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UNDERSTANDING GEOMETRICAL FEATURES OF NUAULU SHIELD DESIGN

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Abstract:	This paper seeks to elucidate the form and function of decorative designs on Nuaulu parrying shields from Seram, Indonesia. It builds on earlier work focussing on the shield as a sacred anthropomorphised entity with its own life-cycle, the reproduction of which mirrors the reproduction of sacred houses. It has previously been suggested that diversity in design elements is deliberately cultivated as part of a general aesthetic, connecting individuality, personhood, and effervescence as features of living entities. Here I examine the materiality of shields, documenting variation in design - especially patterns of ceramic and shell discs - and ask what significance we should attach to these. I conclude that the attribution of specific meanings to individual elements is of limited application, while the impact of the shields lies in variation itself, the perceptual affects shields have on viewers, and in abstract geometric characteristics that make them fit for ritual purpose.

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UNDERSTANDING GEOMETRICAL FEATURES OF NUAULU SHIELD DESIGN

INTRODUCTION

In the Tradescant cabinet of curiosities, now part of the Ashmolean Museum in Oxford, there is a shield that for a long time was poorly provenanced, but which is now known to be a parrying shield from the Moluccan islands (Figure 1), and probably the first example of Indonesian art to find its way into a British collection. Despite this, there are few studies of shields of this type that place them in their cultural context and subject them to the scrutiny of anthropological approaches to the understanding of art objects. We can see from museum collections and published illustrations that the distinctive form of the Moluccan shield varies throughout its distribution, though remaining recognizably based on the same underlying theme. Shields from Seram appear to be the largest of this type, with the least exaggerated sectional curvature and waist to tip width ratio (Figure 2), while shields from Halmahera, Buru, Banda and Ambon-Lease tend to be smaller, and with a more exaggerated sectional curvature, and waist to tip width ratio (Martin, 1894: v2, table 30, figure 5; Juynboll, 1930-1; Visser, 1917).

In this paper I shed light on the form and function of designs applied to this kind of shield as it is found among the Nuaulu people of Seram, and build upon two earlier papers for which it was a focus. In a paper published in 1990 I was concerned with the shield as an anthropomorphised entity - indeed as a 'fetish' (----, 1988), with its own life-cycle, the reproduction of which in turn mirrored the reproduction of sacred houses. The focus was, consequently, on the making, the connections between the living wood from which the shield was extracted, and its role as a sacred object with a life of its own which needed both respect

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and protection. I argued that the shield 'embodied' the continuity of the sacred house where it dwelled as well as the biosocial reproduction of the clan that guarded it. In a second paper (----, 2017) I have suggested that diversity in design elements comprising shields is deliberately cultivated by Nuaulu as part of an aesthetic connecting individuality, personhood, and effervescence as features of living entities. In the present paper I examine the materiality of shields, documenting variation in design - especially patterns of ceramic and shell discs - and ask what significance we should attach to these. I conclude that while the attribution of specific meanings in a semiotic sense, for example as developed by Munn (1966), is of limited application, the significance of the shields lies in the variation itself, the visual affects they have on viewers, and in abstract geometric features that make them fit for ritual purpose.

FIGURE 1

ETHNOGRAPHIC CONTEXT AND METHODS

The Nuaulu are a people of south central Seram numbering over 2000 in 2012, most of whom still actively practice traditional rituals, informed by a view of the world that can be described as animist and in which the veneration of ancestral spirits is central (----, 2012). This is achieved through the conduct of elaborate ceremonial cycles focussed on life crises and the building of clan houses and other sacred houses shared by clans inhabiting a single settlement. Formerly, head-taking was an integral part of this complex of belief and practice, though despite the occurrence since 1990 of several 'head-taking' episodes in the context of modern communal conflict (----, 2002), it is no longer a core feature, and publically repudiated by most Nuaulu (----, 2014).

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The data on shields (*aniaue*) used in this study comprise objects collected in the field during 1970-1 (and now in the British Museum and at the University of Kent), objects drawn and described during fieldwork in 1970-1, and objects photographed during fieldwork between 1970 and 1996. While in the field, I did not systematically document all shields I encountered. This would have been impossible. The main focus of the present analysis are 24 shields that I judged to be sufficiently well described in my notes for such a purpose. The designs on the front of these have been re-drawn from photographs and field notes and simplified to bring them to publishable standard (Figure 5). The data on this set were acquired as opportunities arose, in 1970, 1971 and 1973 and although these do not constitute a scientific sample, I believe them to reflect the diversity in design found throughout the Nuaulu area at the time they were described. Some contextual data are provided in the Appendix, which shows them to come from three different villages and seven subclans. Three of the 24 shields were unfinished, and so have not been used for an analysis of the final design features. They have, however, been incorporated into other aspects of the analysis. Apart from my own field data, there are no shields in public collections that can be provenanced to the Nuaulu with any certainty, though many that are probably of Nuaulu origin. I have checked collections in the Netherlands (Rijksmuseum voor Volkenkunde in Leiden, the Tropenmuseum in Amsterdam and Museum voor Volkenkunde Rotterdam), and in some cases there are shields that closely fit the descriptions provided here. Moreover, some published works refer to shields from Seram and include drawings and photographs (e.g. Martin, 1894: plates 8, figures 27 and 30: see Figure 2 here) that are relevant to this analysis.

FIGURE 2

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THE GENERAL FORM AND MAKING OF SHIELDS

Nuaulu shields (Figure 3) are 'oblong curved' and made from a single piece of *kawasa* wood, *Archidendron clypearia* [syn. *Pithecellobium clypaenia*], a tree reserved for shields and certain other sacred objects. Another closely-related species (*nisoae*), *Falcataria moluccana* [syn. *Albizzia falcata*), is also sometimes used, described in Ambonese Malay as 'kayu salawaku' (shield tree). C*lypearia* – meaning shield - derives from the Latin name given to both species - 'Arbor Clypeorum' - by the seventeenth century naturalist Rumphius (2011: v 3, 87-90), who had seen them on Seram. The details of the 16 shields documented in the field during 1970-71 have already been published (----, 1990: table 1). The present study adds a further eight to the series (see Appendix). The average size, based on this corpus, is 111.15 cm long, 11.09 maximum width and 8.94 minimum width, giving them a slight waist. Looked at sideways (Figures 2 and 3c) the face exhibits a degree of convex vertical curvature, and in section the face exhibits convex horizontal curvature. Of the six shields measured for thickness, this was uniformly 1 cm. The specimen now in the British Museum (Figure 3a) weighs 640 grams and that at the University of Kent (Figure 3b) 500 grams, which I judge to reflect the range. Thus, the shields are light, as befits a parrying war shield and shields used in dancing.

FIGURE 3

The edge of each shield is often finished with a strip of split fine rattan (Figure 4), and secured with small metal tacks roughly eight centimetres apart, though in one case the fixing constituted tiny wooden pegs and pieces of wire. All rattans were identified as species of *Calamus,* though of varying folk-taxa (*meu hehue*, *meu nunte, meu wasaura, meu kania uwa* or *meu kania tonu*) of undetermined species. In a few cases the rattan was painted in a way

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consistent with (and an extension of) the overall pattern and colour scheme on the front of the shield.

The reverse side of most shields has a central ridge running from top to bottom (mean W = 1-1.5 cm). At the upper end of the ridge is a hole (sometimes displaying a fibre loop) to enable the shield to be hung on a peg inserted on an internal house wall. The same hole may be used to attach (five instances in the group examined) a short length of pineapple fibre (*sesene*: *Ananas comosus*) binding a piece of red cloth (*karanunu*, Ambonese Malay (AM) 'kain berang') containing AM 'halia' (***soie***: various species of ginger, including *Zingiber cassumunar*, *Z. papuanum* and *Globba marantina*), and sometimes the head-crest feather of a salmon-crested Moluccan cockatoo (*nakatua putie: Cacatua moluccensis*). This is a charm to protect the shield and its user (Figure 4). Half way down the back of each shield the central ridge morphs into a handle (termed in this instance *ai muniai* - literally 'placenta of wood' rather than the usual words for handle - *kaie* or *maine*). The handle is characteristically decorated with a stepped or ridged edge and sometimes with a geometric incised pattern (Figures 2 and 3b).

FIGURE 4

The 1990 paper discussed in detail how shields were fashioned and by whom. On the occasion that a particular sacred shield is extracted from a *kawasa* tree, other 'offspring' shields will be cut from the same tree for other members of the clan or sacred house, most of which are completed gradually over a period of time. One of the main points of this earlier paper was to show how shields were treated anthropomorphically at every stage in their production and throughout their social lives, and how reproducing sacred shields not only mirrored but was an intrinsic part of the reproduction of sacred houses. The first chip to be

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cut from the tree when making a sacred shield, is treated as the breath and the soul of the wood and is re-united with the completed shield in the storage loft of a sacred house where it normally resides. A similar chip is carefully stored whenever a new house or outrigger canoe is built. It is believed that if the 'soul' is not kept, the boat will sink, the house will not be strong and the shield will provide no protection. Such practices mirror similar protocols observed when hunting, for example the chip taken when preparing a skewer on which a pig or cuscus is transported and prepared.

Although all adult males may own one or more shields, certain individuals are regarded as particularly experienced and appropriate when it comes to their manufacture, though this tends to be for their ritual expertise and understanding of correct process rather than because of their physical carving or decorating skills. Many persons maintain that they are unable to make shields – 'they do not know how' – and this means that for example in the case of the Matoke-pina clan in Rouhua, the clan chief Iako spends much time making them for others. In 1970 when I interviewed him on the subject, Iako had just completed one for Tapone, chief of Sounaue-ainakahata. Iako explained to me that if a sacred house had four shields, then two could leave, but at any one time two must be allowed to remain; if there are three then two must remain and one is only allowed to leave; if there are two then one must stay, though one may leave; but if is only one then it must never leave. The making of shields occurs when prompted by their being required at certain times in the ritual cycles that culminate in the performance of *auwoti* dances, which traditionally preceded head-taking raids. The making of shields may also be prompted by recognition by elders that an old *aniaue monne* (sacred shield) needs replacing. It then becomes a major preoccupation for a small group of older men until the work is finished, which may take some months.

FIGURE 5

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DECORATION AND USE OF COLOUR

Before considering those decorative materials and paintwork that are added to the wood, it is necessary to mention one carved feature of the face of the shield which provides - as it were - an outline template, and which may influence the application of ceramic or shell discs and paint. These are narrow ridges (*muneka*) that run from top to bottom. Of the 24 objects in Figure 5, two have no ridges, eight have one ridge, two have two ridges and 12 have three ridges. Where insufficient wood has been left to produce ridges, grooves may sometimes suffice. Where there is a single ridge, this runs vertically down the centre of shield, mirroring the thicker ridge already described for the reverse. Where there are two ridges, these vertically bisect each side of the shield defined by an imaginary central line. Where there are three ridges, one runs vertically along the central line and two vertically bisect each side of the shield. In both the two-ridge and three-ridge shields, the vertical ridges bisecting each side curve slightly at the top and bottom such that the beginning and end points are the top and bottom corners of the shield. Two of the three-ridge shields belong to Marpati Sounaue and another to Hatarai Sounaue, suggesting that this is a style specific to the clan Sounaue-ainakahata. In the shield of Sahukone Neipani-tomoien the single ridge is unusually broad (at 2.5 cm). Although these variations seem to match traditions passed down by makers from previous shield templates (for example the three-ridge pattern is certainly transmitted inter-generationally between makers in Sounaue-ainakahata and Matoke-hanaie), there is an insufficiently strong correspondence to suggest that these are associated with different clans or sacred houses.

The most salient feature of the added decoration is the use of small pieces of broken glazed ceramic plate as inlay, in a few cases substituted with pieces of chipped shell of the cephalopod *Nautilus pompilius*. This latter is known in Nuaulu as *nakatua saha* (literally 'the

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cockatoo husband of a pre-childbearing woman') and in AM 'kakatua laut', both named on account of the resemblance between the shell of the *Nautilus* and the cockatoo beak. Feathers of the salmon-crested cockatoo and *Nautilus* shell are often paired materials in Nuaulu sacred objects, as in the shield described here, and in the head-dress (*orane*) worn by male guardians of clan sacred houses. In one shield two pieces of *Nautilus* shell had been attached to either side of the handle grip on the back of the shield. The prepared chipped pieces (*kikau*, or *kika huna* [lit. 'moon *kikau*']) are roughly circular and of 1-1.5 cm diameter (BM As. 1.175). The British Museum ceramic fragments are all but one from a red decorated white vessel, but most are pure white. Most are made from cheap twentieth century china plates, though in one case there was use of what was clearly nineteenth century blue English Staffordshire 'willow pattern'. The fragments are fixed to the shield using resin, though in some cases also pitch from the inside of batteries. The 24 shields described had between 26 and 100 *kikau*, with an average of 70. Most shields had 60-70, and five over 90.

Colouring matter is predominantly purchased oil paint applied with a small stick, though its tendency to present a matt finish is perhaps due to exposure and the practice of thinning paint with paraffin or coconut oil. In all finished specimens, paint was applied to the front of the shield. Application of paint to the back (or edges) varies. Eleven shield backs were completely plain, in two there was a continuous zig-zag in red, in one an incomplete zig-zag on an otherwise plain ground, while in three there was a more complex pattern: diamond-shapes depicted in four colours (black-green-yellow-red), zig-zags in yellow-green-red, and one with red semi-circles and loops with yellow and green infill, and a red triangular infill along the incised geometric pattern of the central ridge (Figure 5-18).

Painted work on the front of shields is essentially secondary 'infill' between *kikau*, reflected in the order in which the work is undertaken, in the explanations provided by makers, and in how the shields are said to be effective in contexts of use. These additional

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design elements are mainly lines (curved and straight), zig-zags, concentric semi-circles and loops, other geometric shape such as crenellations, rectangles, diamonds, triangles, some crosses, a few animals and humanoid figures, combined with blocks of colour. Colours used include black, blue, green, yellow and red. In three cases there is a combination of four colours (green-yellow-red-blue, and black-red-yellow-green (Figure 5-18, 5-23 and 5-24), but in most there are combinations of three colours: red-blue-black (three cases), black-yellow-black (two cases), and one case each for red-yellow-black, red-green-black, red-blue-unpainted, and red-yellow-unpainted. Some shields use a two-colour combination: red-blue, red-unpainted, red-green and red-black, and one unpainted. Thus, red is the most common colour, appearing in 14 painted shields, followed by black (eight cases), blue (six cases), yellow (five cases) and green (three cases). As with ridge patterns, it is possible to see colour use associated with particular makers and sacred houses (e.g. red-blue-black is particularly favoured by Iako Matoke-pina, while black-yellow-red is associated with Hatarai and the Sounaue-ainakahata *kapitane* sacred house, both in Rouhua). Nevertheless, it is difficult to see colour combinations correlating clearly with clan differences. In a few very old sacred shields (e.g. Saute Neipani-tomoien (Appendix, Figure 5-10) the paintwork is obscured by ingrained dirt. Overall, patterns represent variations on well-established and stylized themes.

THE MEANING OF DESIGN ELEMENTS

A repeated response to my questions about the 'meanings' of shield designs was that they were purely 'decorative'. For Hatarai Sounaue-ainakahata, it was important that shields 'looked good', so that when there is an *auwoti* dance people would look and say 'what a fine shield'. Menai Sounaue-ainakahata seemed rather uncertain whether or not the patterns on his shield had meaning, and after I had suggested to him that the zig-zag might be a snake he agreed, at first unconvincingly, but afterwards went round telling everyone else. Komisi

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Soumori was more expansive, saying that individuals may give their own meaning to shields but he did not always know them. Later in the same conversation he was able to 'identify' patterns on other clan shields for my benefit. Iako Matoke, who oversaw the making of shields on the occasion described in my 1990 paper, said that the designs used in making the replacement Matoke *aniaue monne* were new and 'out of his head'. He had also fashioned them with particular people in mind and identified the potential owner of each. Where several elders are actively engaged in creating shield designs, they will share opinions about the appropriateness of different design elements and their meaning, but some elements may only have meaning for the makers themselves. Such apparently ad hoc and sometimes contradictory attitudes are consistent with the more widespread absence of a discourse about meaning and a reticence in offering interpretations of ritual practice (---- 2012: 14-16, Valeri 1994), a deference paid to elders in such matters, and a lack of verbalisation more reminiscent of New Guinea art production (e.g. Forge 1965, O'Hanlon 1992, Sillitoe 1980). A consequence of this reticence is the down-playing of iconography and an appearance that the expressive power of shield designs is more important than semiosis.

So, Hatarai's statement would seem to be largely accurate. Nevertheless, there are some quite specific features with undeniable articulated meaning. For one thing some of the infill elements are named (e.g. semi-circles are described as 'half moons' (*hunane siaie*), and zig-zags as 'snakes' (*tekene*), while the most salient elements with transparent meaning are occasional totemic animals. Thus, in Figure 5-7 we can see a split representation of a male marsupial cuscus - *Phalanger (Spilocuscus) maculatus* (*mara makinete*) - the primary totem for the subclan Sounaue-ainakahata (----, 1972). Another shield (Figure 5-1) has a monitor lizard (*puo*: *Varanus indicus*), the primary totem for the clan Matoke (and also a secondary totem for Peinisa, Pia and Neipani-tomoien), and another (Figure 5-19) the crocodile (*puha* (*Crocodylus porosus*) totemic for Sounaue-aipura, Sopanani and Matoke and Huni, though in

no case apparently a primary totem. On Waenisa's shield the zig-zag is said to represent *teke patona* the reticulate python (*Python reticulatus*), the primary totem of the clan Soumori, the clan of his wife. Similarly, of Patioka Sounaue-ainakahata's shield (Figure 5-2, 5-4, 5-14), Komisi said the pattern represented the scare charm (*wate*) *nutu inae*, which Patioka adopted from the clan of his wife (Neipani-tomoien) on marrying *iai nisi pina* (that is by agreeing to reside uxori-patrilocally and undertaking work for his parents-in-law in exchange for reduced marriage-wealth). Thus, design elements are not only derived from the imagination of the maker or from a stock directly associated with the clan for whom they are made, but may be acquired through affinal transmission. Other shields (not depicted in the sample examined in detail here) carried an image of *enu* (the marine turtles: *enu ikae*, *Dermochelys coriacea* and *enu hunane*, *Eretmochelys imbricata*), totemic for the sub-clan Neipani-tomoien (----, 1998). Rather differently, Lihuta Matoke-pina explained that the crosses on his shield (Figure 5-20) were *unai nuae* - star fish, and in one case - that of Aipinua Matoke-hanaie - there are schematic human figures (Figure 5-1). Colour combinations are attributed with no particular meaning, though as with all features of the shield are applied to achieve the most dazzling effervescent effect possible, with plenty of contrast (Morphy 1989, Gell 1998: 23, 72, 94 and passim). In a few cases colours selected may reflect no more than paints available in the nearest shops of Sepa, Tamilouw, Amahai and Masohi. Thus, apart from these specific instances, we might concur with Boas (1927: 279) that:

> it is not possible to assign to each and every element ... a significant function, but that many of them are employed regardless of meaning, and used for purely ornamental purposes.

THE FORMAL GEOMETRY OF DESIGN

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Figure 5 shows a series of simplified drawings of 24 shields illustrating variation in patterns formed from ceramic and *Nautilus* shell discs, with added lines and blocks of colour. It was Boas who first systematically drew attention to symmetry, rhythm, geometrical forms, and particularly bilateral symmetry (between left and right) in traditional art, in which he saw a reflection of human body organisation. We know that Nuaulu shields are anthropomorphized and treated as human bodies, with a correct orientation (a head and a foot) and bilateral symmetry (----, 1990 cf. Boas, 1927: 279). Boas had observed (p. 33) that symmetrical arrangements to the right and left of a vertical axis are much more common than above and below a horizontal one, but in Nuaulu shields above-below symmetry is almost as significant as right-left symmetry. In other words there is a quadripartite structure with matching halves and matching quarters (Milner, 1971), reminiscent of the 'quartered shield' of European heraldry (Neubecker, 1976).

FIGURE 6

Boas' observations and his admission of the difficulties of fully explaining symmetry (especially in terms of bodily movement, or the regular physical motions and rhythms induced or required in executing particular techniques of manufacture) were to some extent resolved in Lévi-Strauss's (e.g. 1963) structuralism, in which they become simply another manifestation of the binary principle and its transformations in human thought, ultimately reflected in the organisation of the brain. Boas (1927: 63) saw that the geometry of visual art finds parallels in the oral arts, in music and in dance, which would be later vindicated by work in structural linguistics, oral literature and symbolism, particularly in a large body of ethnographic work conducted in eastern Indonesia (e.g. Adams, 1973, Fox, 1988). And Boas (p. 34) also sought parallels in the geometry of the natural world, echoed in the

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mathematically sophisticated demonstrations of his contemporary, the theoretical biologist D'Arcy Wentworth Thompson (1961), more recent insights derived from crystallography (Washburn and Crowe, 1988), but limited when compared with what we now understand about symmetry and laterality as a basic condition for the organisation of life and the physical cosmos as a whole (e.g. Hargittai, 1986), including art forms (Washburn, 1983). Boas (p. 36) noted that objects frequently seen from different sides are symmetrical in several dimensions (up and down, above below, back and front). He uses the example of aboriginal Australian shields, but it could just as well have been Moluccan shields of the kind described here.

Nuaulu shields also provide examples of the complex rhythms of sequencing elements in patterns that Boas discusses. So, in Figure 5, 18 shields display complete upper-lower left-right symmetry in terms of *kikau* arrangement, while six display partial conformity to upper-lower left-right symmetry. In the first group, one of the simpler arrangements is 5-3, which might be expressed numerically as 2 [2(3) + 2(8) + 2(3)], where the initial '2' indicates that the pattern within the square brackets is repeated twice (on the upper half and on the lower half). Within the square brackets is an expression for each group of *kikau* moving down the shield to the central point. Thus 2(3) indicates a row of 3+3 (three *kikau* on the left and three on the right), then 2(8), a group of four rows with left-right symmetry, and finally a repeat row of 3+3 with left-right symmetry. The lower half repeats the pattern, but as a mirror image. Variations in patterns can be summarised using different expressions, such as 2[{2(3) + 1} + {2(3) + 1} + 2(7) + 2(2)] for shield 7, and 2 [2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) + 2(2) +2(1) + 2(1)] for Shield 5-11. Of the second group of six shields partially conforming to upper-lower symmetry, the simplest is Shield 5-1, expressed as [2(2) + 2 + 2(3) + 2(10) + 2(2)], and among the most complex Shield 5-24, expressed as [2(2) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1)] + 2(1) + [2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) + 2(1) +

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2(2)]. This notation allow us to reduce to a linear form the geometrical properties of *kikau*, compare overall arrangements on different shields, and get some sense of numbers of *kikau* used and of variation.

Insofar as the application of paint 'infill' follows the template established by the *kikau*, there is also symmetry in terms of line and colour. This fit can be seen, for example, in Shields 5-3 and 5-24. However, this is not always the case, as can be seen in Shields 5-13 and 5-19. This is likely because, in terms of contemporary Nuaulu aesthetics, the qualities that are important are effervescence, brilliance, and colour itself, rather than individual hues or combinations, both line and colour being subordinate to the pattern of *kikau*. Whether earlier shield-making, which depended on a more limited range of naturally sourced pigments, was any different, is difficult to tell.

Given the optimal separation between elements on all shields, it would be theoretically possible to work out permutations, but despite the artist's objective and social expectation that each shield will be 'unique', the number of variants at any one time is always considerably less than the number of possible permutations. If we look at design regularities in Figure 5, in almost all shields the pattern on the lower half is a mirror image of the upper half, while the right half is a mirror image of the left half. It is usually where there is a totemic motif that this is prevented, and then only the upper-lower dimension, as the split representation used for animal images is consistent with right-left laterality (Lévi-Strauss, 1944-5). This underlying symmetry reduces the possibilities for variation by up to 75 percent, as one quarter of the total design is virtually identical to the other quarters.

VARIATION, RITUAL EXACTNESS AND COMBINATORIAL LOGICS

In any array of Nuaulu shield designs we can see variation in the combination of colour elements, totemic animals depicted, and most significantly in terms of combinations of

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ceramic or shell pieces. As we have seen, one axis of variation is in terms of the number of vertical ridges carved into the wood before the rest of the design is applied: no ridge, one ridge, two ridges and (most commonly) three ridges. A second kind of variation – and the most important in terms of Nuaulu aesthetics - is the number and combinatory patterns of *kikau* embedded in the face of the shield.

Thus, although heavily formalized, every shield has a unique design that is the outcome of a deliberate and thoughtful process of creativity. While the framing style elements are apparent, within these formal limitations considerable variation is possible. I have yet to see two shields that are identical, and like Nuaulu personal names, duplication within a clan at any one time would be to risk misfortune. In a sense, shields, especially ritual shields, which as we have seen are highly anthropomorphised, are like the tattooed body, in which the design becomes intrinsic to the embodied person, and therefore an expression of individuality. It would not do for everyone, or every shield, to be alike, and beauty lies in continuous striving for variety and difference, reinforced by taboos on reproducing identical designs. The word *marainie* is the best gloss we have for 'beauty' when applied to objects, but it also means 'dazzling'. It is also worth noting that what is good, right, proper and beautiful can all be expressed as well in the single word *iake*, an expression of true appreciation taking the form of *iake tunne*, or *iake nya* - 'it is the very best'.

There is pride shown by an artist in the originality of a shield design, but that originality must not overstep itself, and must be a recognizable variant within the system of variations. Hotena came to see me on one occasion, asking if I had any old glass, as he was minded to use glass instead of white crockery sherds, so that his shield would stand out from the others in the *auwoti*. I do not know whether he ever utilised glass fragments, but even in considering it he was dangerously close to the limits of what is conventionally acceptable. It is common for other ritual specialists, in other clans and especially in clans where there is

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historic disagreement over ritual practice, to criticize art objects for being insufficiently authentic or just 'mistaken'. During the making of a shield (which may be spread over many months) there is a constant mutual exchange of advice, assistance and admiration. This is usually within clans or along affinal links. But there may also be criticism. The discussion is usually about dimensions, quantity and layout of sherds, colour-scheme, rim-formation, pattern contrast and elements, similarity and difference from others, originality, and failure to conform with an accepted standard pattern. There seems little direct regard for aspects such as finesse, finish, quality of paint. Paint is often uneven, lumpy – spaces of bare wood are left, paint is dripped over paint of another colour, paint overlaps parts of design that should be another colour etc. The exactness required by the ancestors is less metrical, or geometrical in the sense that might be necessary in precision engineering or exemplified in the clean lines and grids of a painting by a mature Piet Mondrian, but rather a relational or topological exactness in which all the expected elements are present in a correct arrangement with respect to each other. This is the sense that matters profoundly to living Nuaulu, and is expected in sacred objects by ancestral minders. We might call this a ritual exactness: all the elements in a previous design have to be there, though do not have to be perfectly executed, but if there is an error there may be consequences in the subsequent performance of ritual (including dance) or in the lives of the individual artists and members of their clan who consume the art. Ritual exactness in the making of shield designs is important to Nuaulu aesthetic appreciation. In the context of performance in dance or in static display this does not directly influence aesthetic effect, or necessarily the expressive effect on those unaware of the mistakes, but knowledge that some aspect of the process of creation was incorrect influences the aesthetic judgments of others. If it is isn't made properly, then it cannot look right!

The expectation of topological exactness is most obviously displayed in relation to

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number and arrangement of *kikau*. As we have seen, I follow Boas's (1927: 39-54) experiments with formal notations in making sense of the regularity of patterns in terms of elements and colours, and have provided numerical expressions for *kikau* combinations of each shield design in Figure 5. Not every dimension of variation is included, and although the expressions could be further arithmetically simplified, the form used best indicates visual variation. For the first group of 18 designs there is complete upper-lower symmetry, and in the second group of six designs upper-lower symmetry is incomplete. But even in the second group, and although sometimes paintwork deviates from this ideal (e.g. Shield 5-13), the overall effect is upper-lower symmetry, and always right-left symmetry in the arrangement of *kikau*, It is these symmetries that contribute to the lively animated appearance of the shields during dance, creating visual effects as the eye seeks to make sense of the *kikau* pattern as a whole, moving between different alignments of discs, in addition to the way light is reflected on the same creating glitter and brilliance. In the dimness of the dawn when *auwoti* is performed, any iconographic meanings are largely irrelevant.

This concern with precise numbers is found throughout Nuaulu ritual, where the quantities of items required and the times a performance or utterance is enacted must be precise, usually in fives or combinations of fives, reflecting Nuaulu mytho-historical affiliation with the Patalima ('five') grouping of central Seramese peoples in contrast to the Patasiwa ('nine') grouping (see e.g. Valeri, 1989). It is a pattern found in other Nuaulu ritual objects, including baskets, female head-dresses at first menstruation ceremonies and circle dances, and the betel pouches produced for male puberty ceremonies.

DISCUSSION

I have elsewhere (----, 2014) compared variation in the decorative components of shields with that found in baskets, arguably that medium through which Nuaulu decorative arts are

most widely, consistently and obviously expressed (----, 2009). With baskets, a large part of the variation derives from the materiality *and* functionality of the system, baskets being used for a wide range of mundane and ritual purposes. However, with shields the material constraints are stricter, and the functions more limited. All shields are made from the same basic materials. In addition, shields incorporate rattan, ceramic and *Nautilus* shell discs, and nowadays trade paint. Although overall size and shape varies slightly, what we might describe as the general template, the basis for applying design, is always the same.

Also unlike baskets, Nuaulu shields are socially presented in a limited number of contexts. Nowadays, their designs are mainly socially accessible in the context of dances (*auwoti*) performed just as day is breaking (Figure 7), which accompany major rituals. *Auwoti* dances in the past were always a necessary precursor of head-taking raids, and although the practical connection between performance of *auwoti* and head-taking has ceased, resulting in some inevitable 'recontextualisation' (Thomas 1991, O'Hanlon 1995), the dance continues to be performed on the same ritual occasions, as part of the same ritual sequences, that would have culminated in head-taking raids in the past. Other than this, the designs are also seen by others during the rituals involved in their making, and displayed on the interior walls of sacred houses, where in the dimness they are barely visible apart from the glitter of *kikau* afforded by resin lamps. Occasionally, Nuaulu are invited to perform *auwoti* at national celebrations, such as Indonesian Independence Day on 17 August, in which context they are exposed to direct sunlight in a public non-Nuaulu space. Moreover, since 1980 there has been some attempt to produce shields for the tourist market, but with little success (Figure 8). Nuaulu shield-makers are aware of the kinds of object that are appropriate for the tourist market from visits to Amahai and elsewhere where this is more organised (---- 2014) - objects that are brightly-coloured and concede to certain stereotypes of the indigenous 'Alifuru' of Seram being head-hunters. But this market has always been small,

always more potential than actual, and was hit almost fatally by the period of communal conflict in the Moluccas between 1999 and 2003. It has yet to recover. However, even the prospect of the tourist trade, rather than the actuality of a steady stream of tourists, might be seen as establishing a new context of viewing.

In addition, as we have seen, certain shields have an existence 'in themselves' in the sense that ancestral and *monne* obligations require that they be kept as sacred objects (*aniaue monne*) in the semi-darkness of house lofts for generations, and are rarely otherwise seen. These need to be periodically replicated exactly before they decay, in order to preserve the continuity of the sacred house as well as the descent line of its patrilineal occupants.

FIGURE 7

Like basket designs, shield designs are inherited within clans, but within clans designs are expected to be similar. Trees providing timber for sacred shields will also supply wood for up to six other shields, that are regarded as its ‘offspring’, but which are not themselves *monne* (sacred). A sacred 'mother' shield does not circulate, it only endures, but ‘offspring shields' are kept in the ordinary houses of their male owners, who will pass them on to their (usually eldest) sons. Some shields will be made for men in different clans who do not have the skill or knowledge.

While an *aniaue monne* must be an exact copy of its predecessor, the ‘offspring’ shields that are cut from the same tree on the same occasion, or any other shields, may be as diverse as possible. In fact, each shield maker and dancer in the *auwoti* seeks to have as distinctive and as ‘brilliant’ a shield as possible, reflecting the range of aesthetic appreciation embodied in the Nuaulu concept of *marainie*, the decoration enhancing the shield as a 'living thing', making it - as it were - more 'alive' (Gell, 1998: 76). There is little doubt that *kikau* are

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the most significant aspect of shield aesthetics. It is their glitter (*bu-buane*) and brilliance or effervescence (*kaie*) that dazzles and has the most visual effect amongst dancers, onlookers and admirers, and which contains most spiritual potency. In the context in which *auwoti* are performed - the crepuscular zone of dawn following a night's *kahuae* dancing - the paintwork on shields may not be clearly visible. However, *kikau* not only reflect the early sunlight available, but produce a shimmering effect with the optical qualities - movement, vibrancy and 'retinal titillation - of pointillism, optical art and Damien Hirst's spot paintings, involving the 'dynamic grouping' of equally spaced dots as the brain continually re-organizes them into rows and columns (Gregory, 1998: 6-7), ' unstable and dynamic' patterns creating 'the illusion of movement' (Morphy 2009: 12, following Gell). Painted motifs, by comparison, are applied within the framework set up by the distribution of ceramic pieces, as secondary infill between the more important parts of the pattern. Glitter, and diversity in elements producing the effect, is a quality that is important in other ritual objects that feature in performances, such as *tasi matahenne* (betel pouches used in male puberty ceremonies), *senie pinamou* (head-dresses worn by girls during first menstruation rituals and in *kahuae* circle dances), and the conical hat (*nasa*) given to woman marrying in to the clan Soumori, and the blouse (*papite*) worn by women at the same ceremonies.

FIGURE 8

CONCLUSION

This analysis has been concerned with 'the presented object, rather than the represented symbolic meanings' (Gell 1992: 43). While iconography and the semantics of paintwork on Nuaulu shields are important, meanings are not always systematically articulated or readily visible, the dominant aesthetic in 'multiple contexts of viewing' (Morphy 2009: 14) being that

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associated with geometrically arranged ceramic or Nautilus shell fragments. With this in mind, I have developed the idea (----, 2014) that Nuaulu cultivate diversity of particular cultural objects, and support this by investing in a relevant sensibility. This has been demonstrated for the Nuaulu parrying shields, where the underlying aesthetic is grounded primarily in the use and arrangement of shell or ceramic pieces. The arrangement of the pieces is consistent with a strong binary logic and notions of topological or relational exactness, which are important to their ritual efficacy. The ways in which the ceramic or shell elements are arranged recall observations made by Boas on the formal properties of design, and provide an example of kinds of patterning and art objects not obviously covered in theoretical syntheses on symmetry (e.g. Washburn and Crowe, 1988). However, the immediate effect of the shields in performance and display contexts is in terms of brilliance and glitter and dazzle. Although these features are exemplified here in terms of shield-making, similar patterns and processes can be seen in the design features of other domains of material culture.

Nuaulu plastic art is distinctive in having no developed figurative or narrative tradition, though stories may be associated with particular motifs. In its absence, creativity is expressed in geometrical form, most extensively in basketry and shield design. While Nuaulu shield design finds parallels in the principles by which other Nuaulu activities are described, organised and performed, I follow Adams (1973) in asserting that this does not mean that the designs 'reflect society', but rather that the same structural principles emerge in art due to their cultural and psychological ubiquity, especially in ritual speech and practice. A similar note of caution is echoed by Fox (1988: 26), when he says that the dyadic components of ritual speech do not necessarily reflect a ‘dualist cosmos’, and is the argument developed by Gell (1998: 216-20) in his re-analysis of Küchler's work on New Ireland Malangan (e.g. Küchler, 1985). Like 'malangan', Nuaulu sacred shields 'transmit agency between past and

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present' (Gell, 1998: 226); unlike 'malangan' they in theory last for ever, repeatedly replicated through time.

Rather than a systematic semiosis of specific references in the patterns, apart from a few meanings translatable into language (mainly totemic animals), significance is mostly attached to geometric patterns. It is important for art producers and consumers alike that such patterns are 'correct' (as there may be ancestral punishment if they are not), but combinations of *kikau*, colours and other components have few 'meanings' (either locally attributed, or plausible scholarly interpretations). While there is a strong sense of shared significance, there is little semantic complexity, a point on which Boas may well have concurred. Yet as with knots (Küchler, 2001: 59), the mystical combinatory properties of geometric patterns, and their ability to generate brilliance at critical moments when those patterns are composed of arrangements of material fragments readily reflecting and refracting light, cunningly combines perceptual and affective processes (Gell 1998). In looking at other Moluccan shields - including the Ashmolean shield with which we began our exploration - there is a family resemblance in overall shape and in terms of the prominent use of geometric patterns involving large numbers of shell or ceramic pieces. This suggests similar interpretations for other historic shields over a wider geographic range. Following Thompson (1917), and as a number of anthropologists of art have noted (e.g. Küchler, 2001: 62), this would appear to further illustrate the generative capacity inherent in the formal properties of geometric objects, and how these properties when seen in art objects are often retained under deformation.

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FIGURE 1 Moluccan Shield, Indonesian (wood and shells), from the Tradescant Collection (AN1685 B.2, Image ID: AMQ 115716 © Ashmolean Museum, University of Oxford).

151x254mm (300 x 300 DPI)

FIGURE 2 Nineteenth century illustration of shields from Seram (Martin, 1894: v2, table 30) showing features that closely resemble those of contemporary Nuaulu shields discussed in the paper.

133x205mm (200 x 200 DPI)

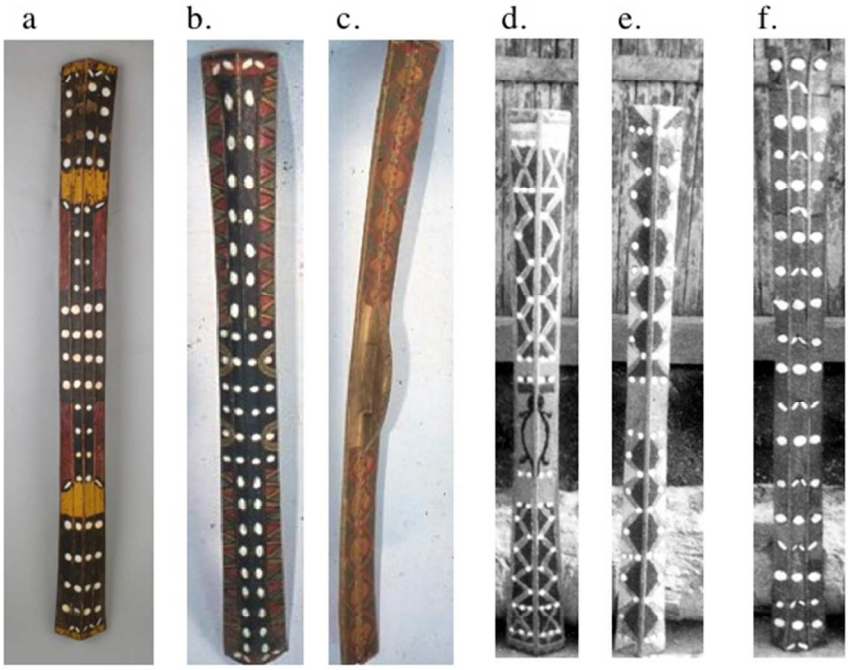


FIGURE 3 Selected Nuaulu shields, collected 1970-71: (a) clan Sounaue-ainakahata, Rouhua (BM As1972, 1.173, image © The Trustees of the British Museum; (b) clan Sounaue-ainakahata, Aihisuru (UKC 1971.563); (c) reverse of previous shield; (d) clan Sounaue-ainakahata, Rouhua (showing schematic split representation of a mara makinete [the male Phalanger maculatus], black on red background); (e) clan Neipani-tomoien, Rouhua; (f) clan Matoke-pina, Rouhua. The images correspond to 15, 18, 18, 7, 17 and 16 in Figure 5.

254x190mm (72 x 72 DPI)

FIGURE 4 Detail of shield depicted in Figure 3b showing hole through central ridge, attached charm and split rattan edging secured with metal tacks.

18x29mm (300 x 300 DPI)

eview

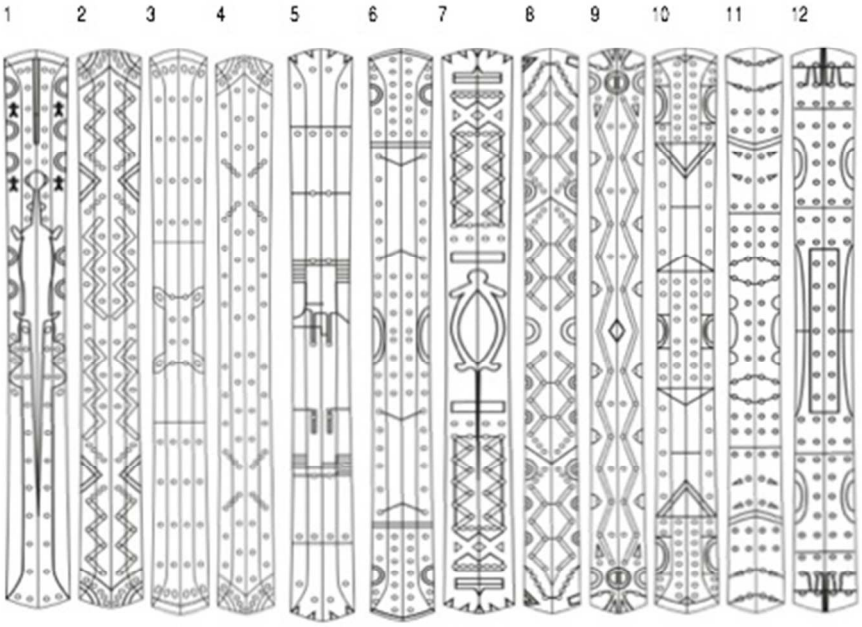
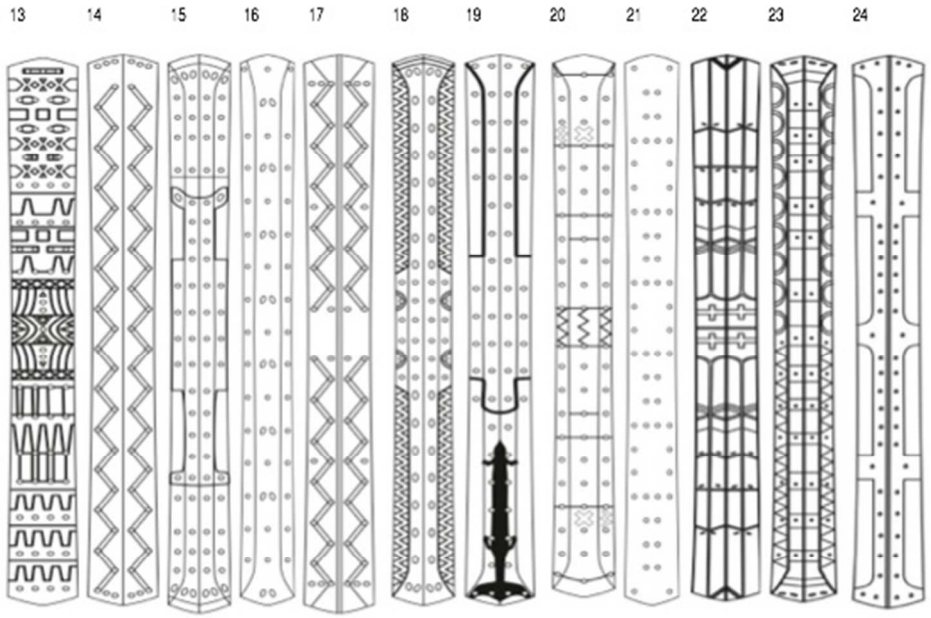


FIGURE 5. Variation in Nuaulu shield decoration. Data are provided in the following order: settlement name, and owner or previous owner with clan affiliation. Further details, including reference codes, are provided in the Appendix. (1) Aihisuru, Aipinua Matoke-hanaie; (2) Rouhua, Patioka Sounaue-ainakahata; (3) Rouhua, Hatarai Sounaue-ainakahata; (4) Rouhua, Patioka Sounaue-ainakahata; (5) Rouhua, Sahunete Peinisa; (6) Rouhua, Iako Matoke-pina; (7) Rouhua, Waenisa Sounaue-ainakahata (Figure 3d); (8) Rouhua, Menai Sounaue-ainakahata; (9) Rouhua, Inane Matoke-pina; (10) Rouhua, Saute Neipani-tomoien; (11) Rouhua, Tuisa Matoke-pina; (12) Rouhua, Tuisa Matoke-pina; (13) Rouhua, Saute Neipani-tomoien; (14) Rouhua, Patioka Sounaue-ainakahata; (15) Rouhua, Hatarai Sounaue-ainakahata (Figure 3a); (16) Rouhua, Saniau Matoke-pina (Figure 3f); (17) Rouhua, Tuisa Neipani-tomoien (Figure 3e); (18) Aihisuru, Nenia Sounaue-ainakahata (Figure 3b); (19) Aihisuru, Manue Matoke-hanaie; (20) Rouhua, Lihuta Matoke-pina; (21) Rouhua, Numapena Sounaue-ainakahata; (22) Watane, Manesi Sounaue-ainakahata; (23) Watane, Marpati Sounaue-ainakahata; (24) Rouhua, Sahukone Neipani-tomoien.

185x135mm (72 x 72 DPI)



210x148mm (72 x 72 DPI)

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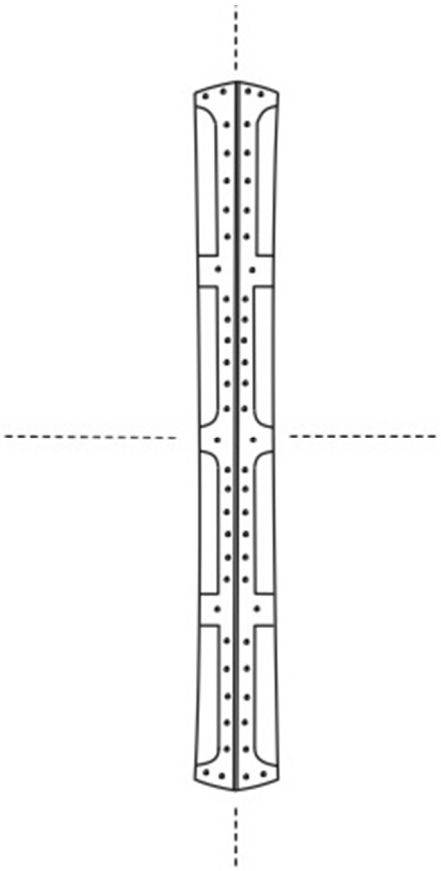

FIGURE 6 Quadripartite structure underlying Nuaulu shield design.

79x152mm (72 x 72 DPI)

FIGURE 7 Auwoti war dance, Aihisuru, 1970.

119x140mm (300 x 300 DPI)

FIGURE 8 An array of shields, betel pouches, wooden parangs and a female puberty head-dress produced for sale by Maineu Neipani-tomoien, Rouhua 1996.

119x84mm (300 x 300 DPI)

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Appendix: Background details on 20 shields included in this analysis

Figure 5 number	Owner	Settlement	L	W (max)	W (min)	Age of shield[1]	Reference code
1	Aipinua Matoke-hanaie	Aihisuru					FN 70-02-24
2	Patioka Sounaue-ainakahata	Rouhua	118	12.5	10	10	FN 70-12-24a
3	Hatarai Sounaue-ainakahata	Rouhua					FN 70-12-24a
4[2]	Patioka Sounaue-ainakahata	Rouhua	106	10	9	< 1	FN 70-12-25
5	Sahunete Peinisa	Rouhua	109.5	11.5	9.2	< 1	FN 70-12-97
6	Iako Matoke-pina	Rouhua	111	13	9.5	20-30	FN 70-12-99
7	Waenisa Sounaue-ainakahata	Rouhua	105	13	9	1	FN 70-13-01
8	Menai Sounaue-ainakahata	Rouhua	116	12.5	5.5	20	FN 70-13-02
9	Inane Matoke-pina	Rouhua	110.5	11	9.5	1	FN 70-10-35,70-12-24
10	Saute Neipani-tomoien	Rouhua	124	12.5	11	10-20	FN 70-14-54, 70-14-55
11	Tuisa Matoke-pina[3]	Rouhua	107	11	8.5	1	FN 70-14-35

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12	Tuisa Matoke-pina[3]	Rouhua	112.5	11.5	9	1	FN 70-14-37
13	Saute Neipani-tomoien	Rouhua	111	13.5	10	50	FN 70-13-09
14	Patioka Sounaue-ainakahata	Rouhua					FN 70-12-25
15	Hatarai Sounaue-ainakahata	Rouhua	117	13	9	10-20	BM □As1972, 1.173
16	Saniau Matoke-pina	Rouhua					FN 71-23-13
17	Tuisa Neipani-tomoien						PHOTO 71-23-13
18	Nenia Sounaue-aipura	Aihisuru	107-9	10	8	10-15	UKC 1971.563
19	Manue Matoke-hanaie	Aihisuru	111	11	9	20-25	PHOTO 70-02-29
20	Lihuta Matoke-pina[3]	Rouhua	109	10.5	9	1	FN 70-14-36
21[2]	Numapena Sounaue-ainakahata	Rouhua	106	10.5	8	< 1	FN 70-12-26
22	Manesi Sounaue-ainakahata	Watane					FN DIAG 70-6
23	Marpati Sounaue-ainakahata	Watane	50				FN DIAG 70-4
24[2]	Sahukone Neipani-tomoien	Rouhua	107.5	11.5	9.5	<1	FN 70-13-05

Notes: 1, age at time of documentation; 2, incomplete; 3, made by Iako Matoke-pina; FN, field note; DIAG, diagram.

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