</th>
<th>Regionalism</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown but pre-18,000</td>
<td>Various types of hand stencils and animal stencils; object and hand prints</td>
<td>Pan Arnhem Land</td>
<td>Variable</td>
</tr>
<tr>
<td>18,000 – 15,000</td>
<td>Large Naturalistic Animals (including various extinct animals); hand stencils</td>
<td>Pan Arnhem Land</td>
<td>Arid and cool</td>
</tr>
<tr>
<td>15,000 – 13,000</td>
<td>Large Naturalistic Animals (including some extinct animals); hand stencils</td>
<td>Pan Arnhem Land</td>
<td>Arid and rising temperatures; sea level 120–140 m below present</td>
</tr>
<tr>
<td>13,000 – 10,000</td>
<td>Dynamic Figures (mostly human but some animals, including the now extinct thylacine; very small to life size) and associated stencils, especially material culture; grass prints</td>
<td>Pan Arnhem Land with regionalism developing</td>
<td>Arid; sea levels rise rapidly; flooding</td>
</tr>
<tr>
<td>10,000 – 6,000</td>
<td>Maliwawa Figures, Northern Running Figures, and Yam Figures; some large animals; rare thylacine depictions; Simple Figures start to appear; stencils</td>
<td>Highly regionalised</td>
<td>Sea levels rise more slowly; increasing rainfall; flooding</td>
</tr>
<tr>
<td>6,000 – 4,000</td>
<td>Multiple new styles and subjects (e.g. dingo) appearing including moderate to small sized Simple Figures and Bininj Kunburk Figures; stencils</td>
<td>Simple Figures are Pan Arnhem Land but there are several forms that vary in concentrations regionally; Kunburk Figures are in one region only.</td>
<td>Sea level stabilised; maximum effective precipitation</td>
</tr>
<tr>
<td>4,000 – 2,000</td>
<td>Early X-ray and associated paintings of humans and animals (moderate size), stencils and prints that develop into the Complete Figure Style</td>
<td>Pan Arnhem Land with regionalism developing</td>
<td>ENSO begins to dominate; increasing climatic variability; sharply decreasing rainfall</td>
</tr>
<tr>
<td>2,000 – 500</td>
<td>Detailed X-ray and other aspects of the Complete Figure Style, including large humans and animals, stencils and prints</td>
<td>Regionalisation</td>
<td>Increasing climatic variability; decreased rainfall</td>
</tr>
<tr>
<td>500 - present</td>
<td>X-ray and other aspects of the Complete Figure Style plus introduced subject matter, including large humans and animals, stencils and prints</td>
<td>Regionalisation</td>
<td>Contact period and changing cultural and climatic environments</td>
</tr>
</tbody>
</table>
interaction in the form of trade networks, or a combination of these factors’.

It should also be noted that pecked/pounded cupules were made at several locations and probably during different time periods; drawings are rare and mostly confined to the past few hundred years except for a pair of large drawn thylacines that are probably at least 5,000 years of age, two drawn Dynamic/Post-Dynamic Figures (Gunn and Whear 2007) and one Maliwawa Figure; engraved animal (bird and macropod) tracks are found at only a few locations and could be of considerable age given patinas and crusts over them; engraved figures are rare, but there is one site with some small fish petroglyphs and another with pecked human feet/footprints. Hand and material culture stencils run through the entire western Arnhem Land rock art sequence, but some forms of hand stencils, such as three or two middle fingers closed variants, are very early in the sequence while open hand stencils are found in every period.

### Constraining the age of Maliwawa figures

Taçon and Brockwell (1995:689) used various lines of evidence to argue that Dynamic Figures were most likely to have been made between 12,000 to 13,000 years ago, no younger than 10,000 years and no older than 15,000 to 16,000 years. Various researchers (e.g. Barry 1997; Barry and White 2004; Lewis 1988, 1997; Taçon 1998) have argued that Dynamic Figures and Gwions of the Kimberley of Western Australia should be the same age given their stylistic similarity and where they sit in regional rock art chronologies. We still do not have direct scientific dates for Dynamic Figures, but Finch et al. (2020) recently used AMS C\(^{14}\) assays to date mud wap nests over and under Gwion figures. The results are exactly as predicted for Dynamic Figures by Taçon and Brockwell (1995), with most dated Gwions created about 12,000 years ago and one possibly as much as 16,000 years old (Finch et al. 2020:7).

Jones et al. (2017) dated Northern Running Figures and other ‘Middle Period’ paintings to 6,000 cal. BP – 9,400 cal. BP, and early X-ray beginning at 6,000 cal. BP. As Jones et al. (2017:88) note:

> The early Holocene age determinations of this art style are significant for a number of reasons. Firstly, they provide a minimum age for not only the NRF art style, but also other associated art styles occurring concurrently within the ‘Middle Period’.

Secondly, the age determinations provide a minimum age for the ‘Early Period’ art styles of western Arnhem Land. Subsequently, these results confirm Pleistocene antiquity for ‘Early Period’ art styles in the relative chronology, until now a highly likely but unsubstantiated hypothesis. Finally, the NRF art style occurs during the Pleistocene–Holocene transition, a period which palaeoenvironmental research and archaeological modelling suggest was one of major transformation for Indigenous Australian societies.

However, Jones et al. (2017) obtained radiocarbon age constraints by dating oxalate crusts. This technique is controversial so although the age constraints they obtained make sense, future confirmations are needed. What is more secure is that Northern Running Figures appear after Dynamic Figures in the rock art chronology and that they are regionally constrained to near the East Alligator River (Jones and May 2017). Further south, it is Yam Figures that appear in the rock art sequence after Dynamic Figures. To the north, we have found Maliwawa Figures occur in the rock art sequence after Dynamic Figures and there are no instances of either Northern Running Figures or Yam Figures at Awunbarna or Namunidjbuk. Some Maliwawa, Northern Running and Yam Figures are reminiscent of Dynamic Figures in varying ways, for instance, the Dynamic nature of the bodies of Northern Running Figures, the Maliwawa fauna and range of headdress types and some Yam Figure heads/headresses resemble those of Dynamic Figures.

The Maliwawa Figures are younger than Dynamic Figures but older than X-ray paintings and Simple Figures, thus less than 12,000 years of age and more than 6,000. If they are the regional counterparts of Northern Running Figures, they would probably have a maximum age of about 9,400 years. There is a similar range of Maliwawa faunal subject matter as in Dynamic Figure style paintings (see Taçon and Chippindale 2008:77; May et al. 2018:72). This suggests a similar ‘freshwater’ environment as the range of fauna depicted in subsequent styles includes new species, such as barramundi, fork-tail catfish and saltwater crocodiles that are typical of the ‘saltwater’ environment that dominated Arnhem Land after the sea rose to its current level about 6,000 years ago. Although Maliwawa material culture was rarely depicted, other than headdresses, the boomerang, single-sided barbed spears and bags are more similar to Dynamic Figure material culture than that of any subsequent styles. Therefore, various lines of evidence suggest Maliwawas were most likely to have been created between 6,000 and 9,400 years ago. The fact that thylacines, and what appear to be other extinct animals, were depicted further supports this age estimation.

Excavations at sites within the Bald Rock/Maliwawa area of Namunidjbuk revealed spikes of activity at various times. For instance, both stone artefact and ochre discard is variable throughout the 25,000 year occupation of the Bald Rock 1 site. For
stone, high artefact abundance occurs at 20,000, 18,000, 15,000 and 9,000 years ago, and finally in the last 1,000 years (Wesley et al. 2018:120). ‘Ochre discard from Bald Rock 1 mirrors the stone artefact discard trends starting with a small peak at 18,000 years ago, then a major peak at 15,000 years BP and another peak after 9,000 years BP’ (Wesley et al. 2018:124). The peak after 9,000 years sits well with what we contend would be the beginning of the Maliwawa rock painting period and the Maliwawa animal paintings are of fauna that would have been in Arnhem Land at that time. It also reflects an Australia-wide pattern of increasing population as detailed by Williams et al. (2018). They conclude that ‘The resulting population densities, along with improving climatic conditions between 9 and 6ka, may be associated with the appearance of increasingly large and complex Aboriginal societies observed in the Holocene archaeological record’ (Williams et al. 2018:151).

As noted above, when superimpositioning occurred, Maliwawa Figures consistently overlay Dynamic Figures and old hand stencil types but were under Simple Figures. Thus, all lines of evidence suggest human Maliwawa Figures lie between these better-known Arnhem Land styles and stencil forms, while Maliwawa animals transition from Dynamic Figure style animals to early X-ray fauna.

**Discussion and conclusions**

Despite many decades of rock art research across northern Australia, new discoveries of sites and unique imagery are made each year. New styles that were not recognised by previous chronologies are being defined (e.g. Brady et al. 2020; Gunn et al. 2019) and known styles are slowly being better assigned an age (e.g. Finch et al. 2020; Jones et al. 2017). New relationships between styles previously thought to be discreet and separated in time are also being detailed (e.g. Travers and Ross 2016) and a much more complex picture of rock art change over time is emerging. For instance, Jones et al. (in press) advocate a complete rethinking of the age and unity of large naturalistic animals in the rock art of western Arnhem Land and conclude that Chaloupka’s (1977, 1985, 1993) definition of the Large Naturalistic Style and its chronological placement in the relative rock art sequence is not supported. The results of our research in northwest Arnhem Land support Taçon and Chippindale’s (2008; Chippindale and Taçon 1998) conclusion that large naturalistic human figures postdate rather than predate Dynamic Figures and, in keeping with Lewis (1988) and Haskovec (1992), that they are early- to mid-Holocene in age. Furthermore, we have observed that different sorts of large and small naturalistic animals both postdate and predate Dynamic Figures, as Chippindale and Taçon (1993) argued, with Maliwawa naturalistic animals postdating Dynamic animal figures. Although Haskovec (1992:70) suggested large naturalistic humans and animals postdate Yam Figures, we argue Maliwawa variants were contemporary with Yam Figures.

**Rare animal subject matter and extinct species**

Thylacines are an indicator of age as until now they have only been associated with some of the older rock art styles, such as Large Naturalistic Animals and Dynamic Figures, and thylacines on the Australian mainland became extinct between 3,500 to 4,000 years ago (see Taçon et al. 2011, especially for a Dynamic Figure thylacine over a Large Naturalistic one at Namunidjbuk). The discovery of what appear to be depictions of ‘bilbies’ (Figure 6) at an Awunbarna site is surprising as bilbies are associated with arid and semi-arid environments far to the south and Arnhem Land has not been within their range in historic times (see map in Warburton and Travouillon 2016:165). Two of these animals are back-to-back and almost identical in size. The third bilby-like depiction is to the right of them and appears to have been made at a different time, and perhaps by a different artist, as it is larger, has a longer snout, has more line infill, and is in a lighter shade of red (Figure 14).

In the Northern Territory during historical times bilbies were as far north as about half way between Alice Springs and Tennant Creek. However, given the other fauna depicted, typical of an arid environment, and supporting the likely age of Maliwawa Figures closer to 9,000 years ago than 6,000 years ago, it is conceivable that at that time bilbies existed in Arnhem Land. Alternatively, a Maliwawa artist may have seen bilbies on a trip south and later painted them in the Awunbarna shelter to tell of the strange creatures seen. There is also the possibility that the depictions are of Agile Wallabies, Northern Nailtail Wallabies or Short-eared Rock-wallabies, all widespread across Kakadu-Arnhem Land today, but all of these species have much shorter ears and snouts than extant bilbies and the creatures depicted at Awunbarna.

The solitary painting of a dugong in association with a macropod (Figure 15) seems out of place as well. Depictions of dugongs in more recent styles are found at some Namunidjbuk sites and elsewhere in northern Australia but not in styles argued to be mid-Holocene or older (Taçon 2017). Indeed, this painting is the oldest depiction of a dugong yet
found. Today it is located about 15 kilometres south of the Arafura Sea but 6,000–9,400 years ago the coast would have been further north. The sea level would only have been one metre lower than now 6,000 years ago but 9,000 years ago it would have been about 20 metres lower. About 7,000 years ago the coast would only have been about 10 kilometres further north (Taçon and Brockwell 1995:679). Even 9,400 years ago the coast would have been within easy reach as it was only about 90 kilometres further north (see Williams et al. 2018:148, Figure 2). Aboriginal people walked such distances in ethnographic times (Chaloupka 1981) and the people who made the earlier Dynamic Figures left their paintings in rock shelters from Namunidjbuk to the southern end of the Arnhem Land Plateau, some 180 kilometres distant, as well as over a 200 kilometre area east to west (May et al. 2018:68). The dugong painting indicates a Maliwawa artist visited the coast but the lack of other saltwater fauna may suggest this was not a frequent occurrence.

At some sites there are two large macropods shown back-to-back with a small space between them (Figure 3). There are also some back-to-back human figures and the back-to-back ‘bilbies’ (Figure 4). Back-to-back macropods occur in more recent art at Namunidjbuk, elsewhere in Arnhem Land and in Kakadu National Park. They are often very large or life-size. During the contact period at one site, Djarrng, life-size back-to-back paintings of buffaloes were made (Taçon et al. in press). Back-to-back figures were painted on sheets of bark in the 1900s (e.g. see Mountford 1956:198–200). They are still painted by western Arnhem Land artists today on paper and have specific stories (Benson Nagurrgurrba pers. comm. 2020). Back-to-back figures are not found in Dynamic Figure rock art. Thus, given the age of between 6,000 to 9,400 years argued above for Maliwawa Figures, the Maliwawa back-to-back figures are the oldest known for western Arnhem Land and it appears this painting convention began with the Maliwawa style.

Cultural stories and talented artists

Maliwawa Figures are on average larger than Dynamic Figures, in more accessible places and at lower elevations in the landscape and in rock shelters, suggesting they were meant to be seen, possibly from some distance. Dynamic Figures are more subtle in their size and placement and usually are found at higher elevations in the landscape or at individual sites (see Johnston 2018:149–151) and in difficult to reach locations (May et al. 2018:79). Often, Maliwawa Figures dominate shelter walls with rows
of figures in various arrangements including those described above. An important aspect of Maliwawa Figures is the level of detail depicted in individual figures and between characters in scenes.

Maliwawa Figures and scenes are not simple depictions of everyday life. The artists are clearly communicating aspects of their cultural beliefs, with an emphasis on important animals and interactions between humans and other humans or animals. Indeed, animals are much more common than in the Dynamic Figure style rock art in terms of percentage of subject matter, as most Dynamic Figures are human, almost 89% (May et al. 2018:71; Taçon and Chippindale 2008:77), whereas only about 42% of Maliwawa Figures are human. Animals also feature in scenes with humans more than is the case with Dynamic Figures and in some instances almost appear to be participating in or watching some human activity. This occurrence, and the frequency and variability of headdresses, suggests a ritual context for some of the production of Maliwawa rock art, as has been argued for Dynamic Figures (Johnston 2018). For Dynamic depictions of the Jabiluka study area, 18 headdress types were identified (Johnston 2018:204), while 10 have been identified for Maliwawa Figures. Of the 209 complete Jabiluka Dynamic human figures, 71% have headdresses (Johnston 2018:199) while only 30% of 240 Maliwawa Figures have headdresses (72 human figures). The frequency and range of material culture illustrated is much less for Maliwawa Figures. Jabiluka Dynamic Figures were depicted with 15 different types of material culture (Johnston 2018:197) and 93% of Dynamic Figures have material culture, while 34.58% of Maliwawa Figures have material culture and are shown with only four items (headdresses, spears, bags and a boomerang). These patterns indicate a shift in iconographic emphasis for communicating with rock art away from material culture in favour of animals. The diversity of fauna and scenes suggests Maliwawa Figures were used to communicate many different sorts of information.

In summary, 572 Maliwawa paintings were recorded at 87 northwest Arnhem Land rock art sites. Large naturalistic humans and macropods are common subjects but animals were more often depicted than human figures. They are painted in various shades of red with stroke-line infill or outline forms with a few red strokes as infill. Maliwawa Figures are depicted with little material culture other than various forms of headdresses. Maliwawas are depicted as solitary figures and as part of group scenes showing various activities and some may have a ceremonial context (Figure 16). But was the Maliwawa rock art sporadic and made during a short time period or did it continue over a long period of time? We know from the work of recent rock art artists, such as Nayombolmi, that individual rock art artists can produce a remarkable number of paintings in their lifetime. Nayombolmi himself is known to have produced about 650 paintings at around 50 sites across a vast landscape and including in Country for which he was not a Traditional Owner (e.g. see Haskovec and Sullivan 1989; May et al. 2019; Taçon 1989). With 87 Maliwawa sites documented to date, we cannot rule out the possibility that Maliwawa rock paintings were produced by a small number of artists (see Johnston et al. 2017). It is even possible only a couple of artists made most of the paintings, with one responsible for the more outline forms with minimal infill and another creating much of the fuller stroke-line infill examples. For instance, outline bird depictions with minimal stroke infill at an Awunbarna site are almost identical to others at Djulirri in the Namunidjbuk estate, about 100 kilometres away (Figures 17 and 18). At the same time, much art produced after the Maliwawa style demonstrates a remarkable consistency in the manner of depiction and a significant increase in the standardisation of some subject matter (i.e. X-ray fish). So, perhaps what we are observing is increasing standardisation in the manner of depiction after the period in which Dynamic Figures were made. This has implications for rock art research everywhere in which a style or
manner of depiction is suggested to have been made over hundreds of years or millennia.

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