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RECORDING OF THE LAPITA MOTIFS: PROPOSAL FOR A COMPLETE RECORDING METHOD

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Introduction

Since its first identification some 50 years ago, archaeologists have been trying to find efficient ways to record the construction rules of the Lapita design system in order to investigate the basic characteristics and regional variations of this specific pottery decoration. Although over the decades different methods have been proposed (see Green 1990 for an overview), the often fragmented sherds discovered in archaeological excavations have made it difficult to get a full understanding of the complete decoration structure of Lapita.

Recent discoveries in Island Melanesia of better preserved archaeological assemblages and newly conducted studies of previously excavated collections have, over the last decade, opened a new window on the characterisation of the full extent and complexity of Lapita decoration, and have also helped archaeologists to broaden their analytical methods. Taking note of previous attempts, this paper aims at proposing the basic structure of an enhanced recording method of dentate-stamped, incised and impressed Lapita decorations, providing the analytical tools to recognize, sequence and compare the motif design structures of Lapita pottery, as the first step in creating an online Lapita database linking the different island groups of the Western Pacific.

Previous approaches

After the first pioneering work of Gifford and Shutler in the 1950s (Gifford and Shutler 1956) different archaeologists, art historians and museum curators

have tried to tackle the problem of recording the complex Lapita motifs. A major difference was identified between a western region characterised by intricate designs and an eastern region with more open decorations (Green 1979; Poulsen 1987). Attempts to analyse Lapita motifs have followed three different approaches, partly related to questions of design complexity and pottery preservation.

The first approach, developed especially by Anson, is based on simple visual differences, listing all the variants of a motif and assigning a different number to each one of them, without really grouping them according to any other criteria (Anson 1983). The advantage of this approach is to keep alloforms of a given motif from being lumped into a single motif category that may blur the underlying culturally significant meanings. Yet the numbering of design elements is in most cases random, and so it does not reflect any structural meaning or indicate the relationships among those motifs.

The second approach, developed first by Mead (1975) and subsequently by Donovan (1973) and Sharp (1988, 1991), attempts to not only list motifs and their alloforms but also to group them together according to the different design elements employed. Not only does this approach allow a clear definition of how a motif and its alloforms were constructed, but it also allows comparison of the underlying structural rules used to execute a motif between different island groups. However, this set of rules can only be used to describe the simple supplementary friezes. Due to the limitation of vocabulary in Mead's grammatical system, the approach does not allow coding of the often complex central band motifs present in Western Lapita (see Chiu 2003: 170, Appendix A; Green 1990; Spriggs 1993).

The third approach, developed by Siorat (1990) and followed by Sand (1996) and Noury (1998) in recent years, structures the coding of the motifs by emphasizing the differences between "supplementary friezes" and central "major bands." Siorat's method treats the more geometric supplementary friezes separately from those of the more naturalistic and complex central bands. He successfully classified the friezes through the forms of tools employed to execute the motifs. His attempt to classify central bands with this approach, analysing the central bands as a whole, has been less satisfactory. A first incomplete typology (Siorat 1990: Figures 2–4) was able to clean up several characteristics of the major bands and group them accordingly. Yet without laying out the underlying structural rules employed to create these motifs, the approach leads to innumerable difficulties in terms of recording the more complex central bands. In their attempts to classify and study Lapita pottery from sites of New Caledonia and Vanuatu, Sand (2000, 2001) and Noury (1998, 2000) have employed and further developed this approach. Sand has, for example, differentiated at least ten different themes of central bands and their alloforms for the dentate stamped

Lapita motifs and one category for incised decorations in the New Caledonia repertoire (Sand 1996, 2003).

A step forward: towards the structuring of an integrated recording of Lapita decoration

Previous approaches to answering the question of how to record and classify Lapita motifs and of how to compare them across different island groups have all shown advantages and limitations. In order to overcome the problems of each method mentioned above, a new approach has long been anticipated. The approach that we propose here integrates important concepts developed by previous attempts, while at the same time tries to avoid the identified problems. Since the construction rules for friezes can be more easily reconstructed, as shown by the systematic descriptions developed by Mead, Donovan and Sharp, we believe that the more applicable methodology at this stage is to adopt an approach that not only separates the recording of the supplementary friezes from the central bands, but also analyzes them differently. Thus, the basic concepts of classifying motifs according to the tools used to execute them, of treating friezes differently from central bands (Siorat 1990), of describing the ways different tools were combined to create images (Donovan 1973; Mead 1975; Sharp 1988), and of stressing the importance of the moving direction of a design element in the decoration (Anson 1986) are all combined and integrated in this new program.

This program aims to create a motif recording system that is capable of identifying design elements and classifying motifs according to their structural rules. The intention is to allow archaeologists to outline the unique specificities and innovations of motifs found in a site, island or archipelago, to identify local stylistic traits (Anson 1986: 163; Green 1978: 11, 1979: 42–43; Kirch 1988: 105) and to compare common motifs found in various island groups (Anson 1986: 163; Donovan 1973; Green 1978; Mead 1975; Sharp 1988). As a first step, in this paper, we have used published and unpublished data from Lapita sites in New Caledonia to test a series of case-studies. We present here the general structure of our proposed recording system, the successive steps of analysis, and some examples of recording the central band.

Structural levels of decoration

The structure to classify a given decorated potsherd is described below (Table 1).

The base of our analysis, following Siorat, is the *design element*, defined rigidly as *a decoration unit executed by one single act* (Chiu 2003: 226) with one single tool or even one single color, in order to ensure that they cannot be further subdivided into smaller elements. This is the case, for example, for the

Table 1. Levels of decorative composition.

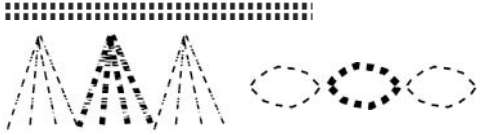
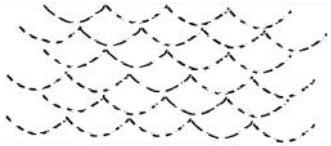
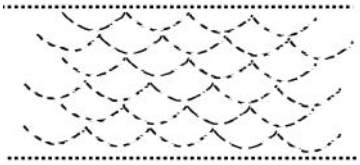
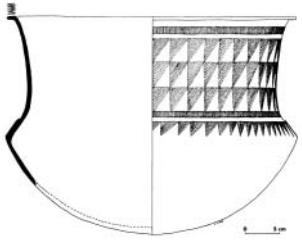
Levels of decoration	Subdivision		Example
Design elements	Two dimensional	Painted	
	Three dimensional	Appliqué	
Design units	General zone marker		
	Unit of design		
Motifs and alloforms	Symmetry of single design element		
	Symmetry of multiple design elements		
Design zones	Void space		
	Supplementary frieze		

Table 1, continued.

Levels of decoration	Subdivision		Example
Design zones	Central bands	Simple	
		Complex	
Design fields and vessel forms			

dentate-stamped straight line, the impressed circle and the dentate-stamped curve (Table 2).[1] Three-dimensional appliqués[2] such as those listed by Mead (1975: 25) and Donovan (1973: 87) will also be considered as design elements in our analysis, as they stand out distinguishably from the rest of the surface.

Table 2. Design elements (adapted from Chiu 2003: Table 6–3)

Shape	Design element	Code
Straight line	dentate-stamped straight line	1
	impressed straight line	2
	incised straight line	3
Linear	irregular incised line	4
	paddle-impressed line	5
Curved	dentate-stamped curve	6
	impressed curve	7
	incised curve	8
	shell impressed line	9
	finger nail impression	10
Dot	single impressed dot	11
	impressed irregular dots	12
	incised dot	13
Hole	pierced hole	14
Circle	impressed incomplete circle	15
	impressed whole circle	16
	impressed circle	17
Square	impressed square, possibly made with bird bone	18
Oval	dentate-stamped oval	19
Painted area	different colors and shapes of the strokes	20

The second step defines the *design units*, which are made of *the succession of one design element*, used as a fixed set to be combined with other design elements or design units to create a motif, as shown in Table 1. They can usually be described with the structural rules developed by Mead and his followers. Here the "general zone marker" is made by one or several horizontal lines that do not stand out as individual decorations themselves.

[1] This step provides a set of data for further discussion on the tool(s) employed and can raise issues such as the smallest unit of stylistic consistency that can be reliably isolated in prehistoric contexts—the unconscious or subconscious variations, the "motor-habits" or "motor-performance" of a potter (Hardin 1977; Hill 1977). It has been suggested that these motor-performance attributes are subconscious and unlikely to be learned or copied from person to person, regardless of shared learning frameworks or kinship relations among potters.

[2] As some appliqués functioned mainly not as decoration but string-holding units, how to classify them should lie in the judgment of experienced researchers.

The third step defines the *motifs* and their *alloforms*, defined as *the smallest repeatedly used unit* that is made of one or more different design elements with more complex symmetrical patterns. They appear as a fixed set as well, to be used to construct other motifs or design zones, mainly as part of the central band. Most of the previous approaches have stopped at this point, publishing a vast documentation on the most common motifs recorded instead of trying to decode the underlying rules (for example, Anson 1983). Thus here we will simply treat the undisscetable unit as a whole to be analysed as "supplementary friezes" or the "complex central band" discussed below.

The fourth step is the *design zone* with its boundary set by zone markers, or by the turn of the vessel shape. As Mead (1975) has pointed out, design zones can also be defined by the structural limits of a pot, such as the edge of the rim. The recent discovery of painted Lapita sherds in Vanuatu (Bedford pers. com. 2003) has shown the need to record also the undecorated bands (the voids) present between friezes and/or central bands. It is at this stage of the program that the division between "central bands" and "supplementary friezes" is introduced.[3] Within a single design zone, what Mead originally defined as "restricted zone markers" that are made of a more complex repetitive pattern will now be recorded as supplementary friezes, as they too possess the function of decorating a certain space. Supplementary friezes are more likely to be composed of a restricted number of design units, whereas the central bands can be made by either single or multiple design elements or units.[4] Size does matter, for the larger the entire decoration zone is, the more significant it becomes visually. Some of the movements of motifs employed to fill up the space may be described again with symmetrical rules, while complex central bands may not. In the next section we propose a first sub-division of the different themes of the complex central band identified for New Caledonia and the ways to record them.

[3] Movement(s) of design units/motifs along a fixed axis or several axes will be discussed in this part with the symmetric analysis generated by Shepard (1965) and Washburn (1977, 1983, 1995) that has been used successfully to identify, in an objective fashion, motif construction rules and their varieties. This method has allowed Washburn to point out that, although different northern California Indian tribes—Hupa, Yurok, and Karok—are using very similar design elements to decorate their baskets, the basket weavers from each tribe will choose particular tribal construction rules restrictedly shared by the weaver's own tribe to arrange the direction of design elements onto the basket, even when these tribes have frequently interacted and intermarried. By doing this, weavers are able to maintain their social identities and distinguish their final products from those of other tribes (Washburn 1995).

[4] In the process of stylistic simplification of the Lapita structure, simple friezes have in some archipelagos taken up the space of the central bands and become themselves the major decorations on a pot (Best 2002; Mead 1975). Therefore, we suggest that the distinction of the friezes from the central bands can only rely on the surface area that a design zone occupies, instead of a subjective judgement of how "complex" a decoration zone looks like.

The final step of design analysis is that of a the *design field*, combining the intervening layers of design zones. These fields are defined by the structural limits of a vessel. Thus a typical design field is composed of one to several linked friezes above and/or below one or two central bands.

The whole design field is then studied in relation to pottery form, linked to a vessel typology: carinated pots, bowls, flat bottom dishes, pedestal stands, etc.

The central band: a motifs inventory for New Caledonia

Until today, all the programs proposed to record, in a coherent way, the Lapita design corpus have failed to really go beyond the recording of the friezes.[5] As already emphasised, this is mainly due to the often fragmented nature of the sherds and the complexity of the central band motifs. Archaeologists studying Lapita material are familiar with the main motifs that form the supplementary friezes (for example, Anson 1983) (Figure 1). The well preserved ceramics with intact central bands excavated in a number of Lapita sites from New Caledonia have allowed the construction of a seriation of the most common motifs, encompassing part of what can be defined as a "Southern Lapita tradition" (Sand 2000). This section summarizes and illustrates a set of distinctive recurrent motifs developed by Lapita potters for the central decorative band present on dentate-stamped and non dentate-stamped ceramics produced 3000–2800 years ago in New Caledonia. Although the inventory is still in process it incorporates the majority of the themes identified to date in our materials.[6] The themes have been divided into three different categories in order to present a coherent set of related motifs. A detailed description of each category can be found in Sand (1996: 122–135) and will be published in English in a forthcoming paper.

- The face motifs (Figure 2): The anthropomorphic representation is one of the most elaborate themes present in the Lapita inventory. The studies conducted in New Caledonia were able to identify five major subdivisions, with internal variations[7] : a) double-face motif; b) triangular-face motif;

[5] Different versions of a computer program called "LapitaDraw" have been created by Arnaud Noury over the last few years (Noury 2004). Unfortunately, the few people who have been given the opportunity to receive a copy have not been able to open the files and test the method. From our understanding of the written document sent with the program, it appears that the friezes and the central bands are recorded in the same way. This program is the first to emphasise the sequencing of friezes and central bands on a given surface, yet it apparently falls short of treating these functionally different decoration zones separately as they deserve.

[6] Preliminary comparisons with Lapita sherds found in other archipelagos have allowed us to sharpen our proposal of divisions in sets of themes that, although incomplete, could work for the wider region.

[7] The divisions proposed for New Caledonia do not follow the types published by Spriggs (1990: 84–100), as they do not appear to be satisfactorily usable in the analysis.

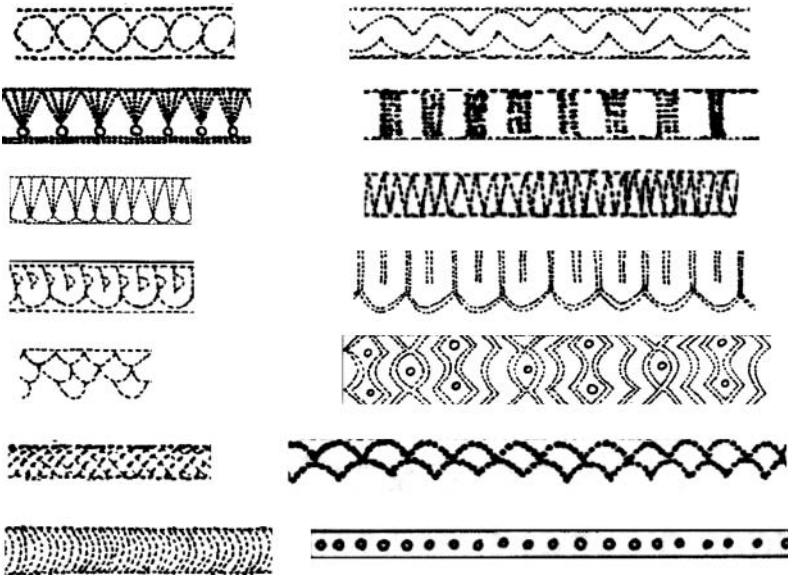


Figure 1. Examples of supplementary friezes found on Lapita pots from New Caledonia.

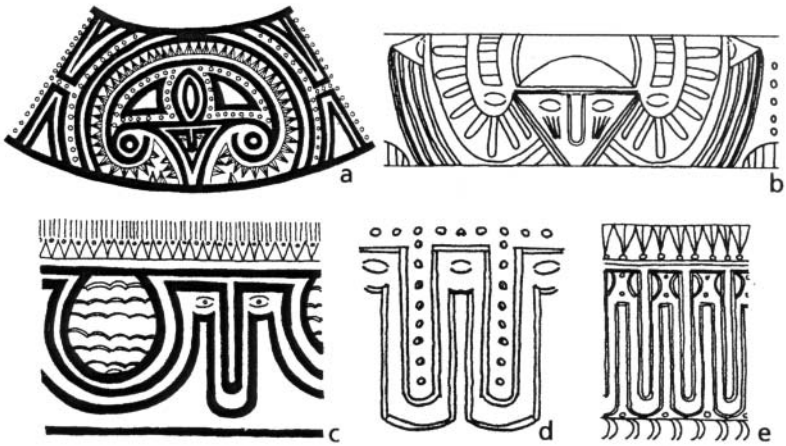


Figure 2. Anthropomorphic Lapita motifs and their abstract evolutions in New Caledonia.

c) "Long-nose" face with "earplugs"; d) stylized elongated face; e) simplified "long-nose"motif.

- The geometric motifs: The dentate-stamped geometric motifs form the most diverse category of decorations present on Lapita pots. Some are very complex, others are constructed on a number of simple rules (see Figures 5–9). At this stage of analysis nine different themes have been differentiated: a) labyrinth motif; b) undulated motif; c) successive triangles; d) rectangular constructions; e) oblique rectangles; f) triangles; g) wavy designs; h) zig-zag motifs; i) specific boxed motifs.
- Non dentate-stamped motifs: The non dentate-stamped Lapita motifs are differentiated by the tool or/and technique employed to make the decoration. These are composed of: a) incised motifs; b) impressed motifs; c) shell-impressed motifs; d) fingernail impressed motifs; e) paddle-impressed motifs.

How to use the database: a few examples

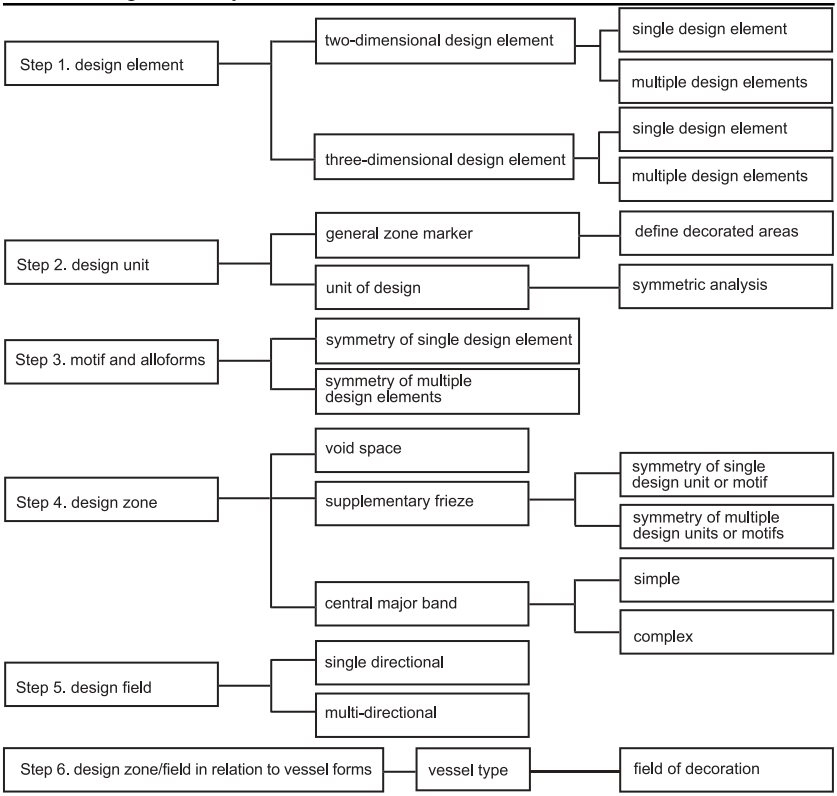
Recorded within the proposed program, any given decorated Lapita sherd will be analyzed through successive stages of complexity (see Table 3), defined as:

1 the tool(s) employed to execute the decoration;
2 the smallest repeatedly used image unit(s) created within a given zone, the design unit;
3 the motifs and alloforms, made of one or more design elements and possessing complex structures;
4 the rules employed to combine design units/motifs together to fill up a given zone;
5 the rules employed to put together different design zones to form the entire design field;
6 the relationships between design fields and vessel shapes.

Practically, not every sherd will contain the full information. For fragmented sherds that do not contain any indication of what the complete image may have been, the analysis should stop at the design unit level or at most the motif level. The data collected from those sherds, which are by far the most numerous in archaeological sites, are nevertheless useful as they provide information that may, for example, define different construction rules to create the design units/motifs, specify the tools used to create them, record the persistence of using such design units/motifs through space and time to construct the larger design zone or field, etc.

However, the database is designed mainly to record more complete potsherds. Information collected will define the construction rules chosen to arrange design units/motifs in a given design zone, and how these zones were

Table 3. Steps of analysis.



combined to create the entire design field. With the program, preferences for these underlying rules may be identified and thus provide archaeologists with a statistical base to discuss intra- and inter-island interactions through time. To allow for the computerised coding of the diversity of each set, standardised rules specific to each category are needed, as there appears to be no way of making any easy standardisation.[8] As a series of case studies, a detailed deconstruction for some themes of the central band is presented here, illustrating the main logic of the recording of the database.

[8] It must be remembered that some frieze motifs and motifs of the central band may be interchangeable. This is the case for example of the "successive triangles" motif, which is commonly used as a central band but can also appear as a frieze or as a sub-motif of a central band.

- In the case of the "long-nose" face (Figure 3), the main sub-divisions in the program should be (from top to bottom): a) the type of the upper zone marker; b) the infill of the area above the face (if any, in relation to the height of the 'ear-plug'); c) the specificities of the 'face' design (type of marker, type of eye, possible other infills, etc); d) the characteristics of the 'ear-plug' (position in connection to the upper zone marker, infill motif); e) the infill below the face and the 'ear plug' (if any); and f) the type of the lower zone marker.
- In the case of the simplified "long-nose" face (Figure 4), other subdivisions need to be proposed. These should be: a) the type of the upper zone-marker; b) the type of the 'eye' location (with a whole set of possibilities, to be divided depending on the tool-form identified); c) the type of the rule for the 'nose' (separated, compressed, simplified, with specific adding, etc); d) the infill below the nose (if any); and e) the type of the lower zone marker.
- In the case of the "labyrinth motif" (Figure 5), the main subdivisions should probably be: a) the type of the upper zone-marker; b) the infill below the zone-marker (if any); c) the infill of the upper triangle (with a detailed set of proposals, integrating the different sub-motifs, some already defined in the friezes code or as the main motif of the central band); d) the diversity of the central labyrinth (number of successive vertical patterns, number of lines in the design, unique elements); e) the infill of the lower triangle (if present); and f) the type of the lower zone-marker.
- The same rules cannot apply for the "undulated motif" (Figure 6), whose main characteristics appear to be as follows: a) the type of the upper zone marker; b) the rule of the "frieze" topping the main undulated motif; c) the characteristics of the central undulated motif (one row, interconnected multiples rows, disconnected multiple rows, specific infill, etc., see Figure 9); d) the rule(s) of the frieze under the undulated motif; and e) the type of the lower zone marker.
- For the "successive triangles" (Figure 7), the subdivisions should be: a) the type of the upper zone-marker; b) the infill of the upper spaces (if any); c) the succession of the main motif (only one band, one band of triangles with a frieze, two bands of triangles connected by a central frieze, etc.); d) the infill of the lower spaces (if any); and e) the type of the lower zone marker.
- In the case of the "rectangular constructions" (Figure 8), the rules should be as follows: a) the type of the upper zone-marker; b) the vertical number

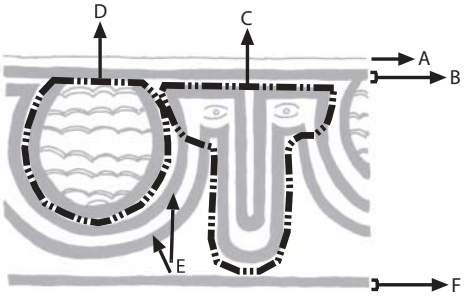


Figure 3. Subdivisions of the "long nose" motifs.

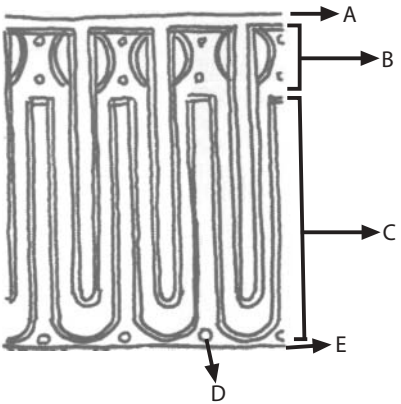


Figure 4. Subdivisions of the stylized "long nose" motifs.

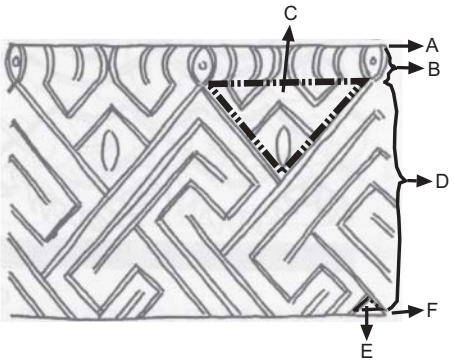


Figure 5. Subdivisions of the "labyrinth" motif.

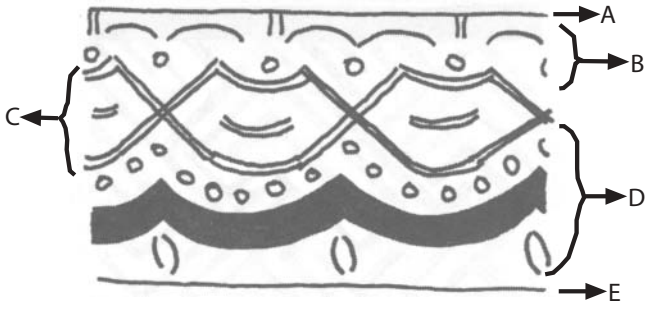


Figure 6. Subdivisions of the "undulated" motif.

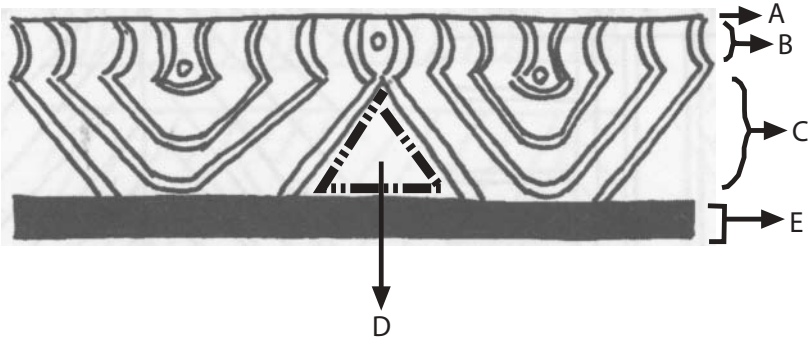


Figure 7. Subdivisions of the "successive triangles."

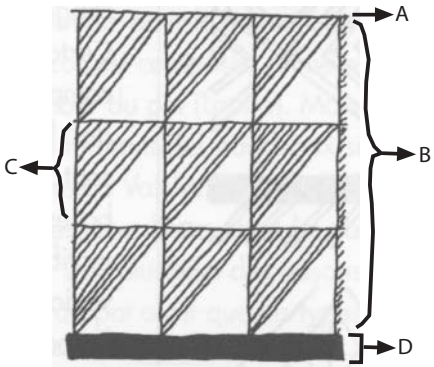


Figure 8. Subdivisions of the "rectangular constructions."

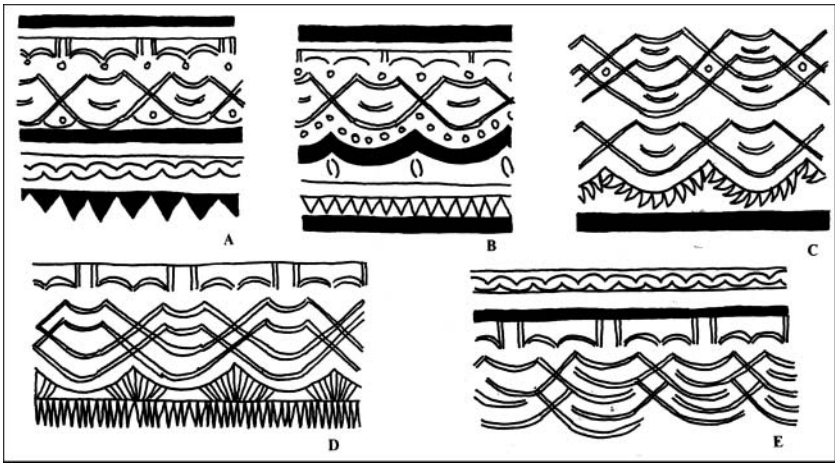


Figure 9. Examples of the diversity of the category of undulated motifs found in southern Lapita (from Sand 1996: Fig. 164).

of rectangles; c) the characteristic(s) of the infill of the rectangles (with multiples choices), and d) the type of the lower zone-marker.

As part of the recording of the central band's motifs, the computer program will take into account the existence of (mostly) vertical divisions between parts of the central band, in the form of zone-markers, voids or three-dimensional modelling. In some cases, two types of the same motif or two completely different motifs may be present side by side on a central band, while in some sites two central bands are present on one pot, separated by sets of friezes. Step 5 illustrating the design field will allow the identification of complete similarity between central bands on two different pots, and to see if this is also the case for the associated friezes (Figure 9). The final step of the analysis, that looks at the relationships between any given design zone/field and vessel forms, is essential in those cases.

Conclusion

The construction of a full database canvassed in this paper is still in process and there is no need here to go into further detail, as previous experiments have shown the need to fulfil successive stages of computer processing (A. Noury pers. com. 2001, 2004). In particular, a first attempt at a regional comparison indicates that the categories identified for the central bands in New Caledonia do not cover all the diversity of Lapita motifs recorded for the Western Pacific region. This is above all the case for the Bismarck Archipelago, where complex

sets of designs have been defined. A cooperative effort involving archaeologists working on the different Lapita provinces will thus be very much needed to complete a significant inventory of central band themes and categories.[9] We also plan to integrate a GIS based digital mapping system in the program, referencing and linking the islands of the Western Pacific where Lapita pottery has been recorded. This will allow users to see where a certain type of design element, design unit, motif, design zone or design field is recorded within the realm of the Lapita Cultural Complex. A final step in the program will be to progressively integrate other site information such as stratigraphy, radiocarbon dates, site formation processes, etc., to help archaeologists examine and compare intra- and inter-site data more conveniently.

Acknowledgements

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[9] The general approach of recognising patterns through underlying structures (Mead 1975; Sharp 1991) is a valuable concept in using stylistic analysis to investigate social behaviours. There is a need to modify the original Mead–Donovan and Sharp grammars and vocabularies with specific attention being paid to recognise, first of all, the "essence", the unchanging permanence of a motif, in order to distinguish motifs due to execution errors from the ones that may contain certain social meanings. The underlying construction rules for motifs should then be emphasized in order to establish valid arguments for possible standardization and specialization of local pottery production and their implications in terms of social interaction and relationships.

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