POTTING TRADITIONS OF PACIFIC NICARAGUA, AD 800-1350

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Abstract: More than eighty years after Lothrop's watershed Pottery of Costa Rica and Nicaragua, archaeologists working in Greater Nicoya continue to struggle with problems of ceramic taxonomy. Decades of research have led to the identification of a bewildering array of ceramic types, but little discussion of the interrelationships between these types. This paper argues that most of the Sapoá Period polychrome types previously identified in Pacific Nicaragua—including those usually treated as markers of different immigrant Mesoamerican groups—are more alike than unalike, and are best understood as the products of a common potting tradition with a probable Central American origin.

Introduction

With the possible exception of stone statuary, no other category of material culture is as strongly associated with the archaeological subarea known as Greater Nicoya as ceramics. More than a century and a half of archaeological research in Greater Nicoya has identified dozens of distinctive ceramic types and varieties. Samuel Lothrop, who literally wrote the book on the pottery of the subarea (i.e., *Pottery of Costa Rica and Nicaragua*, 1926) set the tone for later researchers by identifying a half-dozen "wares" with numerous decorative variants. Later studies (e.g., Norweb 1961, 1964, Baudez 1967; Lange 1971, Healy 1974, 1980; Sweeney 1975; Day 1984; Hoopes 1987; Gorin 1990; Knowlton 1992, 1996; etc.) refined Lothrop's work by introducing a type-variety-based approach that continues to be used into the 21st century. Healy (1974, 1980:81), whose study of the ceramics of the Rivas region provided the basic framework for most later ceramic studies focusing on Pacific Nicaragua (the northern half of Greater Nicoya), defined 41 ceramic types characteristic of the Rivas region (52 unique taxa when varieties are included). A later catalogue published in *Vínculos* (Bonilla V. et al. 1990), which drew heavily on Healy's work as well as research by other scholars (notably Fred Lange, Jane Day, and Jeanne Sweeney) and which is often used by archaeologists working in Greater Nicoya as a sort of field handbook of ceramic types, identified more than 80 unique ceramic types and varieties for the entire subarea. My own recently-completed dissertation research, focusing particularly on ceramic material recovered from the archaeological sites of Santa Isabel in Rivas (Ni-Ri-44; excavated by the University of Calgary in 2000-2005) and San Cristóbal in Granada (NMN2-1; excavated by Susan Bursey [Wyss 1983] in the late 1970s), identified 33 distinct Pacific Nicaraguan ceramic types incorporating almost six dozen different varieties. This work, which also drew heavily on a comparative photographic database of almost 1600 complete ceramic vessels from Greater Nicoya in museum and private collections, proposes several new types as well as substantial revisions of existing types, including the definition of approximately two dozen new varieties as well as the occasional reclassification of some previously defined types or varieties into new categories (Tables 1 and 2).

Although type-variety based typologies have proven useful to the study of Greater Nicoyan archaeology in the past (and will doubtlessly continue to be useful in the future), it should be recognised that the type-variety approach itself, as conventionally applied, does not necessarily encourage the investigation of potential inter-type continuity of the sort that might reflect production by a common potting tradition—a specific interest of my own dissertation research. This is because individual types are ideally defined as being *distinct from* rather than *similar to* other types. As a result, modal similarities between ceramic taxa (i.e., types and/or varieties), while acknowledged as being *important* in type-variety-based classification (e.g., Sabloff 1975:4; Healy 1980:80), generally receive considerably less attention than types and varieties themselves (Day 1984:48; Gifford 1960), and may be overlooked altogether if no systematic effort is made to identify them.[1]

In the study of any potting tradition, a lack of knowledge concerning inter-type relationships would represent a serious lacuna, since individual types, after all, can be said to be "related" through the technological traditions in which they are produced. Unfortunately, such a lacuna exists in the archaeology of Pacific Nicaragua, where ceramic types have primarily been used for chronology building—as distinctive markers of discrete time periods—and where there has been (perhaps as a consequence) little formal discussion of the possible relationships that might exist between these types, relationships that might be perceived as being incompatible with the business of chronology building, insofar as this business is predicated on a belief that Greater Nicoya's later prehistory involved a series of episodes of population replacement by different Mesoamerican groups (each of which, presumably, used pottery unrelated to that used by other groups). The lack of interest in inter-type relationships is, I think, reflected in the general neglect of the classificatory category of *ceramic group*. Although strictly speaking individual ceramic types in the type-variety approach are supposed to be sorted into *ceramic groups* (theoretically, clusters of ceramic types that appear to be closely related, primarily in terms of decoration[Healy 1980:82), in practice only Healy and Knowlton chose to employ this useful taxonomic category in their studies of Nicaraguan ceramics. Ceramic groups are also absent from the *Vínculos* catalogue.

Given the tendency in Pacific Nicaragua to treat key ceramic types as being temporally significant and (mostly) unrelated to one another, then, it should come as no surprise that many of these presumably discrete types have also come to be treated as de facto *ethnic markers*, a usage consistent with the assumption that the different periods in Greater Nicoya's prehistory correlate with the presence or arrival of different cultural populations (commonly although uncritically referred to as "ethnic groups"; cf. Steinbrenner 2002). Table 3 summarises some popularly assumed relationships between cultural groups and previously established ceramic types; the practice of using Papagayo Polychrome and Sacasa Striated as "Chorotega" markers and Vallejo Polychrome as a "Nicarao" marker is particularly well established, although my own work (as discussed herein) suggests that both polychrome types, at very least, are products of a common potting tradition.

We should be cautious about accepting the traditional ethnic associations of Nicaraguan pottery without further study, especially since recent work (particularly, the work discussed in this symposium) has argued that many of the conventional assumptions of Greater Nicoya

[1] This is probably because modal similarities are perceived (cf. Sabloff 1975:4) as being less useful than types for intersite comparisons and chronology building—tasks which continue to preoccupy Greater Nicoyan archaeology (Salgado 1996:111).

archaeology—including key assumptions concerning the temporal and (by extension) ethnic significance of certain types—are, in fact, poorly supported. An important example that is relevant to this present study is summarised in McCafferty & Steinbrenner (2005), which re-evaluated the existing Greater Nicoya radiocarbon database in the light of a large sample of new dates from the Santa Isabel site. This study concluded that most of the decorated polychrome types (i.e., Vallejo, Madeira, and Bramadero) that have been previously (and confidently) accepted as being temporally diagnostic of the Ometepe Period (AD 1350-contact) and which have not, for the greater part, been substantially linked to earlier appearing diagnostic types *actually* date to the latter half of the Sapoá Period (AD 1000-1350). This finding (which has yet to gain widespread acceptance amongst Greater Nicoya scholars, although subsequently supported by additional C14 data from later work at Santa Isabel and sites in the Granada area and probably accepted by most of the scholars attending this symposium) challenges the conventional belief that the "Ometepe Period diagnostics" can be treated as markers of the Nicarao who dominated Rivas at the time of Spanish contact, a belief which appears to be based almost entirely on the uncritical assumption that the latest appearing decorated *ceramics* in Nicaraguan assemblages must naturally correlate with the latest appearing *group* documented in Nicaragua's ethnohistory. This, of course, would be an entirely reasonable assumption if not for the fact that the final phases of most of the previously excavated important archaeological sites in Greater Nicoya (including the Santa Isabel site itself) actually do *not* appear to represent the Ometepe Period immediately prior to European contact, as previously believed (a topic beyond the purview of this paper).

It is clear that we still have much to learn about the cultural significance of Pacific Nicaragua's material culture, and equally clear that the investigation of potential relationships between ceramic types has much to contribute to the ongoing debate concerning the "meaning" of these types. In an effort to begin exploring inter-type connections and continuity in the ceramics of Pacific Nicaragua, my dissertation research specifically investigated a number of *conceptual modes* or attributes (Rouse 1960:315) that could potentially be used to identify similarities between supposedly "distinct" ceramic types and varieties—similarities that might, in turn, be plausibly interpreted as reflecting common origins for these taxa in one or more common potting traditions. These conceptual modes included attributes associated with the form of ceramic vessels (e.g., shape, configuration of appendage modes, wall thickness and height, orifice size, etc.) as well as with decorative variation, and included not only modes that were likely consciously or intentionally produced by potters (specific vessel shapes, for example) but also attributes which seem likely to have been unconsciously or unintentionally produced by potters engaged in rote work (for example, the average wall thickness of vessels belonging to a specific ceramic type).

Prior to beginning my formal analysis of the Santa Isabel and San Cristóbal ceramic assemblages, my preliminary studies of this material led me to tentatively identify several new ceramic groups for Nicaraguan pottery from the Sapoá Period, groups that varied radically from those originally proposed by Healy. In identifying these groups, I generally (although not invariably) assumed that the ceramic types assigned to each group represented the products of either different potting traditions or, alternatively, of sub-traditions participating in a larger Greater Nicoyan potting tradition. These new ceramic groups include two primary groups incorporating two sets of polychrome types that appear to be quite strongly related in terms of decorative content—the Papagayo-Vallejo Group and the Granada-Madeira Group—and a third "transitional" group that includes two major polychrome ceramic types which cannot be presently

assigned to either of the two major groups. While the types in the first two ceramic groups *are* presumed to have been produced by related groups of potters, the individual types placed in the third group (which should be viewed as a temporary "working" group) are *not* assumed to be necessarily closely related to one another; rather, they are mutually classed as "transitional" because they share subsets of attributes with ceramics in both of the two primary ceramic groups, although not the *same* subsets. Table 4 summarises the major types assigned to these three ceramic groups (note that non-polychrome ceramic types, including both decorated and utilitarian types, were assigned to other ceramic groups which are not discussed here).

Having postulated the ceramic groups summarised in Table 4, I formulated several hypotheses concerning the relationships between the ceramic types assigned to these different groups and then tested these hypotheses through the comparative analysis of the various conceptual modes outlined above.[2] Generally speaking, evidence supporting these hypotheses would tend to validate my proposed ceramic groups and (hopefully) pave the way for future discussion about potting traditions. Five key hypotheses concerning Sapoá Period polychrome serving-ceremonial vessels were tested:

- Ceramic types assigned to the Papagayo-Vallejo Group are more closely related to one another than they are to ceramic types in the other groups. This connection is especially well expressed in the relationships between Papagayo: Mandador and Vallejo: Vallejo and between Papagayo: Fonseca and Vallejo: Pica, which represent pairs of *analogous ceramic varieties*—that is, varieties belonging to different ceramic types that are nonetheless remarkable similar in many respect.
- Ceramic types assigned to the Granada-Madeira Group are more closely related to one another than they are to ceramics in the other groups, and are distinct from ceramics in the Papagayo-Vallejo Group. Granada and Madeira also feature analogous varieties that demonstrate their relatedness: Granada: Bandera and Madeira: Banda and Granada: Sapo and Madeira: Sapo.
- Pataky Polychrome, while demonstrating commonalities with the Granada-Madeira Group, is probably more closely related to the ceramics in the Papagayo-Vallejo Group. This connection is most strongly expressed in the relationship between the analogous varieties of Papagayo: Cervantes and Pataky: Pataky.
- El Menco Polychrome, a likely precursor to Luna Polychrome (a type almost completely absent in Sapoá Period contexts that is often viewed as having been "introduced" into Greater Nicoya from elsewhere), demonstrates commonalities with both the Granada-Madeira and Papagayo-Vallejo ceramic groups which suggest that the type—and, by extension, Luna as well—is of local rather than foreign origin.
- All of the polychrome types described above, despite their differences, demonstrate sufficient commonalities to suggest that they are the products of a common potting tradition.

Analysis of Formal Variation

As noted above, my analysis of *formal variation*—that is, conceptual modes associated with the form or shape of ceramic vessels—investigated attributes that were probably consciously

[2] Other hypotheses concerning non-polychrome ceramic types were also investigated but are not discussed here.

produced by potters as well as attributes that seem more likely to have been unconsciously produced. With respect to this, I suggested that overtly distinctive attributes, such as vessel shape or appendage modes (including tripod supports and appliqué bases), are more likely to have been intentionally selected for production than less overtly distinctive attributes, such as wall thickness, wall height, and orifice size, which might be conceptualised as "by-products" of the work of potters whose attention was probably usually focused less on these individual attributes (which a skilled potter might replicate by rote) than on the larger task at hand (constructing a pot).[3] My analysis of more overtly distinctive attributes in the ceramic database provided somewhat inconclusive (although ultimately encouraging) support for the previously outlined hypotheses. Figure 1 summarises proportions of vessel forms represented in rim sherd assemblages from the seven analysed Santa Isabel polychrome types. This comparison was carried out to investigate the possibility that participation in a common potting tradition might have predisposed potters to prefer certain vessel forms over others, with the end result that differently decorated ceramic types originating in a common potting tradition might show similar frequencies of specific forms. Table 5 indicates which forms of tripod supports and appliqué bases can be associated with individual Nicaraguan polychrome types. This comparison is a simple R-mode analysis, linking types by their shared attributes.

While the proportions recorded in Figure 1 cannot confirm the hypothesised link between all three types assigned to the Papagayo-Vallejo Group, connections are hinted at by similar frequencies of tripod bowls (roughly one-third of all rim sherds for all three types) and the somewhat similar proportions of vessel forms seen in Vallejo and Isabel. A subtle pattern of resemblance can also be discerned when comparing the Granada and Madeira frequency charts, although the widely differing frequencies of tripod bowls and flat-bottomed bowls overshadows this. Figure 1 provides no real support for the hypothesis that Pataky Polychrome is more closely related to the Papagayo-Vallejo Group than to the Granada-Madeira Group, nor for the hypothesis that El Menco Polychrome demonstrates commonalities with both major ceramic groups (although these two transitional types do somewhat resemble each other in their frequencies of flat-bottomed bowls and superhemispherical bowls/periform vases[4]). However, the fact that *all* of the major polychrome types draw upon a surprisingly *limited set* of basic vessel forms—there are no plate or cylinder forms, for example, although these forms are common in areas north and south of Greater Nicoya—*is* consistent with the hypothesis that all of these types are products of a common potting tradition.

Table 5 demonstrates that all of the ceramic types assigned to the Papagayo-Vallejo Group employ a variety of tripod support forms. This contrasts with the Granada-Madeira Group types, which typically draw upon a much more limited group of support forms. Pataky Polychrome's use of a very diverse range of support forms (the most diverse of any type, in fact), links the type to the Papagayo-Vallejo Group, as hypothesised, while the paucity of support forms associated with El Menco Polychrome suggests a stronger connection to the Granada-Madeira Group than to the Papagayo-Vallejo Group. Interestingly, *all* of the major polychrome types (likely excepting Isabel, a newly defined type previously subsumed into Papagayo [mostly into the Mandador variety] and

[3] This argument receives considerably greater elaboration in chapter 5 of my dissertation.

[4] Superhemispherical bowls and periform vases were generally classed together for the purposes of this study because rim sherds from these forms tended to be more easily confounded than rim sherds from bowls with unrestricted orifices (e.g., tripod, non-tripod, and flat-bottomed bowls).

characterised by its overall simplicity of design and decoration) employ modeled supports based on lifeforms (usually, a modeled head), a rather distinctive practice that appears consistent with the common potting tradition hypothesis.

My analysis of less overtly distinctive (and theoretically rote-produced) modal attributes of formal variation in the ceramic database provided stronger support for the various hypotheses concerning ceramic groups and their origins in a common potting tradition than the analysis of more overtly distinctive, consciously produced variation. Figures 2 through 10 provide summaries of the analysis of selected rote-produced traits observable in rim sherds from vessels with unrestricted orifices (including annular-based bowls, tripod bowls, flat-bottomed bowls, and simple hemispherical bowls) in the Santa Isabel and San Cristóbal ceramic assemblages. These modes include average wall thickness (measured at a consistent point below the rim), estimated original orifice size, and wall height (for annular-based, tripod, and flat-bottomed bowls only, collectively classed as composite silhouette bowls). As these figures and tables indicate, comparisons of these modes consistently support the hypotheses concerning the relationships of the ceramic types assigned to the Papagayo-Vallejo and Granada-Madeira ceramic groups to one another, the relationship of Pataky Polychrome to the Papagayo-Vallejo Group, and the relationships between the various pairs of analogous ceramic varieties identified here. These comparisons are less consistent in supporting the hypothesis that El Menco Polychrome is related to *both* of the two major polychrome groups (since connections between El Menco and the Granada-Madeira Group appear to be somewhat stronger), but still provide more reason to accept the hypothesis than to dismiss it, and at any rate, the similarities between El Menco and the Granada-Madeira Group are consistent with the hypothesis that El Menco represents a type of local rather than foreign origin. The similarities between types hypothesised to belong to common ceramic groups were even more apparent in numerous scatter plots that were generated to compare these different attributes against one another; typical examples of these (comparing orifice radii against wall thickness in composite silhouette bowls) are provided in Figures 11 and 12.

Overall, the evidence from the analysis of formal variation appears to point to the presence of two distinct potting traditions responsible for the production of Santa Isabel's polychrome ceramics: one responsible for producing the types in the Papagayo-Vallejo Group as well as Pataky Polychrome, and a second tradition responsible for producing the ceramics of the Granada-Madeira Group and perhaps El Menco Polychrome as well.[5] However, the relationship of these two potting traditions to one another remains an open question. Do they represent discrete potting traditions—e.g., one tradition that developed locally and a second introduced "foreign" tradition—or rather, sub-traditions of a single larger potting tradition, as hypothesised here? Given that the two polychrome groups, despite their differences, are not mutually exclusive and continue to overlap in all aspects of modal variation examined here, it cannot be said that there is strong evidence supporting the former interpretation. On the other hand, similarities in the kinds of modal attributes discussed here do not of course always imply a connection: a comparison of Nicaraguan ceramics with a sample of pottery from Africa or China would likely also find instances of overlap in dimensions such as orifice size and wall thickness. The analysis of

[5] Additional formal analysis that has not been specifically discussed here (although partially reported in several of the accompanying figures and tables) also suggested that most of the non-polychrome types found at Santa Isabel (including both decorated and utilitarian types) were probably also produced by the tradition associated with the Papagayo-Vallejo Group.

decorative variation in polychrome ceramic types sheds more light on the nature of the relationship between the two polychrome ceramic groups.

Analysis of Decorative Variation

The analysis of decorative variation in my dissertation primarily involved identifying and classifying hundreds of individual decorative elements/modes (defined below) and comparing the frequency of these modes in various polychrome ceramic types. Generally speaking, decorative variation is often presumed to have been intentionally selected by potters and is commonly used to establish connections between ceramic types. However, the conscious selection factor means that decorative modes actually have great potential to blur boundaries between discrete potting traditions because potters can choose to adopt modes originating in other traditions. For this reason, it cannot be assumed that two types are products of a common potting tradition simply because an individual decorative mode appears in the decorative vocabulary of both types. On the other hand, consciously-selected decorative variation can potentially be used to identify potting traditions or sub-traditions if we can isolate distinctive *sets* or *repertoires of decorative modes* that are characteristic of given traditions or sub-traditions. Such repertoires can be thought of as potentially representing unconsciously produced patterns or by-products generated by unintended, practice-guided constraints affecting the conscious selection of decoration. Put simply, individual ceramic types are more likely to represent products of a common tradition or sub-tradition if there is substantial overlap between their individual repertoires of decorative modes. Furthermore, if modes that are shared by types represent similar proportions of the total decorative content found within these types, then this would appear to indicate a particularly close relationship between these types.

In the context of my analysis, most distinctive decorative modes were typically classed as either *rim motifs* or *motif sets*.[6] *Rim motifs* (Figure 13) comprise relatively simple, distinctive decorative elements (usually "abstract" rather than clearly representational) that typically provide the repeating content for simple bands of decoration (referred to as *decorated bands*, or DBs) running horizontally around the circumference of ceramic vessels on either surface, and usually around the orifice of the vessel.[7] More than 100 distinct rim motifs (including variants) were identified as being present in the Santa Isabel and San Cristóbal assemblages. Since many of these

[6] Additional decorative modes that were classified and examined in my dissertation analysis but which have been mostly excluded from the present discussion included numerous *appendage decorative modes* and *design structures*. *Appendage decorative modes* are modes employed in the painting of tripod modeled supports and pedestal bases; these might alternatively be conceived of as representing specialised classes of motif sets. The *design structure*—i.e., "the layout or arrangement of a design; the way the surface area to be decorated is conceptualised, for example, whether subdivided and bounded, and the arrangement of *elements* and *motifs* within that layout" (Rice 1987:475)—represents a conceptual mode that may be produced unconsciously by potters drawing upon a taken-for-granted, tradition-specific grammar that prescribes the placement of consciously selected decorative modes like rim motifs and motif sets. In practice, it proved considerably more difficult to accurately identify design structures based on rim sherd evidence than rim motifs or motif sets, since complete vessel examples made it clear that vessels with very similar rim decoration might feature radically different design structures (especially in the case of vessel interiors). While this consideration necessarily placed constraints upon the type of design structure analysis that I could attempt, in general my limited analysis of this mode provided results consistent with the results of the analysis of rim motifs and motif sets, as did the analysis of appendage decorative modes. The analyses of appendage decorative modes and design structures therefore provided additional lines of evidence supporting the earlier discussed hypotheses.

[7] Despite their designation, "rim" motifs may occasionally also appear in other contexts on the vessel surface.

motifs are ultimately quite similar, after being identified and assigned alphanumeric codes they were sorted into fewer than a dozen larger, subjectively identified "families" of motifs for further analysis (the "Basic Step-Fret" family, for example, includes at least 17 different variants). Table 6 provides a summary of the frequency of occurrence of discernable rim motifs on Ni-Ri-44 polychrome rim sherds. More complex than rim motifs, *motif sets* (Figure 13) represent somewhat conventionalised arrangements of individual decorative elements (including not only rim motifs but also painted bands and lines, panels or areas of solid colour, abstract or geometric shapes, and larger representational images or designs) used to fill a horizontal spatial division surrounding the interior or exterior surface of a vessel. Like rim motifs, individual motif sets were also assigned unique alphanumeric codes.[8] In all, more than 50 distinct motif sets (many of which appeared in several stylistically distinct variants) were associated with the ceramic assemblages for Santa Isabel and San Cristóbal. Table 7 provides a summary list of the motif sets identified in my analysis.[9]

While an exhaustive summary of my dissertation analysis of rim motifs and motifs sets would likely try the patience of the reader, a partial synopsis of the rim motif and motif set analysis should suffice to demonstrate that there is evidence from these decorative modes supporting the five hypotheses concerning ceramic groups and their origins in a common potting tradition. Table 8 summarises the contributions made by major polychrome types to the total pool of rim motif decorative variation for Ni-Ri-44, while Table 9 summarises the contributions made by these same types to the total pool of motif set decorative variation for the same site (both summaries are based on rim sherd evidence). Both of these tables suggest an underlying commonality for the various ceramic types included in the analysis. The first table reflects the fact that many of the most important rim motif families (especially those involving step-frets) are broadly distributed across a majority of the seven types (basic step-frets, for example, are found in every major type excepting Granada, while Lazy-S and Lazy-Z step-frets are associated with all types except Isabel and Pataky). In effect, rim motifs, although commonly treated as being "diagnostic" of individual ceramic types when identified on rim sherds (a claim that is actually only true in some cases), appear to comprise a common vocabulary of decorative modes that can be described as being characteristic of Nicaraguan polychromes as a *whole*. In similar fashion, Table 9 clearly indicates that several of the most common and basic motif sets—especially configurations of solid red or black painted bands (PBs), decorated bands, and the very distinctive ms-02 mode, which designates configurations in which solid red or orange panels alternate with other decorative content—are frequently found in types belonging to *both* of the two main polychrome ceramic groups as well as in the two "transitional" types.

These shared repertoires of distinctive motif sets and rim motifs contribute to the stylistic homogeneity of Nicoya polychromes, and are not easily explained as the products of either independent development or of simple borrowing taking place between separate potting traditions. Collectively, they provide evidence that appears to support the argument for a common potting tradition. Yet this is not to deny that there is also evidence supporting the various hypotheses about smaller groupings within this larger tradition. While several motif sets do span multiple types, Table 9 also shows that many others do appear in clusters that correlate with the two

[8] Most motif sets were assigned codes beginning with an "ms-" prefix (cf. Figure 13f-h), although two simpler and less diagnostic types of motif sets involving combinations of simple painted bands (PBs) were codified using somewhat different systems (cf. Figure 13d-e).

[9] Complete catalogues of the rim motifs and motif sets that I identified are provided in appendices in my dissertation.

hypothesised major ceramic groups. These clusterings also suggest a greater affinity between Pataky Polychrome and the Papagayo-Vallejo Group—an affinity that is also very strongly reflected in the decoration of tripod supports and pedestal bases, decorative categories not specifically discussed here—although Pataky also draws some of its decorative content from the same pool that provides content for the Granada-Madeira Group. Table 8 also provides some evidence that some rim motif families can be thought of as being specific to one or the other ceramic group: pyramid-shaped rim motifs, for example, are exclusive to the Papagayo-Vallejo Group (where they appear only on vessel exteriors), while lines of red dots (coded as rm-39) are rarely found outside the Granada-Madeira Group (where they are used primarily to decorate interior surfaces).

The hypothesised relationships between types are especially well supported by a comparison of their analogous varieties, which were initially identified based on decoration and which are partially illustrated in Figures 14-19. Figure 20, which summarises the frequencies of motif sets appearing on Ni-Ri-44 rim sherds from bowls in analogous type-varieties, clearly establishes the parallels between the Papagayo/Vallejo and Granada/Madeira pairs of analogous varieties. While Papagayo: Cervantes and Pataky: Pataky do not appear, at first glance, to be as "analogous" as the other pairs in Figure 20 (particularly since the exteriors of Pataky: Pataky tripod bowls are almost completely undecorated save for a black rim PB), they remain similar in their employment of the very distinctive (and apparently symbolically charged) ms-07 motif set, a "feathered headdress" design covering half of the interior wall that is associated exclusively with these two varieties as well as a variety of El Menco Polychrome. The two varieties also appear much more similar than a comparison of their *painted* decoration might suggest inasmuch as they both feature distinctive modeled anthropomorphic tripod supports (Figure 17) that are so alike that the slipped but unpainted Pataky: Pataky supports were originally identified in the field analysis as "eroded" versions of the much more elaborately painted Papagayo: Cervantes supports.

The fact that El Menco Polychrome shares important decorative content with Papagayo: Cervantes and Pataky: Pataky is curious, given that the other lines of analysis summarised here have tended to suggest a greater affinity between the type and the Granada-Madeira Group. While the type rightly deserves additional study—especially inasmuch as my own dissertation represents only the second attempt to differentiate this type from Luna Polychrome, following Knowlton's (1992, 1996) lead—for now, the evidence of shared modes seems sufficient to support the argument that the type—and by extension, Luna Polychrome—originated in the same potting tradition as the other types discussed here.

Concluding Thoughts

In sum, the findings of my analysis of decorative variation not only reaffirm the findings of my analysis of formal variation, but provide even better evidence supporting the critical hypothesis that the key serving-ceremonial polychrome ceramic types of the Sapoá Period are ultimately more alike than unlike, and were therefore most likely produced by a common potting tradition, albeit one comprising at least two (and quite probably more) rather distinctive sub-traditions, presumably based in different regions of pre-contact Greater Nicoya. Having established this very basic fact, we are now in a position to move forward and begin to ask more sophisticated questions of the Nicaraguan ceramic database, such as where the potters associated with these sub-traditions lived—a question that current investigations into clay sourcing should help answer—how they interacted, and where, precisely, the larger potting tradition originated.

With respect to the last question, there is no reason to uncritically assume (as is often done) that this tradition was originally introduced by the Chorotega, who are commonly linked to Papagayo Polychrome (as previously noted) and who represent the earliest arriving Mesoamerican group, according to ethnohistorical accounts. Although overtly Mesoamerican elements are certainly part of the repertoire of decorative variation employed in ceramic types that emerged in the Late Sapoá Period (e.g., Vallejo Polychrome), Lower Central America has a very long tradition of polychrome production that predates the period of substantial Mesoamerican influence in the Sapoá and Ometepe Periods, and I do not find the earliest-appearing Sapoá Period Nicaraguan polychrome types (like Papagayo and Granada) to be unquestionably "Mesoamerican" in overall design, although they sometimes do appear to evoke Lower Central American ceramic types that emerged on the southeastern periphery of Mesoamerica in Honduras. Given this lack of early Mesoamerican-ness, we need to seriously consider the possibility that the Nicaraguan potting tradition, with its apparent links to polychrome traditions in countries adjacent to Nicaragua (like the Honduran/Salvadorian tradition that produced Las Vegas Polychrome, which is easily confused with Nicoya polychromes), is actually of *indigenous* Central American origin. Hopefully, now that the former "Ometepe Period diagnostic" types have been identified as products of the same potting tradition that produced their antecedent types, we can leave off being distracted by debates concerning the "origins" of these latter types—although of course we should continue to investigate the possible social factors that might have transformed Early Sapoá Period types into Late Sapoá types—and move on to explore the more basic question of the origins of the *entire* potting tradition.[10]

While my own dissertation database is inadequate to answering the question of the ultimate origins of the Sapoá Period potting tradition—since it almost exclusively comprises archaeological material from Sapoá Period contexts and generally does not include comparative material from the preceding Bagaces Period (AD 300-800)—my own sense (based on very preliminary observations) is that the ceramics of the preceding Bagaces Period may yet demonstrate the sort of linkages with the Sapoá Period that I have demonstrated here between ceramic types previously believed to be unrelated as well as diagnostic of the Sapoá and Ometepe periods. The received view of Nicaraguan prehistory would seem to suggest that this hypothesis is counter-intuitive, since it is widely accepted that the ceramics of the Bagaces and Sapoá periods are simply "too different" to have been produced by a common potting tradition. But then, isn't that what we used to say about the diagnostic ceramics of the Sapoá and "Ometepe" periods?

[10] Regarding the question of how some Papagayo Polychrome became "Mesoamericanised" and developed into Vallejo Polychrome—I say "some" because there is no evidence that Vallejo Polychrome completely supplanted Papagayo Polychrome in the Rivas area, since Papagayo remains the dominant polychrome type at Santa Isabel even after the appearance of the new Late Sapoá types: my own belief is that the ceramics of the *Late* Sapoá (i.e., the former Ometepe Period diagnostic types) rather than *Early* Sapoá types like Papagayo reflect the arrival of the Chorotega into Pacific Nicaragua, and that the Late Sapoá types are therefore products of an indigenous potting tradition being influenced by new Mesoamerican ideologies. A complete discussion of this hypothesis is beyond the reach of the current discussion.

Works Cited

Baudez, Claude F.
1967 *Recherches Archaeologiques dans la Vallee du Tempisque, Guanacaste, Costa Rica.* Travaux et Memoires de L'Institut des Hautes Etudes de l'Amerique Latine No. 18. Paris.

Bonilla Vargas, Leidy, Marlin Calvo Mora, Juan V. Guerrero Miranda, Silvia Salgado González, and Frederick W. Lange (editors)
1990 La Cerámica de la Gran Nicoya. *Vínculos: Revista de Antropología del Museo Nacional de Costa Rica* 13(1-2):1-327.

Day, Jane Stevenson
1984 *New Approaches in Stylistic Analysis: The Late Polychrome Period Ceramics from Hacienda Tempisque.* Ph.D. dissertation. University of Colorado at Boulder, Boulder, CO.

Gifford, James C.
1960 The Type-Variety Method of Ceramic Classification as an Indicator of Cultural Phenomena. *American Antiquity* 25(3):341-47.

Gorin, Franck
1990 *Archeologie de Chontales, Nicaragua, These de Neuveau Doctorat, 2 vols.* Universite de Paris I (Pantheon-Sorbonne), Paris.

Healy, Paul Francis
1974 *Archaeological Survey of the Rivas Region, Nicaragua.* Ph.D. dissertation, Department of Anthropology, Harvard University, Cambridge, MA.
1980 *Archaeology of the Rivas Region, Nicaragua.* Wilfred Laurier University Press, Waterloo, ON.

Hoopes, John
1987 *Early Ceramics and the Origins of Village Life in Lower Central America.* Ph.D. thesis, Department of Anthropology, Harvard University, Cambridge, MA.

Knowlton, Norma
1992 *Ancient Mortuary Ceramics from Nicaragua: A Study of Luna Polychrome.* M.A. thesis, Trent University, Peterborough, ON.
1996 Luna Polychrome. In *Paths to Central American Prehistory,* edited by Frederick W. Lange, pp. 143-76. University Press of Colorado, Niwot, CO.

Lange, Frederick W.
1971 *Culture History of the Sapóa River Valley, Costa Rica.* Ph.D. dissertation, Department of Anthropology, University of Wisconsin, WI.

Lothrop, Samuel Kirkland
1921 The Stone Statues of Nicaragua. *American Anthropologist* 23(3):311-39.

1926 *Pottery of Costa Rica and Nicaragua. 2 vols.* Memoir No. 8. Museum of the American Indian. Heye Foundation, New York, NY.

McCafferty, Geoffrey G., and Larry Steinbrenner
2005a Chronological Implications for the Santa Isabel Project, Nicaragua. *Ancient Mesoamerica* 16(1):131-146.

Norweb, Albert Holden
1961 *The Archaeology of the Greater Nicoya Subarea.* Manuscript on file. Peabody Museum of Archaeology and Ethnology. Harvard University, MA.
1964 Ceramic Stratigraphy in Southwestern Nicaragua. In *Actas y memorias 35th International Congress of Americanists, Mexico, D.F., 1962.* 1:551-61.

Rouse, Irving
1960 The Classification of Artifacts in Archaeology. *American Antiquity* 25(3):313-23.

Sabloff, Jeremy A.
1975 *Excavations at Seibal, Department of Peten, Guatemala, No. 2: Ceramics.* Memoirs of the Peabody Museum of Archaeology and Ethnology, Harvard University 13(2). Cambridge, MA.

Salgado González, Silvia
1996 *Social Change in a Region of Granada, Pacific Nicaragua (1000 B.C. - 1522 A.D.).* Ph.D. dissertation, State University of New York at Albany, NY.

Steinbrenner, Larry
2002 *Ethnicity and Ceramics in Rivas, Nicaragua, AD 800-1550.* M.A. thesis, Department of Archaeology, University of Calgary, Calgary, AB.

Sweeney, Jeanne W.
1975 *Guanacaste, Costa Rica: An Analysis of Precolumbian Ceramics from the Northwest Coast.* Ph.D. dissertation, Department of Anthropology, University of Pennsylvania, PA.

Wyss, Susan
1983 *San Cristóbal Archaeological Site, Managua, Nicaragua: Site Report and Preliminary Ceramic Analysis.* M.A. thesis, Department of Anthropology, Texas A & M University, College Station, TX.