3

Spatial and Cultural Units in Central California Archaeology

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The Central California Taxonomic System and the Culture-Area Concept

THE CULTURE SEQUENCE that forms the foundation for the Central California chronology is at best a regional sequence, rather than an areal or subareal one. It appears that the underlying logic of assuming that the cultural sequence of the lower Sacramento Valley could legitimately be extended to other regions of Central California was intimately connected with the ethnographic concept of the culture-area. It is worthwhile to review this concept and to point out some of the consequences of its application to archaeological materials.

Basic to the culture-area concept is the finding that particular culture traits, both material and nonmaterial, tend to be associated with one another in given regions, and that this association tends to be confined to such regions. The ethnographic findings of Wissler (1926) in regard to culture-areas were that the various groups within a given culture-area each possessed to a greater or lesser extent the trait elements characteristic of the area. Wissler presented the notion that each culture-area had a center and that culture elements diffused outward from the center, subject to limitations of natural boundaries. Groups situated near the center of the culture-area were found to have all or nearly all of its characteristic traits, and their cultures were considered to be typical, in the normative sense, of the area. Groups situated some distance from the center, or the "climax" region as Kroeber (1936, 1939) referred to it, have fewer of the characteristic traits of the area. Such groups were often called "marginal." Groups situated at the borders of the area have traits which are derived from more than one climax region. It has often been pointed out that culture centers, or climax regions, are relatively easy to determine, but that the borders of culture-areas tend to be indeterminate with sharp boundaries between culture-areas quite rare (Kroeber 1939; Driver 1962).

Although several archaeologists have observed that their coworkers rarely make explicit use of the culture-area concept, Jennings (1968:5) pointed out its implicit use. "When the archaeologist describes or delineates an archeologic region on the basis of many sites with similar technology and subsistence, he is in effect establishing a prehistoric culture area, although the term is rarely used by archaeologists." Chang (1967:118) suggested a reason why:

> the culture-area concept has not been used in archaeology too explicitly or vigorously. The archaeologist, I think, in general terms tends to resist the concept because in the archaeological scale of time cultures move and macro-environmental changes occur, and cultural types and macro-environments do not associate stably

> with fixed ethnographic boundaries. Therefore, archaeologists often focus their eyes on the culture, together with the environment with which it interacts, but not on fixed geographic areas. The co-tradition concept, said to be 'culture areas in time depth,' is an eloquent example (Bennett 1948; Rouse 1954).

Willey (1966:5), in his synthesis of North and Middle American archaeology, makes explicit use of the culture-area concept, and also discussed circumstances prompting the resistance referred to by Chang.

> The archaeological culture areas, as employed here, are extensions of the traditional ethnographic culture area concept. It is, however, much more difficult to delineate archaeological areas than those which are projected for a single ethnographic horizon, because archaeological culture boundaries change through time. Occasionally, such changes are drastic. Such phenomena usually coincide with the inception or introduction of a new major cultural tradition. A prime example would be the differentiation of the Southwest United States area from the nearby Great Basin area which partially surrounds it. At an early period the two areas were one, with the whole characterized by the Desert cultural tradition. Later, with the rise of village farming patterns and the beginnings of the Southwestern cultural tradition, the Southwest area came into existence. Often, however, the 'hearts' or 'cores' of culture areas remain relatively fixed, with only the borderlands expanding or retracting with the passage of time. Sometimes this is true even in spite of major cultural traditional shifts. Thus, the Eastern Woodlands of North America maintained an integrity as a culture area, as the homeland of the earlier Archaic tradition and of the two later traditions which succeeded it—apparently a testimony to the powerful conditioning factors of natural environment in culture development, at least under certain conditions. In sum, archaeological culture areas must be compromises which will embrace a significant cultural unity through a significant span of time.

Jennings's (1968:4-5) brief comment on the relationship between ethnographic and archaeological culture areas is appropriate to the present concern with Central California archaeology:

> . . . Kroeber does emphasize the variation in cultural intensity from area to area and notes that in areas of greatest intensity, climaxes or cultural richness and complexity can be recognized. His identification of cultural climax areas is derived from ethnographic data but tends to agree with archeologic findings, so that some ethnographically delineated culture areas are also fairly accurate demarcations of culture difference and similarity in the prehistoric periods. For example, the climaxes observed archaeologically in the Southeast and Southwest were identified by Kroeber from ethnographic data.

In his early summaries of California's position in regard to culture-areas, Kroeber (1920, 1925) included the bulk of California, the area usually referred to as Central California, with the Great Basin to form a single culture-area. Northwestern California was included with the North Pacific Coast culture-area and Southern California was included with the Southwestern culture-area. In his later work, however, Kroeber (1936, 1939:53-54) isolated a separate California culture-area:

> Otis T. Mason made his California area include Oregon. Wissler makes it coterminous with California, except for excluding the southeastern corner of the state and including western Nevada. My classification gives southern California to the Southwest, the northwestern corner to the Northwest Coast, the northeastern. . . to the Great Basin, the eastern or trans-Sierra fringe also to the Basin. This leaves to the California area only the region which in earlier classifications, made with a local rather than continental view, I called Central California. Essentially, this area consists of the Great (or Interior) Valley of California with the Coast Ranges and Sierra Nevada that flank it.

Driver and Massey (1957), employing detailed statistical analysis, also distinguished California as a separate culture-area, but differed from Kroeber in that Southern California and the northwestern corner of Baja California were included as part of the California area rather than the Southwest area. Willey (1966:361ff.) utilized a demarcation of the California area similar to that of Driver and Massey in his summary treatment of archaeological culture-areas, but added Northeastern California, which Driver and Massey had placed in the Plateau area.

The changes in status of California vis-à-vis its culture-area assignments are in large part measures of

the diversity of its cultures and the strength of influences from the surrounding culture-areas, both of which factors are closely related to the physiographic diversity of the state. Kroeber (1920:151), recognizing this complexity, was explicit in emphasizing that the divisions he had made of California did not imply identity of culture:

> . . . any map of this nature creates an erroneous impression of internal uniformity and coherence. Thus, all in all, it is true that the 'central' Yokuts are probably more similar to the 'central' Wintun in the totality of their life than to the 'southern' Gabrielino. But innumerable cultural elements have reached the Yokuts from the south, and they themselves have very likely developed local peculiarities of which some have filtered across the mountains to the Gabrielino. Consequently, any statement which tended to create the impression that the Yokuts and Wintun belonged to a block of nations in which certain traits were standard and exclusive, would mislead.

In his later work Kroeber (1939:55) recognized three subdivisions within Central California, including the climax regions, which he extended from "the lower Sacramento to the Russian River." Klimek (1935), on the basis of his comprehensive statistical analysis, made even more internal distinctions.

Within the Central California subarea the existing archaeological sequence was established from excavations conducted primarily within what was the ethnographic territory of the Plains Miwok, located in the lower Sacramento Valley. Although it has not been expressly stated, the assumption appears to have been that the archaeology of this region adequately represented the climax region of Central California. Thus, following the implications of the culture-area concept, marginal or border regions were not important to the understanding of the cultural development of the area under consideration, since their cultures derived from traits which spread from one or more climax regions.

It is illuminating to analyze a portion of Heizer's (1964:126) recent review paper from this perspective. He defined Central California as follows:

> Central California, defined here as the region lying between Tehachapi (where the Sierra Nevadas join with the Coast Range) in the south to the head of the Sacramento Valley in the north, and the ocean coast on the west to the Sierra Nevada crest on the east, may be divided into three zones: (1) coastal (i.e., shore plus Coast Range section), (2), interior valley (the combined Sacramento and San Joaquin valleys), and (3) Sierran (western slopes of the Sierra Nevada).

Although not stated explicitly, Heizer's "zones" are physiographic divisions, and he appears to imply that the zones can also be treated as separate cultural units, with each showing variation from the basic regional sequence according to environmental influences. "Generally speaking, allowing for local ecologic adjustments to tidal shore (as against valley riverine locale), the Middle and Late sequence on the bay conforms to that already sketched for the Interior Valley [read: for the lower Sacramento Valley]" (Heizer 1964:129). The idea that border or marginal areas can be referred to climax regions is also illustrated in the following statement by Heizer (1964:130): "Just west of the head of the Sacramento Valley, in the Coast Range section, salvage archaeology in reservoir areas has yielded an abundance of later materials that are basically central Californian in type [read: basically similar to the lower Sacramento Valley in type] but are modified by influences reaching southeast from the distinctive culture development of northwestern California."

The emphasis upon the prehistory of culture climax regions, based upon the assumption that the significant cultural developments of the area had their origins in such regions, not only produces a difficulty in the classification of marginal or border region cultures (which could be considered simply a mechanical procedure), but more importantly serves to obscure cultural processes, some of which may be unique to marginal or border regions and some of which may strongly influence the course of development of climax cultures. For example, evidence of population movement or territorial expansion may be recovered archaeologically only in marginal or border regions.

Heizer's definition of Central California also carries the implicit assumption that a cultural unit with a predictable degree of homogeneity is contained within the geographic space included in the definition. When data are available to demonstrate that the

geographic space is *not* predictably culturally homogeneous, there is no corresponding change made in the definition of the space. Thus, the culture-area model serves as a principle from which propositions concerning the nature of specific marginal cultures can be deduced. These deductions should be tested as hypotheses and subjected to modification when data warrant.

For example, the southern San Joaquin Valley, included in Central California by Heizer, was briefly characterized as follows:

> In the southern San Joaquin Valley...[there is] a long sequence of cultures that go back to the same period as the Early Horizon culture [of the lower Sacramento Valley] and continue into the historic period. The Late period shows influence from the Santa Barbara coast, as well as from the Colorado region (Heizer 1964:128).

It is of interest that, despite placing the region within the Central California subarea, no claim for identity or relatedness of southern San Joaquin Valley materials with the lower Sacramento Valley is made, only a temporal connection. Examination of archaeological materials from the southern San Joaquin Valley (Gifford and Schenck 1926; Fredrickson 1964; Wedel 1941) reveals virtually no direct relationship with lower Sacramento Valley materials; instead, the similarity with Santa Barbara coastal materials is quite clear. It is evident that the southern San Joaquin Valley does not belong culturally with the Central California subarea, regardless of its physiographic characteristics, but instead should be included with the Southern California Coastal subarea. This suggestion is compatible with Kroeber's (1959) discussion of Yokuts geographic movements (based upon linguistic relationships), wherein he suggested that the movement of Yokuts into the northern San Joaquin Valley is relatively recent, probably beginning no more than 500 years ago, and that the major late expansion of Yokuts "has almost certainly been toward the delta, not from it" (Kroeber 1959:277).

Kroeber's discussion in itself is provocative in regard to our understanding of the prehistory of the Interior Valley. In the discussion here so far, problems of dealing with marginal and border archaeological manifestations in terms of the lower Sacramento Valley have been emphasized. If we move to a region immediately adjacent to the lower Sacramento Valley, namely, the northern San Joaquin Valley, which presumably should have undergone the same development as its neighbor region to the north, we find at least one significant difference, which has been little noticed until quite recently. This difference occurs in the mortuary practices found within the northern portion of the San Joaquin Valley as contrasted with the practices reported for the three-part cultural sequence of the lower Sacramento Valley.

Each of the three cultural units in the Central California sequence has characteristic or modal mortuary practices (Heizer 1949; Beardsley 1954). The Early Horizon is characterized by fully extended burials, face down, most frequently oriented to the west. Flexure and cremation also occur, but rarely. During the Middle Horizon, the prone burial position is rather abruptly replaced by the flexed burial position along with variable burial orientation. Occasional cremation also occurs. During the Late Horizon both flexed burial and cremation take place, with cremation becoming more important as the Late Horizon continues. Orientation continues to be variable.

Until quite recently occurrences of extended burials (whether prone or supine, regardless of orientation), which lacked clear-cut artifactual linkages to defined cultural units, were often referred to the Early Horizon simply on the basis of extension. A brief unpublished report on Fre-373, in Fresno County, evaluating the dating of the site on the basis of burial position, illustrates the point. "The belief that the undisturbed burials in block 22 might be Early Horizon was based on the fact that the burials were all extended, and regularly oriented west..." The report continued with an alternative temporal placement, showing the influence of finds in nearby Merced County (Olsen 1968; Riddell 1968): "However, recent information suggested that the burials might be from the early phases of the Late Horizon. This theory had its origin in the fact that the Yokuts apparently returned to extended burial during that time" (Milner 1964).

The apparent return to extension noted above refers to findings from site Mer-14 in Merced County where both supine and extended burials and flexure were recovered from a context clearly dated by artifactual similarities as contemporaneous with the early

portion of Phase 1 of the Late Horizon (Riddell 1968; Olsen 1968). Additional evidence is accumulating, however, which allows the working hypothesis that the occurrence of extended burials in the San Joaquin Valley during temporal periods more recent than the Early Horizon is not necessarily a *return* to extension, but possibly a continuation and modification of a mortuary tradition which had its origins during the period represented by the Early Horizon. Extended burials found at Buena Vista Lake in the southern San Joaquin Valley (Wedel 1941) are acknowledged as being in all probability coterminous with the Early Horizon of the lower Sacramento Valley.

Although no radiocarbon dates have been obtained for the Buena Vista extended burials, the presence of milling stones and handstones links the complex to the early milling stone horizon. No burials identifiable with this horizon have yet been reported from the San Joaquin Valley north of Buena Vista Lake, but it seems likely that such burials may yet be found. Extended burials representative of later time periods have been found in the San Joaquin Valley, however, in localities from the central to the northern portion of the valley. Foote (1964) in a brief unpublished communication reported dorsal and ventral extension, as well as flexure, from site Sta-133 in Stanislaus County. Recovered with these burials were full saddle Olivella beads (type 3b) which are middle Middle Horizon time markers in Central California (Bennyhoff and Heizer 1958). King (1968) also reported dorsal and ventral extended burials, as well as loose flexure, from site Mad-117 in Madera County, which he dated on the basis of artifactual analysis as "roughly contemporaneous with the Brazil and Need phases [of the Middle Horizon] in the Cosumnes Locality . . . in the 2-3000 year B.P. time slot."

In Contra Costa County, in a district adjacent to the northern San Joaquin Valley, unexplained ventrally and dorsally extended burials were reported from site CCo-141 (site C.141) from a Middle Horizon context. Of this occurrence, Lillard, Heizer, and Fenenga (1939:55) wrote:

> It is impossible to account for the variety of burial positions—the ventrally extended posture has heretofore been noted only in the Early period; dorsal extension may occur in Late period sites (e.g., site S.1, S.3) though it seems localized in its manifestations. It is possible that the Transition horizon of site C.141 is closely connected with the Early period and derives the extended burial position from it, yet the material culture speaks against this since there are few Early artifact types present. Probably the situation is this—in this Delta area is a local specialization in the mortuary complex, the development of which was more or less independent of the Mokelumne-Cosumnes region further north and east.

More recently, dorsally extended burials have been recovered from site CCo-31 near Pleasant Hill in Contra Costa County in association with type 3b2 modified saddle Olivella beads (Kemnitzer 1968), which are late Middle Horizon time markers (Bennyhoff and Heizer 1958).

This distribution in time and space of extended burials, while not by any means conclusive of the working hypothesis suggested earlier, can be taken to support the argument that the culture history of the San Joaquin Valley differs significantly from the culture history of the lower Sacramento Valley and that a priori application of the lower Sacramento Valley three-part cultural sequence to all of Central California is not warranted. Although evidence has been presented here in support of the working hypothesis that the peoples of the San Joaquin Valley followed a cultural pattern different from that of the lower Sacramento Valley, it seems quite clear that the cultures of both regions were variants of the Archaic pattern. It is on this higher level of generalization that the culture-area concept seems useful. That is, during the chronological period in question, all the cultures of Central California appear to have been at the Archaic stage of development.

While the classification of prehistoric California groups as Archaic is a valid procedure, the long time span encompassed by the Archaic stage itself obscures the fundamental processes and differences between groups so classified. Significant processes and differences expected on the basis of the large area and great ecological diversity within the Central California subarea are blurred. As a step toward rectifying this situation, the existing practice of dropping the horizon concept as used in the Central California system and substituting sequences of locally or regionally defined complexes, while perhaps satisfactory for

local interests, does not suffice for synthesizing or integrative efforts. In the following pages modifications which have already been made in, or suggested for, the Central California Taxonomic System (CCTS) are discussed, and a proposal is offered for integrative units which seem appropriate for the current state of knowledge in Central California.

The Central California Taxonomic System and Recent Modifications

I have previously discussed the basic organization of the CCTS, the definitions and concepts employed in it, and some of the reasons why it should be at least partially abandoned. I suggested that several factors contributed to this situation, among them the absence of any discussion as to the minimum number of specific features that are diagnostic of each of the horizons and also the failure to separate the cultural from the temporal dimensions, confounding cultural horizon markers with temporal horizon markers. Apart from the operational modifications which seem to have developed without any explicit formulation, there have been a number of changes explicitly suggested for the system. Bennyhoff (1977), for example, grouped "sites which were occupied by culturally related people into localities which have been named after some feature of the local geography." Bennyhoff's localities, which appear to be somewhat but not completely concordant with the provinces of the Central California scheme, were found to correlate with the territories occupied by language groups—Cosumnes locality: Plains Miwok language; Sutter locality: Valley Nisenan language; Solano locality: Southern Patwin language; Diablo locality: Bay Miwok language; Stockton locality: Northern Yokuts language. More recently Bennyhoff has substituted the term *district* for locality. Both terms are discussed in more detail below.

Ragir (1972), in her monograph on the Early Horizon, did not continue Bennyhoff's usage but retained the term *province* apparently unchanged from its original application despite Bennyhoff's findings. Ragir's (1972:table 1) chart on Central California culture classification showed the Delta Province occupied by Plains Miwok, Southern Patwin, and Nisenan, with no mention of the finer distinctions offered by Bennyhoff. Ragir did make two significant changes, however. First, she discarded the terms "Early," "Middle," and "Late," substituting for them "Windmiller," "Cosumnes," and "Hotchkiss," respectively. Second, she replaced the term "horizon" with the term "culture."

Referring to "growing evidence of very early cultures in Southern California," Ragir (1972:9) made the following cogent comments:

> Given the present system of naming groups which are typologically and temporally related, one would have to call an earlier culture, the 'Earlier Early Horizon.' Furthermore, the tripartite system in a local sequence invariably causes confusion when one compares sites from one area to those of another which has either temporarily or permanently classified its local sequence in a similar fashion. Thus, one finds the Early Lovelock culture coeval with the 'Middle Horizon' in Central California and the Late Phase of the Desert Archaic... 'Early', 'Middle', and 'Late' designations limit pre-history to three phases despite the fact that evidence sometimes suggests four or more changes important enough to warrant equivalent classificatory recognition.

Ragir (1972:9) went on to state that "archaeological cultures ought to be named after the type localities or, where adequately excavated type localities do not exist, after geographical regions where large numbers of sites occur and there is a possibility of further work." She chose, however, to "classify the temporal-cultural division defined by California archaeologists as cultures named after the type sites or regions important in their early history." Thus, Windmiller culture was selected for Early Horizon, Cosumnes culture for Middle Horizon, and Hotchkiss culture for Late Horizon.

Ragir's reasoning for substituting the term "culture" for the term "horizon" is , however, not directly related to the criticism of the concept which I have developed. She (Ragir 1972:8, my addition) wrote that:

> Based on considerable evidence that several 'Early' sites represent more than just burial complexes, this [study] introduces some modifications of Central Californian archaeological nomenclature. The combination of village and cemetery had long been recognized in 'Late' and 'Middle' period sites in the Central Valley. With the presence of 'Early' sites of

> both habitation midden and cemeteries, a record of the major portion of the cultural activity taking place would exist, and the settlements would deserve the status of a cultural tradition. Although the designation of 'Culture' to archaeological materials had not yet come into use, Heizer implied such a status in his paper on the 'Early Horizon.'

Ragir did not define "culture," nor did she elaborate further as to how the two terms might differ.

In the fall of 1967 the Center for Archaeological Research at Davis, in conjunction with the Society for California Archaeology, issued invitations to a number of archaeologists to attend an evening workshop at the University of California, Davis to discuss current problems in California archaeology. Individuals representing at least fourteen institutions and organizations attended this highly successful meeting, which turned out to be the first of six such workshops held over the next two years (Nov. 22, 1967; Feb. 10-11, Mar. 31, Nov. 9-10, 1968; Feb. 22, Oct. 25-26, 1969 [the October 1969 meetings were held at Sacramento State College, the remainder at Davis]). Among many diverse topics brought up during these meetings was the CCTS and proposed revisions in it.

The workshops were initially quite successful. The concept of *locality* (as utilized by Bennyhoff [1977]) was tested in a series of subsequent presentations by regional specialists, with general agreement that local assemblages could be distinguished on the basis of stylistic differences. Evidence also was presented regarding apparent contemporaneity of the Middle Horizon culture-type in the Littoral Zone of Central California with the Early Horizon culture-type of the Interior Valley Zone. There appeared to be general agreement that the CCTS was outmoded, and a number of suggestions were made in regard to terminological revision. For example, it was suggested that the terms Early, Middle, and Late be replaced by terms which do not imply temporal sequence. It was also suggested that the term "horizon" be dropped and replaced by either "culture," "tradition," or "pattern." A conceptual suggestion was made that stylistic factors not be included as diagnostic criteria in the taxonomic scheme and be kept separate from techno-economic factors. Ultimately, however, no general agreement was reached as to details of revision.

Throughout the discussions it was reiterated that individual workers try utilizing some of the proposed revisions in order to test their usefulness, but refrain from employing them in publication until a definite consensus had been achieved. Unfortunately, no consensus was achieved, but publication did occur. Following the March 1968 workshop, Gaumer (1968) published a note in the Newsletter of the Society for California Archaeology in which he reported that "tradition" had been selected as a basic term to replace "horizon" and that the following changes in terminology had been agreed upon: Augustine Tradition for Late Horizon; Emery Tradition for Middle Horizon; and Windmiller Tradition for Early Horizon. Gaumer stated that "All present agreed to use this new terminological system in their own areas, and have set Fall of 1968 as the date for another colloquium for presentation of progress reports." Later workshops rendered Gaumer's announcement premature when alternate revisions were suggested, including substituting Berkeley for Emery and pattern for tradition, but with no final agreement reached. Terminology reported by Gaumer has since appeared in print. King (1968:116), for example, employed "Emery Tradition" for "Middle Horizon," as well as other terminology introduced in the workshop context, and Schulz (1970:187) published "Windmiller Tradition" for "Early Horizon," stating that "While this concept will undoubtedly undergo considerable redefinition in the future, as used here it is only a modification of the 'facies' concept (Beardsley 1948:3)."

So it was with the CCTS: agreement that the original framework was no longer workable, lack of consensus on revisions, and *de facto* introduction of terminology which was in the discussion phase. In the discussion to follow I offer a revision of the CCTS, incorporating what I believe to be some of the basic agreements arrived at during the Davis workshops and taking into account the modifications already suggested by such workers as Bennyhoff and Ragir. I begin the discussion with spatial units, then move on later to consider cultural units.

Spatial Units

The units I employ here to designate the geographic space occupied by various cultural units are essentially those of Willey and Phillips (1958). These

are the site, locality, region, subarea, and area. An important additional spatial unit, midway between the locality and the region, is the district (Lehmer and Caldwell 1966). One of the major reasons for employing these terms, rather than those presented by Beardsley (1948, 1954; see also Heizer 1949), is that the Willey and Phillips terms are more generally used throughout the New World. It should be emphasized that the boundaries of the various spatial units may shift through time, as the different cultural units which occupy their geographic spaces shift their boundaries. Definitions of spatial units which rest solely or primarily on geographic or physiographic criteria are not adequate for archaeological analysis. For example, the inclusion of the southern San Joaquin Valley with the Central California prehistoric culture area (as defined by Heizer 1964:126) is not justified on the basis of archaeological material so far recovered. In regard to spatial units smaller than the area, Bennyhoff (chapters 1 and 8, this volume) has demonstrated the expansion and contraction of the Stockton District across three physiographic provinces at the end of the Middle Horizon in Central California.

Site, Locality, and District. An archaeological *site* was described by Willey and Phillips (1958:18) as "the smallest unit of space dealt with by the archaeologist and the most difficult to define." Without minimizing the many problems involved in the uniform definition of a site, and pointing out that the same site may be assigned to differing larger spatial units at different times in its history, it can be defined as "a discrete area fairly continuously covered by remains of former human occupation or providing evidence of human activity" (chapter 2, p. 13).

According to Willey and Phillips (1958:18) the *locality* is "generally not larger than the space that might be occupied by a single community or local group." They stated that "In strictly archaeological terms, the locality is a geographical space small enough to permit the working assumption of complete cultural homogeneity at any given time." Evidence already available indicates that complete cultural uniformity was often shared by several local groups, which during the ethnographic period in California are called tribelets, that is, autonomous social units intermediate in size between bands and tribes (Kroeber 1962). In chapter 2 Bennyhoff and I suggest that the locality usually reflects cooperative groups of tribelets. Since differences between tribelets within the locality often involve only percentage frequencies, the total culture can be considered "completely uniform."

Bennyhoff (1977) has employed the term district to Central California materials utilizing highly detailed comparisons of cultural inventory. He states that in California, an area of reasonably stable population, there is sufficient evidence available to allow the equation of districts with language groups in the Protohistoric and later prehistoric periods. Bennyhoff's Diablo District, for example, includes the Bay Miwok tribelets of Saklan, Chupan, Wolwon, Julpun, and Ompin. Bennyhoff divides the Diablo District into two localities (Oakley and Walnut Creek), each with two or three tribelets.

The district is the geographic space, normally larger than a locality but smaller than a region, which exhibits a significant degree of total cultural uniformity among its constituent components. The district is the basic spatial unit of analysis in the phases, the basic temporal units which are coterminous with district boundaries. Only one phase exists in one district at any one time. In ethnographic terms in California the unity exhibited within districts is possibly related to the ease of linguistic communication plus factors such as dance and ceremonial exchanges documented for the Kuksu and Ghost Dance.

Ideally districts are defined in contrast to adjacent districts where cultural differences are readily apparent. Most districts appear to have a distinctive ecological core, but the peripheral boundaries often fluctuate, sometimes radically, into adjacent physiographic provinces. Various reasons can be offered for the fluctuation, such as climatic change, acculturation of and by adjacent groups, and population expansion, but such reasons often remain hypothetical unless a large body of analyzed data is available.

Region, Area, and Subarea. The *region* of Willey and Phillips (1958:19) "is roughly equivalent to the space that might be occupied by a social unit larger than the community, a unit to which we may with extreme trepidation apply the term 'tribe' or 'society.'" In Central California, where tribes in the sense conveyed by Willey and Phillips were absent, the cultural similarities would appear to be due to both direct and indirect interaction (including trade net-

works) and to tribelet environments which resembled each other enough to allow the development of similar subsistence activities. A region in Central California, then, could include speakers of different languages, for example, Bay Miwok, Plains Miwok, and Southern Patwin.

The region in some respects is similar to Beardsley's (1954:6-7) concept of *province*, which has both geographic and cultural significance, being defined as a geographic grouping of several facies formed on the basis of cultural resemblances. Beardsley recognized that the boundaries of a province can change from one period to the next and accounted for the possibility by naming the provinces of each successive time period separately.

The *area*, following Willey and Phillips (1958:20) "corresponds roughly to the culture area of the ethnographer." The identical difficulty applies to the archaeological culture area as to the ethnographic culture area: although both may have general physiographic integrity, the boundaries are not easy to define as those of the smaller region. In each case, examination of cultural inventories is necessary to determine areal boundaries. California as an archaeological area would include several *subareas* (Willey and Phillips 1958:20), that is, "territories of geographical extent intermediate between the region and the area which possess qualities and degrees of cultural unity." During different cultural periods, subareas may differ as well. For the Protohistoric period Central California would be one such subarea, the Southern California Coast another. As has been mentioned, the boundaries of any one subarea may intrude into the physiographic space of another subarea, as in the example of the southern San Joaquin Valley relating culturally to the Southern California Coastal subarea, rather than to the Central California subarea, despite physiography.

In practice, with the exception of the site, each of the spatial units, from the locality to the area, may be conceived in terms of an ecological core, becoming more generalized as one proceeds from the locality to the larger geographic units. It is at the borders of each of the territories that the assignment of the space occupied by a particular culture becomes dependent upon cultural factors, rather than ecological ones. In the final analysis, the assignment of a particular geographic space to one district or another, or to one subarea or another, is dependent upon cultural rather than strictly ecological or environmental factors. The nature and extent of any particular spatial unit cannot be assumed a priori but must be determined by cultural analysis and comparison. To illustrate the above discussion, a classification of some of the spatial divisions in California, adapted from chapter 2, appears in table 3.1.

Cultural Integrative Units in Central California Archaeology

In general, my use of cultural units follows Willey and Phillips (1958:21-40), but two additional concepts are introduced which appear useful for understanding the Central California materials. These two concepts, discussed in greater detail below, are the *pattern* (cf. chapter 2), used to integrate materials from one or more regions, and the *aspect*, a district integrative unit, similar but not identical in meaning to its use in the Midwestern Taxonomic System (McKern 1939).

Component and Assemblage. The archaeological *component* was defined by Beardsley (1954:6) as the "archaeological record of human occupancy at a single locality at a specific time." Although Beardsley's definition is essentially identical with the Willey and Phillips (1958:21-22) definition of the same term, the word "locality" is not used with the precise meaning of Willey and Phillips. Concordance can be achieved by replacing the "single locality" of the Beardsley definition with the phrase "specific site." Heizer (1949:2) introduced the term "settlement," favoring it over the equivalent term "component," which was already in use in the Midwestern system. Later, however, Beardsley (1954:6) selected component since, although components might well be "entire settlements or communities," they "need not necessarily be so." Although the term *assemblage* is sometimes used to refer to the totality of artifacts from a given site, in this essay the assemblage is the totality of artifacts found in any one component. Thus a stratified site containing three cultural components would also contain three artifactual assemblages.

One of the first tasks of the archaeologist as fieldworker is the definition of the various components represented by the site under investigation. In

TABLE 3.1

Some Archaeological Spatial Units in California

- California Area
  - Southern California Coastal Subarea
    - Southern San Joaquin Valley Region
  - Central California Subarea
    - San Francisco Bay Region
      - Alameda District
        - Carquinez Locality
        - Oakland Locality
        - Newark Locality
        - Livermore Valley Locality
        - Santa Clara Valley Locality
        - Peninsula Locality
      - Marin District
    - Delta Region
      - Diablo District
        - Oakley Locality
        - Walnut Creek Locality
      - Cosumnes District
        - American Locality
        - Cosumnes Locality
        - Mokelumne Locality
      - Solano District
      - Stockton District
    - North Coast Ranges Region
      - Mendocino District
      - Clear Lake District
    - Northeastern California Region
    - South Coast Ranges Region

some cases, such as in a deep, physically homogeneous site, this cannot be achieved completely until excavations have been completed and careful analysis of the distribution of all recovered cultural materials has been made. In many cases, however, a fieldworker can distinguish between the various cultural components on the basis of observed physical stratigraphy in the field and later analysis will usually confirm and add greater detail to the initial working hypothesis.

Phase and Aspect. The concept of *phase* employed here is identical to that of Willey and Phillips (1958:22ff.). Since the term "phase" is in wide usage throughout the New World, it is preferred to the equivalent terms *focus* of the Midwestern Taxonomic System (McKern 1939) and the *facies* of the existing Central California cultural classification system (Beardsley 1954:6). Willey and Phillips (1958:22) described *phase* as, "an archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of a locality or region and chronologically limited to a relatively brief interval of time." The phase is the smallest cultural unit recognizable in space and time in Central California (see chapter 2). The use of the term "phase" in Beardsley's Central California framework, as in Phase 1 and Phase 2 of the Late Horizon,

includes much greater geographic space than even the region suggested by Willey and Phillips, and in use is more closely equivalent to the period concept, discussed below.

Although Willey and Phillips designated the phase as "the practicable and intelligible unit of archaeological study," it must be pointed out that the phase, as conceptualized here, can only be defined precisely after a considerable amount of comparative analysis of larger, more generalized units has been carried out. In practice larger prehistoric cultural units are not "built up" out of phases, the smallest discernible unit, but phases are analyzed out of the larger units. Thus, to a large degree, phase distinctions involve recognition of cultural differences comparable to those made between two adjacent societies within a common environmental setting. In regard to technology, economy, social and political organization, and ceremonial practices, such societies will probably be quite similar, but in language and many nuances of culture they may be quite different. Most importantly, they experience themselves as different peoples. The recognition of phase differences, then, involves recognizing cultural nuances, often expressed as stylistic differences, which distinguish two similar societies from one another. I have employed the term "societies" here, rather than cultures, since archaeological cultures usually are not isomorphic with discrete ethnographic cultures but are comparable to groupings of cultures such as those found in culture areas (cf. Rouse 1965). This problem is discussed in more detail in the section on "district markers."

The definition of phases and their temporal and spatial relationships with one another allow the recognition of many processes, ranging from those involved in the interaction of two adjacent societies, to those accompanying alterations in the environment, to those hypothesized on the basis of systems theory (Boulding 1956; Hall and Fagan 1956; both cited in Hole and Heizer 1969:378ff.). For example, elsewhere (Fredrickson 1974b) I have developed the working hypothesis of a growing importance of social ranking in the Walnut Creek locality of the Diablo District on the basis of systematic differences in burial practices during successive phases of the Emergent period (Late Horizon) beginning perhaps 2000 years ago and culminating in the Protohistoric period.

In the earlier discussion of the *district*, it was stated that only one phase existed in one district at any one time, and that the cultural uniformity found within a district during any phase was possibly related to the ease of verbal communication plus factors such as dance and ceremonial exchange. A sequence of phases within a single district is referred to herein as an *aspect*. Both phases (during a single time interval) and aspects (usually covering several time intervals) are district representatives of a *pattern*, a generalized cultural configuration usually encompassing one or more regions. These are discussed in greater detail below.

The aspect is often discernible in the archaeological record before its constituent phases can be isolated, but like phases the aspect is analyzed out of a larger, more generalized unit, the pattern. Procedurally, the pattern is the most readily identified configuration in an archaeological component. As spatial data come under control, the pattern can be broken up into a number of aspects. As temporal data come under control, the aspects can be subdivided into constituent phases. In this scheme, patterns themselves are not broken up into phases, but rather the temporal dimension is subdivided on the basis of *time markers*, technically artifacts or stylistic details on the order of the horizon-style of Willey and Phillips (1958:29ff.), which are limited in temporal distribution.

The analytic isolation of the aspect is greatly dependent upon what are called district markers here (cf. Bennyhoff 1977), that is distinctive artifacts, qualities of workmanship, or stylistic details which are limited in spatial distribution. Some district markers may persist through time for a short while, and others may persist for a prolonged period. District markers may also serve as time markers within the districts in which they occur. The definition of the phase, then, is dependent upon the intersection within an assemblage of district markers and time markers.

District Markers and Time Markers

Archaeological workers in Central California have placed a great emphasis upon certain artifact forms and stylistic detail, such as the forms of shell beads and ornaments and the ornamentation on bone and shell artifacts, because of their proven value in

showing temporal relationships between assemblages in different regions. Bennyhoff and Heizer (1958), for instance, discussed the value of California shell beads for the cross-dating of Great Basin archaeological sites, while Baumhoff and Byrne (1959) and more recently O'Connell (1967) have suggested the utility of employing certain forms of projectile points as temporal markers. With the exception of Bennyhoff's (1977) study, rather little attention has been focused upon cultural characteristics which assist the analyst in distinguishing between one community or group of communities and another. These characteristics, combined under the heading of *district markers*, may vary from the quality of workmanship exhibited in the manufacture of fish spears to the characteristic designs incised upon bone tubes (Bennyhoff 1977).

Beardsley's (1954:76ff.) comparative discussion of the Late Horizon in the Cosumnes (Delta in Beardsley's table 1) and Colusa provinces included itemization of traits helpful in the cultural differentiation of one province from the other. His interpretation refers to the cultural detail of a specific cultural group:

> Areal differentiation is brought to attention... by the appearance of traits in an earlier facies of one province than of another. Traits of Hollister Facies, for example, which are absent from Sandhill Facies components but appear well marked in Miller Facies of Phase 2 include: fully flexed burial in dug grave pits; pre-interment burning in the grave pit; deep, angular serrations on obsidian points; incised bird bone tubes; single-piece, bilaterally barbed fish spears; banjo-shaped ornaments of Haliotis shell...; general elaboration in forms and decorative styles of abalone ornaments . . .; and Olivella bead type 3e . . . In the reverse direction come relatively few traits: tubular and disc magnesite beads are found in Sandhill Facies (Miller B Component) as well as Miller Facies, but do not arrive in the Cosumnes Province until Mosher Facies develops. The regularity with which the southern traits occur in Phase 2 Howells Point Component in the north, in contrast to their spasmodic appearance in associated sites of the Miller Facies, has led Heizer [1941:109] to suggest northward migration of a Delta group as a cause rather than simple spread of elements.

Hole and Heizer (1969:43) expressed a common archaeological view when they stated that:

> We expect that people who occupy a common territory and share a common material culture will also share such things as language, ideas about right and wrong, preference in art, religion, and other intangible traits. These elements of nonmaterial culture are not recovered by prehistoric archaeologists, but every effort is made to make inferences about the social and nonmaterial aspects of the remains they examine.

We may add to this that data are also available which inform us that material products themselves often are invested with nonmaterial meaning related to cultural identity. Dawson (1963), for example, has pointed out that cultural standardization in mush boiling baskets (and presumably other basketry forms as well) is accomplished through mutual criticism of the makers, that is, by ridiculing deviations from the norm. Thus, Whilkut mush boiling baskets can be consistently differentiated from the mush boiling baskets of the neighboring Yurok, who exhibit and reinforce a different standardization: "the shape was different and the weave of the lateral reinforcement was different." Dawson added that in the teaching of the young, instructions include "not only technical manipulations but also the tribal ethos and style precepts about baskets."

Food preferences show that cultural identity may have at least partially an ecological basis. DuBois (1935:6-7) reported that various subgroups of the Wintu ridicule one another in regard to food preferences: "The Upper Sacramento Wintu were called derisively 'mussel eaters' and ridiculed by the McCloud Wintu for grinding deer bones into flour, to which the Upper Sacramento people responded that the McCloud people ate salmon-bone flour and 'besides they stank of salmon and bear.'" If we can expect actual food preferences to parallel the food prejudices, we can hypothesize that an abundance of "mussel" shells in archaeological sites in one Wintu district as contrasted with another would reflect not only local availability but also the identity of the specific Wintu subgroup. Further, we could hypothesize that there would be a relative abundance of mussel debris in Upper Sacramento Wintu sites where local availability would not support this prediction. In this regard, I (Fredrickson 1969) have inferred movement or expansion of a bayshore-oriented society into the interior Walnut

Creek locality partly on the basis of changes in dietary practices, including a change marked by an abundance of marine molluscan remains where previously such remains were virtually absent.

DuBois's data are particularly interesting in that she "lays stress upon behavior and attitudes of minds" rather than simply "presenting what may be called the type culture" (DuBois 1935:1). Unfortunately, most of the existing ethnographic accounts of California Indian groups do not contain the wealth of attitudinal information that DuBois's work on the Wintu contains. There are occasional references, devoid of the affective implications, that cultural traits, including decorative elements, are related to cultural identity. Gifford (1965:56) for instance, stated:

> The tattooing on the women's faces was different among each tribe or group in this general region, and the Coast Yuki show that they form no exception to this rule. They used fine marks in considerable quantities on the cheeks and chin, but did not employ heavy wide chin-tattooing as did some other tribes.

On the basis of these kinds of data, it can be postulated that when two cultures are closely related to one another in total organization and content, the identity of each group may be projected into what might appear to be minor cultural detail. This detail may be invested with emotional significance not necessarily corresponding to its seemingly minor significance to the culture generally. It can be further postulated that at least a portion of the concept of district markers themselves may be the equivalent of material symbols of cultural identity.

Earlier in this essay the concept of *horizon* as used in Central California was criticized on the grounds that the binding of time and culture into a single concept was unduly limiting. The Central California usage can also be contrasted with widespread New World usage of the term horizon. Willey and Phillips (1958:29ff.) defined horizon as "a primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread." They emphasized that:

> The archaeological units linked by a horizon are thus assumed to be *approximately* contemporaneous. The word is italicized because it is recognized that horizons based on cultural criteria unsupported by independent dating may have considerable temporal depth and that the assumed correlation is not necessarily horizontal but may, and probably does, have a 'slope' depending on the amount of time required for the spread of the elements used as horizon markers.

This definition is similar to the use of horizon in the Central California cultural sequence except that in the Willey and Phillips concept the horizon would occupy a very short time span (cf. Deetz 1967:59ff.) rather than the thousand years or more of each of the California horizons. The example given above, wherein certain traits occur initially in the Cosumnes Province during Phase 1 of the Late Horizon and then later in the Colusa Province during Phase 2 of the Late Horizon, would seem to fit the Willey and Phillips definition but for several shortcomings. The criterion of "broad and rapid spread" is not clearly met; the two facies concerned here are not approximately contemporaneous; and in chronometric terms, Phase 1 lasted perhaps 1000 years and can now be divided into a number of smaller temporal units while Phase 2 lasted close to 300 years and can also be divided into smaller temporal units.

The above example highlights the difficulty of applying even the Willey and Phillips concept of horizon in Central California archaeology. The more valuable concept for Central California is not the horizon, but the *horizon-style*, which, according to Willey and Phillips (1958:32),

> may be roughly defined as a specialized cultural continuum represented by a wide distribution of a recognizable art style. On the assumption of historical uniqueness of stylistic pattern, coupled with the further assumption that styles normally change with considerable rapidity, the temporal dimension is theoretically reduced to a point where the horizon-style becomes useful in equating phases or larger units of culture that are widely separated in space.

It is apparent that the horizon-style of Willey and Phillips is simply another formulation of the well-known concept of cross-dating on the basis of artifact similarities, but with emphasis upon art styles rather than upon just artifacts in general and with the implicit assumption that the horizon-style is representative of the horizon assemblage.

Because of the emphasis upon formal art style, Willey and Phillips (1958:32) state that the "horizon-style concept has limited application, since it presupposes a level of aesthetic development that many archaeological cultures in the New World failed to reach." Rowe (1959) has introduced analytic concepts which make the horizon-style concept broadly applicable, including within Central California, the cultures of which are not noted for elaborate artistic development, as contrasted, for example, with the Andean cultures of Peru. Rowe's contribution shows that the great importance of the horizon-style is not so much its potential for demonstrating culture contact, as emphasized by Willey and Phillips, but its potential for allowing precise relative dating of phases. Rowe (1959:317) aptly stated:

> Patterns of cultural change begin to appear in the archaeological record as soon as the evidence can be arranged in any kind of chronological order. With increasingly precise relative dating it becomes possible to study the circumstances under which the known changes took place and to observe others. Any development in archaeology which makes possible more precise relative dating, therefore, increases the opportunities for studying cultural process.

Rowe was concerned with changes that occur within a tradition as defined by Willey and Phillips [1958:37]—"a temporal continuity represented by persistent configurations in single technologies or other systems of related forms." He focuses in particular upon ceramic traditions in Peru. The fine distinctions possible employing the method suggested by Rowe can form the basis of horizon-style traits in synchronic interpretation. Rowe (1959:318) observed one of the handicaps of the typological concept in general use among both American and European archaeologists (cf. Willey and Phillips 1958:12-13):

> Since cultural change is normally a gradual process, it takes relatively long periods for enough change to accumulate in the appearance of a given kind of object so that it no longer qualifies as descriptively similar to the type specimen. Consequently, types set up in this way have relatively long spans of existence in time, rarely less than 200 years.

In Central California the time span of recognized artifact types may extend for literally thousands of years. Rowe (1959:320) recommended that shortcomings of typological dating can be avoided "by using significant features as the unit of study instead of types." A feature is "any characteristic or detail of an object which can be observed and isolated, whether of material or workmanship or decoration." With respect to relative dating, Rowe (1959:320) pointed out:

> The most useful features for dating purposes are those which occur frequently during a relatively short span of time and are not found earlier or later. Features which occur at the beginning of the record being analyzed, have a continuous existence, and go out before the end of the record are also useful, as are features which come in after the beginning of the record and last until the end. Features which do not occur in one of these patterns are of no use in making chronological distinctions, no matter how prominent they may be or how useful they may become in the study of other problems. They are not significant features for relative dating.

In Central California, Bennyhoff (chapter 1, 1977; Bennyhoff and Heizer 1958) has employed Rowe's method of feature analysis to define horizon-styles which have been utilized both for extensional dating and for more precise division of the existing Central California horizons into numerous phases. Bennyhoff has examined fluctuations in various features, or attributes, of shell beads, for instance, and has found that the location of the perforation in small, rectangular Olivella beads is an important temporal indicator during the Late Horizon. Similarly, during the Middle Horizon, the size of the central perforation in shell beads is a feature with temporal significance.

Thus, morphological feature analysis of various traditions, which by definition are presumed to have temporal continuity, allows the recognition of significant attributes, often attributes that appear to be minor stylistic details. This recognition allows more precise division of the aspects into phases to which the traditions belong than otherwise would be possible. Further analysis and comparison can identify those elements of the tradition which are spatially restricted to the district under consideration, (thus making them *district markers*) and those which are widely spread through space, presumably by means of trade or other similar means of transport (thus serving as *time*

markers, or horizon-styles). The horizon-style should receive the name of the style which characterizes it in order to emphasize the distributional and synchronic nature of the cultural relationship and to avoid unwarranted implications of cultural identity.

In field investigations known horizon-styles can be employed as aids in the assessment of the temporal standing of a given site or cluster of sites. No implication of *cultural* identity then need be present when a site component is temporally identified by horizon-style. Horizon-styles may also be employed by field workers as aids in the assessment of direction and intensity of cultural influences which derive from outside the locality of the site or sites under investigation.

Period and Pattern

Period and Stage. Willey and Phillips (1958: 65) have pointed out that it is only recently that formal acknowledgment has been given to the distinction between an archaeological *stage* and an archaeological *period*, citing Krieger (1953) as presenting the "first adequate developmental scheme for North America as a whole. . . [containing] the clearest discrimination between the concepts of stage and period that we have yet seen in print." It is relevant here to repeat Krieger's (1953:247-48) formulation:

> For present purposes, I will consider a 'stage' to be a segment of a historical sequence in a given area, characterized by a dominating pattern of economic existence. The general economic life and outlines of social structure of past peoples can often be inferred from archaeological remains and can be related to similar phenomena, whether the dates are known or not. The term 'period', on the other hand, might be considered to depend upon chronology. Thus a stage may be recognized by content alone, and, in the event that accurate dates can be obtained for it in a given area, it could be said that the *stage* here existed during such-and-such a *period*. Further, the same stage may be said to appear at different times or periods in different areas and also end at different times. A stage may also include several locally distinctive culture complexes and minor time divisions. A great deal of discussion is needed on these points.

Periods in California Prehistory

I suggest that California's prehistory be divided into four major chronological *periods*, with each period being named for the dominant stage. We would thus have a hypothetical "Early Lithic period," a little-investigated "Paleo-Indian period," and the firmly established "Archaic" and "Emergent" periods. Further, I suggest that the current status of substantive knowledge allows us to place the periods within a chronological framework specific for the California area. Although precise time boundaries between the periods will be subject to change, it seems less likely that radical change in the overall chronology will be necessary. I have tentatively divided the Archaic into Lower and Upper periods. The Lower Archaic is dominated by the Early Milling Stone cultures with a relatively simple and uniform culture-type, although subareal variations occur. The Upper Archaic, the beginning of which I have made more or less coterminous with the beginning of the Medithermal, would include the Middle Horizon of the traditional Central California cultural sequence and the "Intermediate" cultures of southern California (Wallace 1955). I have suggested earlier in this essay that this period should be characterized by considerable diversity and irregularity of pattern.

I have also divided the Emergent into a Lower and an Upper. In Central California the Lower Emergent period would be represented by Phase 1 of the Late Horizon and the Upper Emergent representative would be Phase 2. During the ethnographic period, which would be coterminous with the Upper Emergent period, geographically and culturally marginal groups, such as the Yana, Atsugewi, and Coast Yuki, would have cultures of the Archaic Stage of cultural developmental but would be assigned to the Emergent period on the basis of chronology. The proposed periods, provisional dating, and examples of archaeological sites and units assigned to each period appear in table 3.2.

Two additional terms, the use of which is already established in California, are protohistoric and historic. The original use of protohistoric, a term coined by the French (Hole and Heizer 1969:37), was in relation to the study of peoples who were without writing themselves, but who must be studied with

reference to the history of a literate society. Following this meaning, the 1542 voyage of Cabrillo along the California coast can be taken as marking the beginning of the Protohistoric period in California. The 1492 contact of Columbus with the West Indies could also be taken as marking the beginning of the Protohistoric period, taking into consideration that diseases brought by the Columbus voyages conceivably could have spread widely and quickly throughout the New World (S. T. Brooks, personal communication).

The more commonly applied meaning for protohistoric as applied to Californian materials, and the one recommended here, is for the designation of the cultural period immediately prior to historic contact. In this sense the terms seems best applied to local and regional sequences. In the lower Sacramento Valley and San Francisco Bay regions the Protohistoric period is equivalent to the Upper Emergent period (Phase 2 of the Late Horizon). Different dating for the Protohistoric period is found in some other regions. For example, King (1968:115) assigned the upper component at Mad-117 in the San Joaquin Valley to "an entirely protohistoric date, suggesting a time depth probably not exceeding 700 years."

Bennyhoff (1977) placed the beginning of the historic period in California concurrent with the arrival of the Spanish on the California coast in 1769. It is obvious that many groups were not affected by European contact until considerably later, thus it may be more useful to cite local or regional dates for the commencement of the historic period. Use of the terms should be specified.

Employing the above framework fieldworkers, on the basis of horizon-styles and other known, widely spread cultural characteristics, would have a substantial likelihood of accurately assigning a given site to a specific period, but, once again, without necessarily identifying the culture under investigation with some reference point culture, such as one of those located in the lower Sacramento Valley.

Pattern. The division of California prehistory into major periods functions much the same as the traditional horizon framework, except for the crucial difference that the temporal dimension is kept separate from the cultural one. It follows, then, that the assigning of a particular phase or aspect to a particular period indicates little about the actual cultural content of the units or their relationship with comparable units. What must be introduced now is an integrative concept that fulfills the cultural function of the horizon concept, but without the temporal implications. I have chosen to refer to the concept by the term *pattern* and will discuss the choice of this term below.

The pattern is the archaeological unit out of which different phases and aspects are abstracted. The concept is similar to the concept of "culture" in its "culture-area" usage. That is, inherent in the concept are a number of separate, coexisting societies, each of which possesses to a greater or lesser extent similar characteristics. The pattern, then, is a way of life shared by a number of different peoples residing in a particular geographic space. The pattern differs decisively from the culture-area concept in that the territory in which it is manifested is considerably smaller in extent than the territory included in the spatial unit of the area, and is also smaller than the unit of the subarea, at least as these units are found in California. The closest parallel in respect to cultural groupings are the "cultural provinces" of Klimek (1935), which were arrived at inductively through statistical analysis. Thus, a number of separate, but inter-related archaeological patterns exist within the Central California subarea. A single pattern may be restricted spatially to a single region, although several regions may be included. A sequence of patterns in one region may not be identical with the sequence of patterns in another region, even though both regions may be included within the same subarea. There is no necessary temporal sequence implied by terminology.

An archaeological pattern, as defined here, represents an adaptive mode shared in general outline by a number of analytically separable cultures over a particular period of time within a comparatively large geographic space. Following Kroeber (1936, 1939), the pattern of a climax region is likely to differ from the pattern of adjacent marginal regions, despite the probability of shared historic origins of the cultures of the two kinds of regions. Cultures that share a pattern can be assumed to interact more with one another, both directly and indirectly, than with cultures exhibiting different patterns. Relationships which can be discerned between different patterns can be indicated by descriptive commentaries, since inclusion in the same culture-area implies fundamental relationships.

TABLE 3.2

Archaeological Periods in Central California

Period and Dating	Archaeological Site/Unit
Upper Emergent A.D. 1500	Phase 2, Late Horizon
Lower Emergent A.D. 300	Phase 1, Late Horizon
Upper Archaic 2000 B.C.	Middle Horizon Intermediate Cultures
Lower Archaic 6000 B.C.	Early Horizon Early San Francisco Bay Early Milling Stone Cultures
Paleo-Indian 10,000 B.C.?	San Dieguito Western Clovis
Early Lithic ?	Farmington ? Santa Rosa Island ?

Note: The temporal boundaries of any one archaeological culture may not correspond precisely with the dates given, e.g., Early Horizon (Windmiller Pattern) perhaps begins as late as 3000 B.C. and may persist until 500 B.C. (Ragir 1972).

A pattern is characterized by (a) similar technological skills and devices (specific cultural items); (b) similar economic modes (production, distribution, consumption), including especially participation in trade networks and practices surrounding wealth (often inferential); and (c) similar mortuary and ceremonial practices.

A single pattern will not be specifically uniform throughout the entire geographic space which it occupies. Regional and local variation, sometimes extreme, will occur, depending upon factors such as (a) abundance and nature of specific environmental resources; (b) regional specializations and elaborations, sometimes resulting from unique historic events; (c) degree of cultural and geographic marginality; and (d) influences of neighboring patterns. It is hypothesized that some patterns may have specific linguistic correlates in regard to origins, but such correlates must be demonstrated rather than assumed. During any one style-horizon, representatives of diverse language families may share the identical pattern.

A specific pattern should be defined in such a way as to make the identifying characteristics as generalized as possible, yet any two patterns should clearly contrast with one another. It should be emphasized that the definition of a particular pattern is based upon a configuration of trait elements. Individual characteristics may be shared mutually between two or more patterns, but the overall configuration of each pattern should be distinctive. Within a single culture-area or subarea, several patterns should be distinguishable. Although sharp boundaries between

patterns may not be discernible, the units themselves should be more easily manageable than larger units encompassing the entire area. It can be expected that during any given period in Central California there will probably exist a climax region pattern border region patterns which are strongly influenced by more than one climax culture, marginal region patterns where influence from two or more culture-areas is manifest, and coalescent patterns where characteristics from an earlier period strongly influence newer patterns. (See chapter 2, pp. 20-21, for further discussion of pattern variability, Ed.)

Within Archaic and Emergent cultures in Central California, the milling complex will always be present. The dominant or exclusive use of the mortar and pestle can *usually* be contrasted with the dominant or exclusive use of the handstone and milling stone. Projectile points will always be present, with forms being more conservative in marginal localities and the quantity of points in any single locality closely related to the economic adaptation. Marginal localities will have fewer trade items and will thus have smaller numbers of imported objects, such as beads, ornaments, stone pipes, and charmstones. Climax regions and tribelet centers will generally be richest in regard to artifact inventory and will show a greater variety of artifacts, more types of any given artifact, and more complex ceremonial indications than sites in marginal or subsidiary regions.

The term pattern was selected from several which have been suggested in recent years for this level of integration: horizon, culture, tradition, and pattern. The continued use of the term horizon (Beardsley 1954; Heizer 1949), without the temporal dimension, is not satisfactory for several reasons. Not only would continued usage imply the traditional Central California meaning, linking time with culture when only culture is desired, but this linkage would be reinforced by the general New World denotation of the temporal dimension of the term. There is also a conflict with the use of horizon-style as defined earlier in this essay.

Ragir (1972) has substituted the term culture for horizon in her recent modification of the Central California Taxonomic System. Although she did not define her use of the term, the context implied compatibility with definitions such as that of Childe (1950:2):

> an assemblage of artifacts that recur repeatedly associated together in dwellings of the same kind and with burials by the same rite. The arbitrary peculiarities of implements, weapons, ornaments, houses, burial rites and ritual objects are assumed to be the concrete expression of common social traditions that bind together a people.

This usage would seem more appropriately applied to the concept of phase than to that of pattern as discussed above, since it is the phase (in this essay) which comes closest to approximating a discrete ethnographic culture. Krieger (1964:26) proposed a much broader use for the term culture, suggesting it be applied to "similar material that is found over great regions." The primary objection to the use of the term culture for the present context is that the word is thoroughly entrenched in anthropological vocabulary with a broad spectrum of meanings, and it does not seem advisable to restrict this range. Culture ranges in meaning from the ways of life practiced by members of a particular society, through the ways of life common to broader groupings of particular societies (such as those found within culture-areas), to the ways of life common to all humankind.

As noted earlier, the term *tradition* was one of the alternatives to horizon discussed during the Davis workshops. The fact that the term has already appeared in print several times (Gaumer 1968; King 1968; Schulz 1970) argues in favor of its adoption, since to introduce yet another term would seem to add even more complexity to the literature. The term has much to recommend it, especially in the sense employed by Goggin (1949:17, cited in Willey and Phillips 1958:36ff.), which closely approximates the concept now being explicated:

> My concept of Florida cultural traditions is similar in theory but more inclusive in content than a ceramic tradition. A cultural tradition is a distinctive way of life, reflected in various aspects of the culture; perhaps extending through some period of time and exhibiting normal internal cultural changes, but nevertheless throughout this period showing a basic consistent unity. In the whole history of a tradition certain persistent themes dominate the life of the people. These give distinctiveness to the configurations.

Willey and Phillips, while recognizing the virtue of

this usage, reject this use of tradition, preferring to restrict it to "single technologies or other systems of related forms." Willey (1966:4), in his synthesis of North and South American prehistory, employed the term to refer to:

> major cultural groupings as these can be discerned in geographical space and in chronological time. In every instance these dimensions of space and time are appreciable. Each major cultural tradition also probably had a definite ideological pattern or world view. This can be demonstrated for some of them in their thematic arts, evidences of religious practices, and intellectual pursuits. For others, however, particularly the earliest of the New World traditions, the data are inadequate to allow such reconstructions.

Thus, just as the term culture had a broad series of meanings, so does tradition. I consider it advisable to retain the flexibility of both terms rather than to restrict their meaning to a single dimension.

The term pattern can be similarly criticized in that it has a range of increasingly broader meanings. I have selected it primarily because it is not widely employed in the archaeological literature in any of its meanings (but see Warren 1968:26-27, Ed.), contrasting in this respect with both culture and tradition.

As a general principle, I suggest that a pattern be given the name of the first site at which it is recognized. This does not imply any archaeological priority for the site thus employed. The priority relates only to the recognition by archaeologists, not to elaborateness of culture content or to temporal priority for the site in a chronological sequence. If such a label proves to be ambiguous, for instance, if it is already in use in some other context, an alternate label should be chosen.

With respect to the archaeologist in the field, I suggest that the pattern is the unit, along with the period, which is most generally recognized. I emphasize once again that in practice *the pattern is not built up of aspects, but that aspects and their constituent phases are analyzed out of the more general pattern.* Thus, a pattern is defined in terms of generalized forms and types, whereas aspects and phases are defined in terms of certain distinctive features which characterize these general forms and types.

Criteria for Several Patterns in Central California[1]

Windmiller Pattern. The Windmiller Pattern, which appears to have its origin in the Lower Archaic period and to have persisted into the Upper Archaic period (Ragir 1972), includes the components previously included with the Early Horizon of the lower Sacramento Valley. It has recently been renamed by Ragir (1972) as the Windmiller culture. Windmiller components are restricted to the Cosumnes District of the Delta region. Criteria for the Windmiller Pattern are as follows:

a. Technological skills and devices. Mano and metate, although rare, are accompanied by small mortars (possibly meat or paint grinding implements). The dart and atlatl, as well as the spear occur. Atlatl spurs are rare and are of polished stone. Non-obsidian, stemmed projectile points are dominant and numerous flaked points have basal edges smoothed by grinding. While the bone industry is not elaborate, the polished stone industry is, including the biconical drilling of stone tubes and shell bead appliqué, but no true inlay occurs. Impressions on baked clay document close twined basketry.

b. Economic modes. The relative number of projectile points as contrasted with the small number of grinding implements suggests a hunting emphasis. Inferentially, neither the acorn nor other seeds are too important. Trade appears to be focused primarily upon acquisition of ceremonial and ornamental objects, which appear to have been obtained as finished specimens rather than as raw material.

c. Burial and ceremonial practices. Interment occurs both in intravillage grave plots and in nonmidden, off-village cemeteries. The mortuary complex has a ceremonial emphasis, with abundant, deliberate grave furnishings relatively common. The most frequent burial posture is westerly oriented ventral

1 Compare the additional detail in this section, pp. 43-47, with the outline developed by Bennyhoff and Fredrickson (chapter 2, pp. 22-24) six years earlier, Ed.

extension, although westerly oriented dorsal extension also occurs. One site yields rare flexure and secondary cremation. There is some work in human bone and evidence of head-taking. The use of red pigment and the paint palette is documented.

d. Variations in the Windmiller Pattern. The cluster of sites, predominantly on the Mokelumne River, involved in the definition of the original Early culture or Early Horizon, forms the nucleus of the present definition of the Windmiller Pattern. The elaborateness of the mortuary practices suggest that these practices may be a regional specialization due to favorable economic resources. The culture represented appears to have been at a climax point, possibly related to the favored environment. If this is assumed, then it can be hypothesized that the areas geographically marginal to the Mokelumne cluster of sites will present an abbreviated version of the ceremonial complex. The Bear Creek site (SJo-112; Olsen and Wilson 1964), believed to be a Windmiller Pattern site, located more than ten miles to the south of the Mokelumne site cluster, shows a significantly smaller number of charmstones and chipped stone tools as grave furniture. Although this is not necessarily indicative of a significant difference in the ceremonial complex, it is suggestive of such a difference.

Berkeley Pattern. The Berkeley Pattern, predominantly of the Upper Archaic period but with possible Lower Archaic antecedents, includes those components previously included within the Middle Horizon, renamed by Ragir (1972) as the Cosumnes culture and referred to by Gaumer (1968) as the Emery Tradition. The earliest phases of the Berkeley Pattern appear to be contemporaneous with the late phases of the Windmiller Pattern (Fredrickson 1966; Gerow with Force 1968; Ragir 1972). The name Berkeley rather than Emery (for Emeryville where this pattern was first recognized) has been selected in order to avoid ambiguity, since Beardsley (1954) already used Emeryville as the name for a basic Late Horizon facies. Cosumnes is also unacceptable since Bennyhoff (1977) used the word to refer to a district of the Delta region. Berkeley Pattern components are more numerous than Windmiller Pattern components and are found in the Delta and San Francisco Bay regions. The criteria for the Berkeley Pattern are as follows:

a. Technological skills and devices. The minimally shaped cobble mortar and cobble pestle are employed almost exclusively as the milling implements. Manos and metates, while sometimes present, are rare. The dart and atlatl are present, the atlatl being represented by rare engaging hooks usually of bone or antler. Chipped stone projectile points are less frequent than in the Windmiller Pattern, and nonstemmed forms predominate. There is a growing emphasis upon the bone industry during the temporal span of this pattern. Mammal bone is more commonly employed than bird bone. The polished stone industry does not appear to be as highly developed as it is with the Windmiller Pattern.

b. Economic modes. As indicated by a high proportion of grinding implements in relation to projectile points and by the regional accumulation of large shell heaps, the Berkeley Pattern has a collecting emphasis. The acorn is probably the dominant staple. The large number of sites and great depths of deposit suggest a larger population than that supported by the Windmiller Pattern. There is no apparent emphasis upon either trade or wealth. The use of local material predominates. Trade goods, when they appear, are finished specimens, rather than raw material.

c. Burial and ceremonial practices. The mortuary complex is rarely elaborated. Flexed burial with variable orientation occurs in village sites. Burial goods are mostly restricted to a few utilitarian items or to ornamental objects which are compatible with an interpretation of being part of a relatively unelaborate burial costume. Ceremonialism is indicated predominantly by shamanism, that is, by the presence of single graves with objects compatible with known ethnographic "shaman's kits," e.g., quartz crystals, charmstones, bone whistles. Graves are sometimes accompanied by bird and animal bone, occasionally by articulated portions of skeletons. Birds and animals sometime are found as ceremonial burials.

d. Variations in the Berkeley Pattern. Regional specializations reflect at times differing environmental resources. For example, along the San Francisco Bay shoreline and the Marin-Sonoma coast, Berkeley Pattern sites emphasize the collection of shellfish. Notched stones, presumably net weights, are common in these localities, while absent in interior sites. Archaeological components in the northern San Joaquin Valley show a blending of the Windmiller with the

Berkeley Pattern, although it appears that the Windmiller Pattern has historical priority in the region. With additional information it may prove necessary to distinguish the components in this region as part of a separate pattern.

Augustine Pattern. The Augustine Pattern of the Emergent period includes those cultures previously included within the Late Horizon (named the Hotchkiss culture by Ragir [1972]). The Augustine Pattern appears to be a coalescent pattern merging the previous Berkeley Pattern with many new traits and involving a change in the general economic complex. Augustine Pattern components occur in many regions of the Central California subarea, although further analysis is necessary before its precise distribution can be determined. Augustine Pattern criteria are as follows:

a. Technological skills and devices. Well-shaped mortars and pestles are common. The bow and arrow are present, as evidenced by a growing increase in the number of small projectile points beginning in the earlier phases of the pattern. The dart and atlatl appear to drop out of use early during the pattern. Fishing implements, while rare in absolute terms, occur more commonly and in different types than in the Berkeley or Windmiller Patterns. The harpoon is introduced during early phases of the pattern. Bone work is not as extensive as with the Berkeley Pattern, but bone awls, probably indicative of a coiled basketry industry, are common. Polished stone now includes tubular pipes as well as charmstones, which often are not as well made as those of the Berkeley and Windmiller Patterns. Use of and work in shell is common.

b. Economic modes. Fishing appears to be added to a strong collecting emphasis, while hunting (inferred by greater numbers of projectile points found in middens) may be more important than during the period of the Berkeley Pattern. The acorn is the dominant staple, as judged in part by charred specimens found in middens. There is high development of trade, beginning initially with finished specimens serving as trade items, and developing by the addition of raw materials involved in trade. Gradually, more trade items appear that can be identified as coming from relatively great distances. During the Upper Emergent period the Augustine Pattern appears strongly influenced by trade and wealth items deriving from the North Coast Ranges, a region which in earlier periods did not appear to participate to any great extent in the patterns so far discussed. Social differentiation in regard to wealth in the Augustine Pattern is evidenced by considerable variation in grave furnishings.

c. Mortuary and ceremonial practices. Cremation and preinterment grave pit burning of burial furnishings co-occur with flexed burial, with cremation apparently reserved for relatively wealthy and prestigious individuals, judging from the differential distribution of grave gods often found with the two burial modes. Grave orientation is variable. Ceremonialism, possibly indicative of widespread secret societies documented during the ethnographic period, is evidenced in the artifactual complexes, markedly emphasizing shell beads and ornaments, found with graves.

d. Variations in the Augustine Pattern. Due to the developing elaborateness of the trade networks, localities which were unfavorably situated with respect to trade routes show considerably less embellishment of the Augustine Pattern than localities which are more favorably situated. Nonetheless, more trade objects are evident in the marginal localities than in comparable localities which follow the Berkeley Pattern. The importance of fishing in the Augustine Pattern implies that localities favorably situated with respect to fish resources will have a more elaborate cultural development than those in mountainous regions. In the northern San Joaquin Valley the presence of extended burials in components which tentatively can be classified as participating in the Augustine Pattern may reflect a continuing influence from earlier Windmiller Pattern cultures.

Borax Lake Pattern. What is here referred to as the Borax Lake Pattern was first identified as a distinctive cultural manifestation at the Borax Lake site (Harrington 1948) in the vicinity of Clear Lake. The pattern, which includes sites subsumed by Meighan (1955) as belonging to the Borax Lake and Mendocino complexes, is characteristic of the Lower Archaic period and has regional representatives persisting into the Upper Archaic period. It has been suggested (Baumhoff 1957; Baumhoff and Olmsted 1963, 1964; Wallace 1954) that what is here referred to as the Borax Lake Pattern is historically related to the Early

Milling Stone cultures of the Southern California subarea as well as to the Windmiller Pattern of the Delta region. The spatial distribution of Borax Lake Pattern components is not compatible with these possibilities. Borax Lake components are found throughout the North Coast Ranges, with strong indication that the same or a related pattern may also occur in the South Coast Ranges (Pilling 1955). Despite the possibility of a direct historical relationship between the Borax Lake and Windmiller Patterns, the extent of difference in economic mode and ceremonial behavior gives sufficient justification for establishing two distinct patterns. Criteria for the Borax Lake Pattern are as follows:

a. Technological skills and devices. Mano and metate occur with greater frequency than in the Windmiller Pattern. Mortar and pestle commonly occur along with mano and metate in later phases. Atlatl (inferred) and dart occur, as well as the spear. Stemmed, nonstemmed, and concave base projectile points, predominantly of local materials (either obsidian or chert), are present. There is some evidence of a burin technology. Polished stone items are found, but are quite rare. No evidence of a significant bone industry has yet turned up, although this may be due to differential preservation resulting from soil conditions. Similarly, no evidence of a shell industry has been found.

b. Economic modes. The relatively large number of milling implements as contrasted with the relatively small number of stone projectile points suggests a generalized hunting-collecting economy, with collecting given an edge over hunting in importance. No evidence for fishing has been preserved. The use of local materials predominates; trade does not appear to have been particularly well developed, although in later phases contact with other patterns appears to increase. There is no evidence of any wealth emphasis.

c. Mortuary and ceremonial practices. No interments have been found in habitation sites in earlier phases, although in one late phase site burials do occur in the midden. No non-midden burials have yet been identified. Utilitarian objects, mainly pestles and projectile points, were found with the late phase burials. Polished stone items suggestive of ceremonial purposes include rare ovoid perforated charmstones and a single occurrence of a small, tabular, centrally side-notched, ground stone object, possibly representing a form ancestral to the "painted tablets" of the Napa and Berryessa valleys.

d. Variations in the Borax Lake Pattern. At present two aspects of the Borax Lake Pattern have been identified, distinguished by the stone materials employed and the forms of the projectile points utilized. There is a northern aspect focused in Mendocino County and extending to the east side of the Coast Ranges, and a southern aspect, focused in Lake County and extending southward into Sonoma, Napa, and Solano counties. No regional specializations have yet been found, unless the "inscribed stones" of the Redding District (Edwards 1969) can be so considered. If the Borax Lake Pattern were related to the Windmiller Pattern, it would represent both a culturally and geographically marginal variant.

Houx Pattern. The cultural assemblage which makes up what is referred to here as the Houx Pattern has not been previously described. The pattern is described at this time on the basis of materials obtained through stratigraphic excavations at a single site, Lak-261 (the Houx site), supplemented with comparative materials from neighboring localities. The Houx Pattern, found at this time only in the North Coast Ranges, is assigned to the Upper Archaic period, but it appears significantly different from the Berkeley Pattern which dominates this period in the Delta, San Francisco Bay, and Marin-Sonoma County coastal sites. Criteria for the Houx Pattern are as follows:

a. Technological skills and devices. The mortar and pestle dominate the milling industry. The atlatl (inferred) and dart occur, but the bow and arrow are absent. Nonstemmed projectile points predominate, but broad, triangular, stemmed projectile points also occur. Well-flaked scrapers of various shapes and sizes are common. Locally available obsidian and basalt are the raw materials for virtually all chipped stone tools. Technical and possibly functional burins are relatively common. No polished stone objects have yet been recovered. The bone industry does not appear to be particularly well developed, but this may be due to soil conditions which act against preservation of bone. Work in shell is present in the form of beads, probably obtained by trade.

b. Economic modes. Projectile points are ex-

tremely numerous, both in absolute number and in relation to number of milling implements. Although this would strongly support a hunting emphasis, relatively little bone debris was recovered from the single stratigraphically excavated Houx component. Charred acorns were recovered from the site matrix. Poor preservation of bone may be responsible for this anomaly. Local materials predominate with little development of trade except as suggested by the presence of shell beads. There is no evidence of any wealth emphasis.

c. Mortuary and ceremonial practices. Flexed and semi-flexed interments occur within the habitation site. Although few burials have been recovered, those which were found show an undeveloped ceremonial complex with few associations. They are suggestive neither of a ceremonial nor of a utilitarian emphasis to the mortuary complex.

d. Variations in the Houx Pattern. While the Houx Pattern may prove to be a specialized adaptation based upon the Berkeley Pattern, at this time it appears significantly different from the latter to warrant classification as a separate pattern. So far, Houx Pattern sites appear to be focused in Lake and Sonoma counties, but similarities in projectile point types provocatively suggest connection with Berkeley Pattern components on the Marin-Sonoma coast and with components assigned to the Berkeley Pattern in Napa County. Projectile point types and the burin technology also suggest connections with Borax Lake Pattern sites of the earlier Lower Archaic period and with one or more as yet undefined patterns (Martis Complex) of the Sierras. Further excavation must be carried out to determine in more detail relationships of the Houx Pattern to other patterns in both space and time.