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The Late Prehistoric Coastal Orange County Hokan Hypothesis: A Commentary

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Cottrell's doctoral dissertation (1991) proposes that Hokan speakers occupied an approximately 20 km wide coastal strip in southern Orange County at the time of Spanish contact. According to this hypothesis, Shoshonean or Takic speakers were restricted to an inland territory that ended 20 km short of the Pacific coastline. If accurate, this "Hokan hypothesis" would necessitate a major rewrite of regional prehistory. Most archaeologists accept Kroeber's "Shoshonean wedge" model which states that immigrating Takic speakers reached the Pacific coast hundreds of years prior to Spanish contact. This critique shows that several crucial ethnohistoric and ethnographic observations of culture and language were not adequately considered in Cottrell's dissertation (1991), and that there are apparent misreads, misinterpretations, and misuses of archaeological and other kinds of data, as well as a general pattern of confirmation bias. The "Hokan hypothesis" is unsupportable.

At the heart of science is an essential balance between two seemingly contradictory attitudes - an openness to new ideas, no matter how bizarre or counterintuitive, and the most ruthlessly skeptical scrutiny of all ideas, old and new.- Carl Sagan (1997:304), The Demon-Haunted World

In the Spring 2000 Pacific Coast Archaeological Society Quarterly, the issue's editor reports her belief that "it is entirely possible that a slender border of Hokan-related people inhabited the coast of Los Angeles and Orange Counties and the Southern Channel Islands until almost the time of contact" (Cameron 2000:51). This startling hypothesis, if accurate, holds profound implications regarding the employment of ethnographic analogy for local past life-way reconstruction. It would also necessitate a major rewrite of local culture history since it is generally believed that the "Shoshonean wedge" of Takic speakers, which includes the Juaneño, penetrated to mainland ocean shores and onto the southern Channel Islands (Kroeber 1925; Koerper 1979). Cameron notes, "some recent archaeological research in Orange County also points to this conclusion" (Cameron 2000:51), but she offers no citation.

This "recent archaeological research" may be a reference to Cottrell (1991), since in this doctoral dissertation Cottrell interprets archaeological and ethnohistoric information as indicating the presence of two home ranges or territories in southern Orange County: a Shoshonean or Takic speaking ethno-linguistic group in her Trabuco and Oso creeks study area (Fig. 1) and a Hokan-

speaking ethno-linguistic group in a narrow strip along the coast during the Late Prehistoric period that persisted even into the Mission period. Until Cameron's recent article, Cottrell's hypothesis went unadopted by any scholar concerned with Orange County Native American culture. Now that an apparent reference to Cottrell's (1991) proposition has appeared in the literature, critical examination of this claim is definitely necessary and is provided in the following discussion.

Cottrell's Hypothesis: Summary and Discussion

Pluralitas non est ponenda sine necessitate. [Plurality must not be posited without necessity.] – William of Ockham (Jefferys and Berger 1992:64; see also Thornburn 1918)

Father Gerónimo Boscana cursorily differentiated between settlement-subsistence practices of inland versus sea-coast indigenous peoples of southern Orange County. The Franciscan missionary, who lived at Mission San Juan Capistrano from 1814 to 1826 (Harrington 1978:105; see Koerper 1988:5-6), observed:

In the winter they [inlanders] reside in one place, and in the summer in another. This was general among them, except in the case of those tribes located on the sea-coast who seldom moved because their maintenance was derived from the sea; and they were unlike the others who subsisted entirely upon the fruits and seeds of the field [Boscana 1978:65].

In her doctoral dissertation, Cottrell (1991) maintains that the priest's distinction between the inland peoples of the coastal region (on the coastal side of the Santa Ana Mountains) and those coastal peoples tied directly to maritime resources reflects a territorial boundary that virtually segregates two ethnic-linguistic entities between whom trade would have been highly restricted (Cottrell 1991:14-15, 24). According

to Cottrell (1991:42), the territory considered inland, or interior, might be, following Boscana (1978:27), only three to four leagues distant from Mission San Juan Capistrano. "A case in point," she writes, "is that the village observed by the Portolá expedition on the Plano Trabuco is located about three leagues inland from San Juan Capistrano (a league is about three miles)" (Cottrell 1991:42). A league for Spaniards in Boscana's time was 2.64 miles (5,000 varas; Simpson 1961:103).

While the "inland" people only a few miles from the mission were Shoshoneans (speakers of languages belonging to the Takic branch of the Uto-Aztecan language stock), according to Cottrell, "the coastal groups appear to have had connections with the speakers of Hokan languages such as the Chumash to the north and the Diegueño to the south" (Cottrell 1991:46). It is uncertain whether Cottrell thinks the coastal people were more like the Yumans (Kumeyaay or Diegueño) (see Cottrell 1991:195) or the Chumashans (see Cottrell 1991:203).

This ethnic-linguistic-territorial-trade boundary hypothesis ("Hokan hypothesis"; our terminology) piqued our curiosity on a number of issues. For instance, no such purported linguistic variability was recognized by Boscana, other Spaniards, nor any ethnographers or linguists (e.g., see Kroeber 1907:140-150) to follow. José Zalvideo supplied J. P. Harrington (n.d.) with the "tribal name" the Gabrielino (Shoshonean Takic speakers) used for themselves. It was said to be the same name the Gabrielino applied to those who could speak their language (viz., the Fernandeano and Catalina Islanders) (see also M. R. Harrington 1944:198). Zalvideo further related that the "Santa Catalina Islanders talked the same [as] at San Pedro and San Gabriel," but at San Juan Capistrano the language was "*poco como San Luiseño*" (see also Kroeber 1907:149). J. P. Harrington (n.d.) understandably noted this as "important information" (see also Kroeber 1925:620 and Hudson 1978:27, 1979:361, and 1981:193-194). Ethnographers and linguists place Takic speakers in the Los Angeles Basin and the southern Channel Islands (Gabrielino), most of Orange

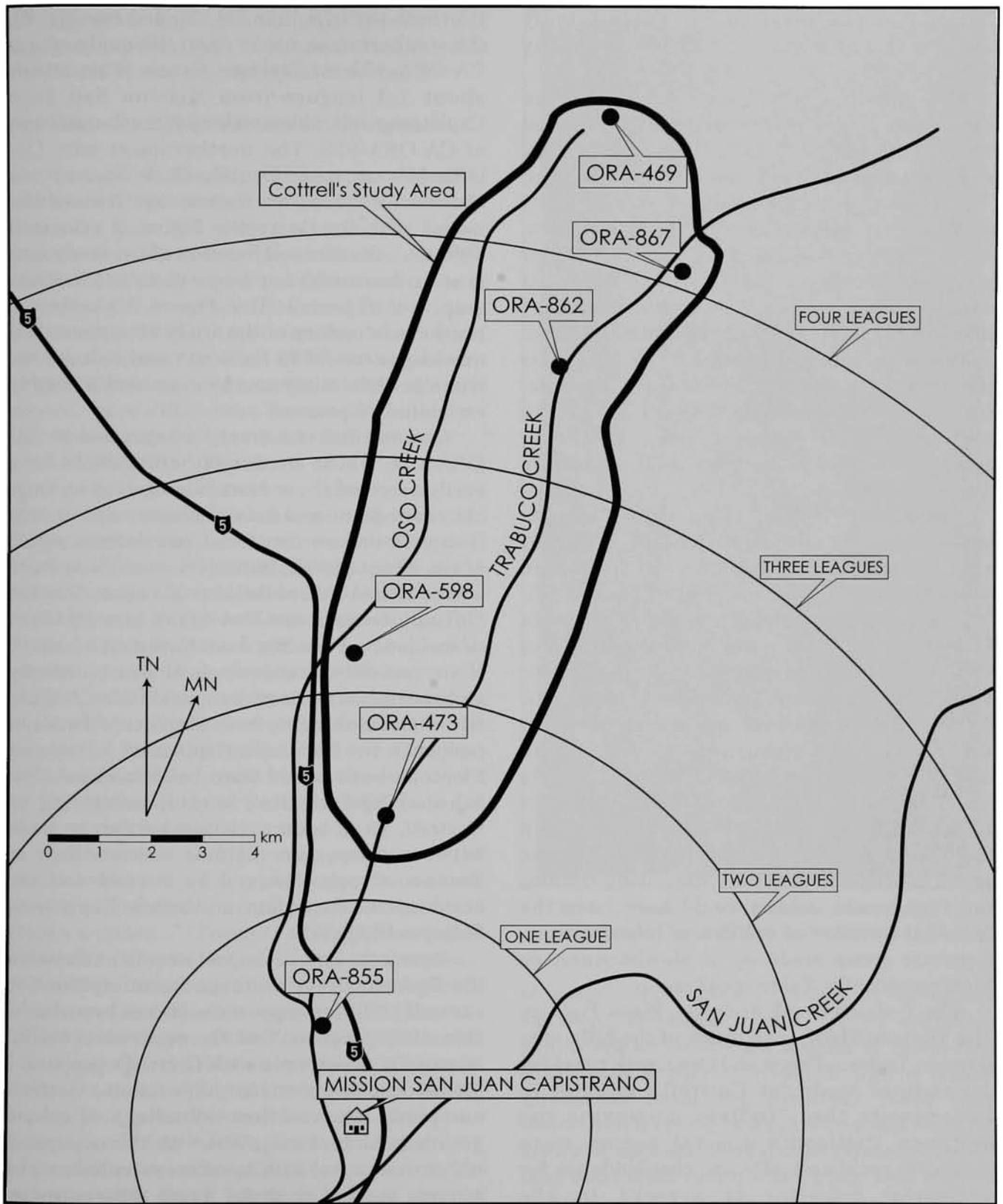


Figure 1. Cottrell's Study Area and Selected Sites (after Cottrell 1991:78, Fig. 3).

County and northwestern San Diego County (Juaneño), and northern San Diego County (Luiseño).

Most, if not all, local Native American place names lack Hokan morphemes (see O'Neil and Evans 1980; Earle and O'Neil 1994). There are profound implications for any Shoshonean (Takic) incursion phenomenon (see Koerper 1979) since, if Cottrell's (1991) thesis is correct, the Shoshonean peoples' move from the interior (southwestern Great Basin area) to the coast would have been stopped in its tracks, just short of a cornucopia of maritime resources. While all ethnographers and linguists see the occupants of the southern Channel Islands (San Clemente, Santa Catalina, and San Nicolas) at Spanish contact as Takic speakers, does the Hokan hypothesis imply that, rather, the islanders were Hokan speakers?

Cottrell's Hokan hypothesis holds implications for site catchment analysis, our most immediate concern since we have been much involved in archaeological research at CA-ORA-855 (Koerper and Mason 2001; also see Koerper et al. 1988), the Juaneño village of *Putuidem* listed in mission records and located near the confluence of Trabuco and Oso creeks. CA-ORA-855 is just over one mile north from Mission San Juan Capistrano (Fig. 1). If Cottrell is correct, the purported Hokan people (according to Cottrell) of *Putuidem* and the rest of the Capistrano Valley would have been excluded from hunting and gathering in the inland area upstream of the village along Trabuco and Oso creeks, which would have been the defended territory of a different inland ethnic-linguistic group made up of Shoshoneans, or more specifically, Takic speakers.

The Trabuco Creek drainage, Plano Trabuco (the Trabuco Plain), and much of the hilly area between Trabuco Creek and Oso Creek provided the zone of study for Cottrell's attempt to demonstrate that "Indians occupying the southern California coastal region were territorial prehistorically and that evidence for territorial behavior is present in the archaeological record" (Cottrell 1991:17). According to her map of sites investigated

(Cottrell 1991:78 [her Fig. 3]; see our Fig. 1), the southernmost site in Cottrell's study area is CA-ORA-473 on Trabuco Creek. This site is about 1.4 leagues from Mission San Juan Capistrano and is about a league north-northeast of CA-ORA-855. The northernmost site, CA-ORA-469 on upper Oso Creek, is located just about 4.7 leagues from the mission. It should be noted that, in Cottrell's Figure 2 (Cottrell 1991:26), the size and location of her study area is at variance with her larger scale site location map, her Figure 3. Her Figure 2 places the northern boundary of the study area more than one league too far to the south and reduces the true size of the study area by more than a roughly estimated 25 percent.

Oso and Trabuco creeks merge close to CA-ORA-855, whose hunter-gatherers could have easily accessed these more inland areas for their abundant plant and animal resources, but only if there were no territorial restrictions since, again, after Cottrell, *Putuidem* would have been on the Hokan side of the coastal region. Was the "inland" Trabuco and Oso Creek area off limits to residents of the San Juan Capistrano Valley? If so, not only would much of this politically circumscribed territory be outside the CA-ORA-855 site catchment, but interaction between people in the San Juan Capistrano Valley and Plano Trabuco would have been minimal. The ethnic/linguistic line would, according to Cottrell, have been a virtual barrier to trade between those, say, residing at the village at Trabuco Creek observed by Portolá and the residents of *Putuidem* and other Capistrano Valley settlements.

Data from archaeological sites in and around the Trabuco Creek drainage are interpreted by Cottrell (1991) to support the Hokan hypothesis. Our study proposes that the prehistoric record is actually at variance with Cottrell's proposal. To further support her hypothesis, Cottrell compared the creation mythology of inland groups (which she equates with the occupants of her study area) with maritime oriented coastal groups, and believed she found differences on an order of magnitude sufficient to set the groups apart ethnically and linguistically. Employing

ethnographic and ethnohistoric records, our critique exposes apparent errors in Cottrell's treatment of said mythological landscapes.

Putuidem and the Trabuco Study Area

Juaneño oral tradition assigns a kind of mother village status to the settlement at *Putuidem* in origin stories recorded by Father Boscana in each of two fully published versions of his *Relación Histórica*, or historical account regarding the Juaneños. The circa 1822 version (Harrington 1934), known as the “de Cessac” manuscript, and the circa 1825 version, known as the “Robinson” manuscript, while in general accord, have differences in certain particulars (see Koerper and Mason 2001: Section 3.4).

CA-ORA-855 (Fig. 1) is the historically recorded village of *Putuidem*, a place name that is, for the record, Shoshonean (Takic), not Hokan, and is translated as “navel sticking out” (“herniated navel”?). It is in Chapter 15 of the Robinson manuscript (Boscana 1933, 1978) and in Chapter 14 of the de Cessac manuscript that Boscana discusses the origins of the people who migrated to San Juan Capistrano. These are the chapters which recount the story of the founding of *Putuidem*. There is strong agreement in the essentials. Parenthetically, the 1933 Fine Arts Press edition of Boscana's work will be reprinted by the Malki Museum Press in 2005 (see the cover of this Journal issue; see Fig. 2).

Colonization was “in consequence of the rapid increase of population, the annual production of seeds...insufficient to maintain so great a number...” (Boscana 1978:83; Harrington 1934:57). It was on account of resource/population imbalances that émigrés departed from a settlement area named *Sejât* (Boscana 1978:83; Harrington 1934:57), which was located 7 or 8 leagues from Mission San Juan Capistrano. *Sejât* was in the valley of the Los Nietos Ranch, most probably on the lower Santa Ana River (see Koerper and Mason 2001: Sections 3.4 and 4.8). In the de Cessac manuscript, Boscana wrote that migrants from *Sejât* “came to a place about a quarter of a league before reaching this Mission [San Juan Capistrano]...where there is a spring



Figure 2. Frontispiece from Boscana (1933.) *The ascension of Chinigchinich to the Heaven of Stars.*

of water” (Harrington 1934:57). In the second version, Boscana wrote, “After traveling southward seven or eight leagues or more, they arrived at a place...situated half a league northeast from the mission. Here they discovered a spring of fresh water and from the favorable appearance of the neighboring country they concluded that it was a place well adapted to the founding of a new colony” (Boscana 1978:83). It seems that with more consideration, Boscana rendered a more precise distance

between *Putuidem* and Mission San Juan Capistrano, that is, one half-league.

The half league distance would place *Putuidem* squarely at CA-ORA-855 (Fig. 1). Indeed, tourists exiting the Interstate 5 Freeway at Junipero Serra Road to go to historic San Juan Capistrano encounter a directional sign near the intersection of Junipero Serra and Camino Capistrano informing them that the mission is 1.3 miles to the south. Boscana obviously either misspoke when he gave a northeasterly direction of the place of *Putuidem* from the mission or he was generally misinformed or confused about direction. It is noted that Boscana had put *Sejât* to the northeast when almost certainly it was to the northwest (see Harrington 1978:215 and Dixon 2000:67). One can only speculate, but if Boscana roughly reckoned "west" by reference to access to the ocean from the mission (along San Juan Creek), his mental landscape may have been rotated counterclockwise, an unwitting shift of some places northwest into Boscana's perceptions of northeast.

The northeast designation of *Putuidem* from the mission would be altogether unsatisfactory since a northeast direction at one half-league lies on unsuitable terrain, well away from the best local drainages (Trabuco Creek, Oso Creek, and San Juan Creek) and outside the valley floor. Boscana states clearly that Indians from *Sejât* settled in the valley (1978:85; Harrington 1934:57). Archaeological surveys have revealed no site of major village size situated between one-quarter league and one-half league to the northeast.

Some of the most compelling evidence for the location of *Putuidem*, beyond Boscana's notes, derives from archaeological investigations conducted through the Cypress College archaeology program which, by the early 1980s, revealed a midden containing the attributes of a late Late Prehistoric and historic period village (Koerper et al. 1988), exactly what *Putuidem* should look like. The results of subsequent data recovery at ORA-855 (Koerper and Mason 2001) confirmed that ORA-855 was a village.

In their oral traditions, native informants related to Boscana that a scarcity of hard seeds

caused some people to depart from *Putuidem* not long after its founding, and to settle in different parts of the valley: "In this way originated the many small villages or towns which were to be met within the route to *Putuidem*" (Boscana 1978:84). The account from the "new original version" is more specific:

Seeing that the land was scant for so many people as were multiplying and that they were having to go quite a distance from their rancheria to hunt their seeds, some families began to remain at the same places where they gathered, some of them building their houses at one place, others at another, and thus were settled all the rancherias which there were in this canyada of San Juan Capistrano [Harrington 1934:58].

The Arroyo Trabuco/Oso Creek confluence is near CA-ORA-855, a mere 0.2 km from the site. In a north-northeast direction from *Putuidem*, the southern end of Cottrell's (1991) study area is but a short distance, only about 3 km away as the crow flies, and only slightly longer if one walked from *Putuidem* north to the confluence and thence up Arroyo Trabuco. If one considers only the geography, it is not difficult to see the possibility that some part of Cottrell's Trabuco study area should have been within the catchment zone of *Putuidem*. On the other hand, if the Arroyo Trabuco area was territorially controlled, boundaries tightly drawn on ethnic/linguistic lines, then people from *Putuidem* may have been excluded from resources within easy reach of their village, as per Cottrell.

Also, we wonder whether people in the Trabuco area ought even to be considered "inland." Boscana did write that the inland people had a different subsistence-settlement adaptation (1978: 65) than people living at or near the coast (he mentioned no linguistic differences), but he placed them 3-4 leagues inland from the mission. Cottrell states that Plano Trabuco is about three leagues inland from San Juan Capistrano (1991:42).

If “inland” to Boscana is east or generally east (as previously noted, the Franciscan seems to have had some problems with his mental compass), Cottrell’s study area is well to the seaward side of three leagues inland from San Juan Capistrano. Taking a line from the mission due east to points but one and two leagues distant, and from each drawing a line straight north (Fig. 1), one sees that all of Cottrell’s study area is to the west of the two league line and the majority is to the west of the one league line. It is not likely that Boscana would have considered the Trabuco study area to have been inhabited by people that he labeled “inland.”

Considering distance from the mission directly toward and into the Trabuco study area only magnifies problems of geographical inexactness. Three of the 27 sites in Cottrell’s study area are less than two leagues from the Mission, and another six lie between two and three leagues. The great majority of the remainder is located between three and four leagues away, with only five sites at about or beyond the four league mark. Thus, the study area chosen by Cottrell is a problematic choice of an area to test Cottrell’s propositions (following Boscana’s figuring of inland people as 3 to 4 leagues away from the mission). No help is offered the situation if one assumes that Boscana’s seemingly systematic directional confusion carries over into his consideration of where inland-coastal versus coastal people were located. Rather, just the opposite occurs since, in his reckoning, the Trabuco study area would be shifted somewhat westward, toward the coast.

Archaeological Critique

*False facts are highly injurious to the progress of science, for they often endure long; but false views, if supported by some evidence, do little harm, for everyone takes a salutatory pleasure in proving their falseness; and when this is done, one path towards error is closed and one road to truth at the same time opened. – Charles Darwin (1871:Chpt. XXI), *The Descent of Man and Selection in Relation to Sex**

Cottrell (1991:9) gives attention to two types of territoriality, the more general being labeled a “home range” as distinct from a “defined and defended area.” A “home range...can be associated with a particular linguistic or ethnic group” which might be identified on the basis of shared traits such as design or style elements (1991:9). Demarcation between two “home ranges” ought to be more easily accomplished than demarcation between more specific territorial formations, that is, “defined and defended” areas. It is Cottrell’s treatment of “home range” issues that especially piques our interest.

Ethnic/linguistic “home ranges” might be separated out as different “style zones,” each with its characteristic constellation of culture elements, particularly style or design attributes, but Cottrell acknowledges that barriers exist to so identifying “style zones” within the local archaeological record. She writes:

...many of the features of the prehistoric coastal cultures that would be stylistically diagnostic, such as basketry designs and body tattooing are not recovered.... Frequently, the number of beads, projectile points, and other diagnostic artifact categories recovered from archaeological sites along the coast is low and cannot be used effectively to define style zones [1991:14].

Without stylistic artifacts to show the way, Cottrell (1991:14-15) chooses to focus on the presence/absence of shellfish food remains, shellfish artifacts, fish remains, sea mammal remains, and steatite, as well as on customs related to the disposition of the dead (Cottrell 1991:45-47) to distinguish people living in the inland foothill region as a different cultural entity from those peoples at or near the coast who significantly exploited the maritime zone. Because of strict territoriality, these inland people are said to have lacked access to ocean resources, just as coastal “Hokans” were restricted from the inland Shoshonean area. Thus, prehistoric inland sites would be expected

to lack ecofactual remains associated with the maritime zone. Further, the inland-coastal boundary would be so formidable a barrier as to allow but few artifacts, such as those manufactured of shellfish and steatite, to penetrate into the inland "home range."

Cottrell (1991:76) states that 42 Native American sites lie in the Trabuco Creek portion of her study area. Twenty-one of those sites where archaeological investigations have occurred were used to address the research question regarding territoriality. Further, six sites in the Oso Creek area were incorporated into this investigation. The reader is referred to Chapter VI in Cottrell (1991). The general lack of shellfish, fish, and sea mammal remains, the dearth of shell artifacts, and the absence of steatite at most Arroyo Trabuco sites discussed by Cottrell are offered as evidence that the Trabuco area was held by inland (Shoshonean) people, rather than by coastal (Hokan) people.

Of the 21 Trabuco Creek sites, only two (CA-ORA-862 and CA-ORA-898) have significant shellfish remains and shell beads (insufficient information for dating the beads is provided). Cottrell (1991:137-147) assigns these two sites to the post-contact period and then maintains that the rest of the sites in the Trabuco Creek drainage, which lack shell, support her argument that they constituted a separate territory or home range for people who did not have access to coastal resources. In the Oso Creek drainage, one of the sites which has large quantities of shell and shell beads (CA-ORA-469) is also assigned to the post-contact period (Cottrell 1991:173-174), while other sites with smaller quantities of shell (CA-ORA-374, CA-ORA-465, and CA-ORA-474 Locus A) are assigned to the Late Prehistoric Period based on radiocarbon dates and the presence of arrow points. Cottrell (1991:172, 174-175) believes these Oso Creek sites are part of a different territory from the Trabuco Creek sites. The Oso Creek people had access to coastal resources, which the Trabuco Creek people did not, according to Cottrell. However, Cottrell does not discuss the time period during which the Trabuco Creek sites lacking shell were likely occupied and does not

account for differences in settlement subsistence systems in different time periods.

While Cottrell (1991:171) suggests the Trabuco Creek sites classified as base camps "represent the entire span of culture history," the lack of mortars and pestles and a single radiocarbon date of circa 5,000 BP from CA-ORA-472 suggests a Milling Stone Period occupation for these five sites. In addition, discoidals came from two of the Trabuco Creek base camps. Discoidals usually indicate the late Milling Stone Period or the Intermediate Period, as noted by Cottrell (1991:85), who reports discoidals are present in sites elsewhere dating to 1700 BC to AD 500. Thus, it appears that Cottrell is comparing Trabuco Creek Milling Stone or Intermediate Period sites with Late Prehistoric Period Oso Creek sites. This would leave the Trabuco Creek area without a Late Prehistoric Period occupation, but, as will be shown, the two sites with shell in the Trabuco Creek drainage probably were occupied during the Late Prehistoric Period, not just the post-contact period, as Cottrell maintains.

Sites with indicators of Late Prehistoric use and having notable amounts of shellfish would contradict the idea of home range territoriality, and, in particular, such territoriality based on ethnic/linguistic identities. There are three sites in Cottrell's (1991) study area with significant shellfish remains, but Cottrell sees no contradiction, interpreting each site as a post-contact manifestation of coastal Indians running inland and away from the long arm of Spanish mission subjugation (e.g., 1991:174, 202-203). Two of the sites, CA-ORA-862 and CA-ORA-898, are located in the Arroyo Trabuco. CA-ORA-469 is found along the Oso Creek drainage.

CA-ORA-862 is 60 by 40 meters, with midden nearly two meters deep (Cottrell 1991:137-143). In addition to the large quantities of shellfish remains, over 100 shell ornaments, four trade beads, over 50 potsherds, a ceramic pipe, and a steatite shaft straightener were recovered. A single reported radiocarbon date is 290 ± 150 BP (UCLA #2394). There are also 26 complete Cottonwood Series points. The site seems

relatively dense in terms of artifacts per unit volume (Cottrell 1991:138).

This site is interpreted by Cottrell (1991:139, 141) as “a ‘runaway’ Indian site, occupied during the late winter-spring-early summer period.” The ceramics are said to be evidence supporting an early contact-period occupation (Cottrell 1991:137, 139, 141). Such a view ignores key articles (Evans 1969; Koerper et al. 1978; Hurd et al. 1990) relevant to the subject.

The lone radiocarbon date (290 ± 150 BP; UCLA #2394) from CA-ORA-862 is said to be part of the evidence supporting occupation during the post-contact, early historic period (Cottrell 1991:139), an astounding statement for several reasons. First, Cottrell should have applied the common knowledge that radiocarbon dates are not dates per se, but rather, statements of probability. At the very earliest, any “runaway Indian camp” should date to after AD 1776 (174 BP) when the San Juan Capistrano Mission was founded. The one-sigma probability range for the date is 440 to 140 BP. While a small portion of this range is post 174 years BP, most of it is in the pre-mission and pre-contact period. Further complicating the issue is that this very same radiocarbon date (UCLA #2394) is also attributed by Cottrell (1991:169) to CA-ORA-469 in the Oso Creek drainage. The radiocarbon date provides no support for classifying CA-ORA-862 as an exclusively post-contact phenomenon.

Furthermore, this encampment location is said to have been chosen so that the Indians could easily hide from the Spanish. A post-contact period occupation is undeniable since four trade beads were reported, but there seems to be no thought given to the likelihood that this site may have also had a Late Prehistoric component (see below).

Cottrell (1991:142-143) writes:

As would be expected the “runaway” Indians would have originally been from the coast and would have brought food with them in the form of shellfish to tide them over until a new camp could be established. It is expected, with so few groundstone implements represented in the assemblage,

that the Indians left the coast during the late winter. They probably stayed at ORA-862 until summer and then continued their journey into the interior. Local Native Americans from San Juan Capistrano indicate that their ancestors moved to live with relatives in the Corona-Riverside area and this is why their ancestry and papers are in such disarray.

An exclusively post-contact short occupation (less than one year) encampment could not result in midden nearly 200 cm deep in places, with such a dense concentration of artifacts. Cottrell (1991:139) states that, although CA-ORA-862 was occupied for a short period, “intensive cultural activities and soils geology worked together in this case to produce a deep rich site.” No matter how intense the activities, less than a year of occupation could not result in 200 cm of cultural deposits. Regarding the statement that the ancestors of San Juan Capistrano Native Americans moved to live with relatives in the Corona-Riverside area, if the coastal people were Hokan, the migrants would find no relatives on the eastern side of the Santa Ana Mountains in Shoshonean territory. There is no citation by Cottrell for this statement.

Rather than a post-contact camp briefly occupied by “runaway Indians,” it is highly probable that CA-ORA-862 represents the physical remains of the Juaneño village of *Alume*, listed in the San Juan Capistrano Mission records. *Alume* was located on upper Trabuco Creek, according to O’Neil (1989:113) and Earle and O’Neil (1994:Figure 1). In a later study, Earle (1997:F3-5) takes issue with Bolton’s (1927:138) placement of the Portolá Expedition’s camp of July 24, 1769 at Aliso Creek. Earle places this camp (named San Francisco Solano by the Expedition) at Trabuco Creek near the village of *Alume*. Earle’s map places *Alume* on Trabuco Creek above its confluence with Tijeras Canyon (Earle 1997:Figure 1). CA-ORA-862 is shown in a similar location on Cottrell’s (1991:78) Figure 3 (see our Fig. 1). The account of Miguel Costansó, a member of the 1769 Portolá

Expedition, describes the location of a village in this area encountered on March 24, 1769:

...crossing a good stretch of flat land, we came upon another very good-looking canyon, which ran at the foot of a high mountain; with an arroyo of water and much tree cover. We set up our camp on the east side on flat ground; and at that point there came to visit us the Indians of a ranchería which they inhabited in the canyon itself [Costansó 1992:10; translated by Earle 1997:F-3,4].

Note that the ranchería or village is described by Costansó as being “in the canyon itself.” Cottrell (1991:137) describes CA-ORA-862 as having an “unusual” location because it is in Trabuco Canyon, “rather than on the Plano or surrounding foothills,” where most of the other sites in her study area are located. Crespí, a friar with the Portolá Expedition, states that the Expedition on July 24 “made camp upon a large, very grass-grown tableland of very good dark friable soil, along one side of this hollow before going down to it (Brown 2001:303).” The “tableland” likely refers to the Trabuco Plain and the “hollow” (*cañada* in the original Spanish) to Trabuco Canyon. Crespí states there was a stream in the hollow with “a good flow of water running in it” (Brown 2001:302-303). Twenty-two men, along with women and children, from the nearby village came to the expedition’s camp (Brown 2001:303). Unfortunately, Crespí does not say whether the village was in the canyon. The people from this village “presented us with a great deal of their grass seeds, which are very good, [and] a great deal of very good sage [-gruel] refreshment” (Brown 2001:303). When Crespí returned with the expedition on January 20, 1770, the stream at San Francisco Solano was dry, and they did not see any people (Brown 2001:667). Crespí passed through San Francisco Solano a third time in April of 1770 on his way north to take up his missionary post at El Carmelo (Carmel) Mission. He passed through “the very lush hollow and stream of San Francisco Solano” on April 21, 1770 and found

twice the depth of water flowing in the stream as in July of 1769 (Brown 2001:685). The area was again occupied, as Crespí (Brown 2001:685) “saw some of the heathens belonging to the village here.” Earle (1997:F-4) estimates a population of 50 for the village of *Alume*. The numbers and kinds of artifacts indicate that CA-ORA-862 was a Late Prehistoric village. Its location matches the topographic description provided by the Portolá expedition.

CA-ORA-898 is five kilometers south of CA-ORA-862 and is the only other site also located in Arroyo Trabuco. It too contained marine shell, as well as marine vertebrate remains (Cottrell 1991:143-146). The site has been interpreted by Cottrell as an exclusively “post contact camp, probably occupied during the winter-early spring period given the lack of groundstone tools in the assemblage” (1991:146). Cottrell “anticipated that the inhabitants of this site [also a ‘runaway’ Indian camp] continued to move easterly to escape Spanish domination” (1991:146). This too represents a puzzling interpretation. Although only eight 1 X 1 m units were dug to sterile (depth not indicated by Cottrell), the equivalent of only two 2 X 2 m units, the artifacts recovered include 5 manos, 14 projectile points (mostly Cottonwood Triangular arrow points) and over 2,500 pieces of debitage. This indicates more than a short-lived (less than one year) post-contact “runaway” camp. The units were probably not shallow, for it took efforts during two semesters by CSU Long Beach students to finish the eight 1 X 1 m pits. One does not expect significant depth for a “runaway” Indian camp. But even supposing, for the sake of argument, that the units were, on average, shallow, the artifact concentrations would have been especially dense, hardly the signature of a very brief occupation of people anxious to escape eastward. Cottrell’s interpretation circumvents evidence we believe indicates pre-contact (Late Prehistoric) people accessing the coast, and thus we suggest that the cultural and ecofactual remains from CA-ORA-898 can be used to help disprove the hypothesis that an ethnic/linguistic territorial boundary barred so-called “inland” peoples’ prehistoric forays to exploit maritime

zone resources. A post-contact occupation at CA-ORA-898 would come as no surprise, but lack of any Late Prehistoric occupation would be surprising indeed. All well documented Orange County native sites with post-1769 artifacts with which we have familiarity also have a Late Prehistoric component.

Three pieces of obsidian debitage from CA-ORA-898, two sourced to Obsidian Butte and the third also presumed to be of Salton Sea origin, were subjected to hydration analysis, resulting in readings of 2.1, 2.2, and 2.3 microns. Rejecting the Friedman and Obradovich hydration rate as "too slow," Cottrell (1991:145) used the Laylander (1986) formula to provide interpolated dates ranging from AD 1266 to AD 1823. The problem with obsidian hydration dating is that many rates have been proposed for each source and one can choose the rate that best supports one's hypothesis. In this case, Cottrell selected Chace's (1974) rate because it puts, for Cottrell, all the obsidian use in the post-contact period. Specious precision is evidenced in the following quote:

Given the nature of the deposit, and its resemblance to ORA-862, Chace's (1974) rate of 95 years per micron provides the best fit, if the site is to be interpreted as a "runaway" Indian camp. The dates using only Chace's (ibid.) formula, are interpolated at A.D. 1770, A.D. 1780, and A.D. 1789. The data indicate that this site was a post contact camp [Cottrell 1991:145-146].

According to Cottrell, there is yet another "runaway" Indian camp, CA-ORA-469, this one in the upper Oso Creek area (Cottrell 1991:162-170), that functioned as an inland refuge for post-contact Hokan coastal people escaping European oppression. This site also contains marine shell, 122 shell artifacts, and 90 steatite artifacts (Demcak and Cottrell 1985). A single radiocarbon date, 290 ± 150 BP (UCLA #2394), and numerous pottery sherds are said to offer further confirmation that the site is of post contact occupation only (Cottrell 1991:169). As

reported above, UCLA #2394 was also used to date CA-ORA-862 in Arroyo Trabuco. Note that no radiocarbon dates are provided in the CA-ORA-469C site report (Demcak and Cottrell 1985).

Forty-five sherds attributable to a single Trincheras Purple-on-Red vessel were reported for site CA-ORA-469 (Demcak and Cottrell 1985:34). Johnson (1963:183) places this Trincheras type in the A.D. 800-1100 period in southern Arizona. However, on the basis of the late radiocarbon date (290 ± 150 BP; UCLA #2394) and the presence of Cottonwood Series points which she presumed to be equally late, Cottrell thought it doubtful that the sherds were of the Trincheras tradition, the error of misidentification being laid to Demcak (Cottrell 1991:136, 169). Rather, Cottrell came to believe the sherds were of a later type. Eliding important source citations, she writes:

Southwest archeologists indicate there is a pottery type made by the historic Pima of northern Mexico and southern Arizona that is a dark red-on-red that can be easily confused with Trincheras pottery. It is also possible that the pigments used in the decoration of the pottery could be from further south in Mexico [Cottrell 1991:136].

This pottery, it is proposed, was transported from Mexico to southern California either by Spaniards or Indians accompanying Spaniards. Thus, the pottery is suggested as being probably post-contact, a supposition that fits Cottrell's belief "that Ora-469 represents a 'runaway' Indian site" (Cottrell 1991:169). No ceramics expert was cited to provide a higher level of confidence for this pottery type identification. Eleven burials "with large quantities of grave goods," including stone bowls, were also reported from Locus 3 of CA-ORA-469. This cemetery was designated CA-ORA-469C. Cottrell (1991:45-46, 203) states that treatment of the dead through burial is a Hokan practice and that cremation was a Shoshonean practice, but it should be pointed out that the Kumeyaay practiced

cremation and they spoke a Hokan language. Obviously, the 11 burials do not fit with Cottrell's model because CA-ORA-469C is in Cottrell's inland area which should be Shoshonean; therefore, according to Cottrell, cremation should have been practiced. To get around this problem, Cottrell (1991:170) wrote:

In addition to the occurrence of late prehistoric projectile points and introduced pottery, the presence of the cemetery, a heretofore unknown phenomenon in the inland foothill region is a major divergence of prehistoric patterns. In order to have a cemetery as large as the one at Ora-469C associated with a relatively small habitation site, indicates that an epidemic type occurrence must have affected this population.

Offering no evidence, Cottrell (1991:170) adds, "one of the introduced diseases was no doubt responsible for the majority of the deaths observed at Ora-469C." Following this discussion of CA-ORA-469, we offer an expanded perspective on the subject of disposition of the dead in Late Prehistoric Orange County.

A post-contact occupation may well have occurred at the site, but that does not preclude a prehistoric occupation as well. At Locus 3, average depth for the 17 units representing 25 square meters (investigated under the direction of William Clewlow) was about 40 cm, while maximum depth was 50 cm. Size alone would indicate some amount of occupation prior to the founding of the mission. The material inventory reported from Clewlow's (1976) salvage excavations and later emergency salvage work (Demcak and Cottrell 1985) is extensive, hardly the expected remains solely of escapees hiding out briefly (less than one year) before heading northeast through the foothills and beyond.

There are three other sites in the Oso Creek drainage area with ecofactual shellfish, CA-ORA-465, CA-ORA-374, and CA-ORA-474. CA-ORA-465 (Cottrell 1991:149-152) has "rich black midden" with dimensions of 30 by 50 meters. Average depth was over 95 cm in the total 26

square meters excavated. Shell beads (insufficient information is provided to date them) were recovered along with 17 manos, over 1,300 debitage specimens, and other artifacts. Two radiocarbon dates (A.D. 770 and A.D. 1350) place it in the Late Prehistoric period. It is interpreted as a "small seasonal camp" occupied during the late summer-early fall (Cottrell 1991:149-150,152). It is also stated that the site's inhabitants "had direct access to coastal resources or were involved in an exchange network which allowed them to acquire shellfish and shell beads" (1991:152).

CA-ORA-374 was a Late Prehistoric and/or contact period site which, in addition to its shellfish, yielded shell artifacts and a steatite fragment. In the test phase investigation, 53 manos, 13 metates, one mortar and six pestles were recovered. The people at this site "had either direct access to the coast or were involved in a trade network which moved coastal resources into the inland foothills" (Cottrell 1991:159).

The upper level of Locus A at CA-ORA-474 yielded a bony fish vertebra, four *Argopecten* fragments, and three mussel shell fragments (Cottrell 1991:104). This ecofactual material was excavated from the same area as the Obsidian Butte debitage. If Chace's (1974) proposition is correct, that the Obsidian Butte source was not exposed until A.D. 1650, then Cottrell (1991:104) considers it probable that the shellfish remains are late or "possibly" post-contact. For the record, Obsidian Butte obsidian was available before A.D. 1650, but not continuously (Waters 1983). The obsidian data are ambiguous in any case. Cottrell (1991:172) speculates that the last component at CA-ORA-474 might be related to CA-ORA-598, CA-ORA-465, CA-ORA-462, and CA-ORA-374.

A more straight-forward hypothesis to account for shellfish at the three so-called "runaway" Indian sites (CA-ORA-469, CA-ORA-862, and CA-ORA-898) and sites CA-ORA-465, CA-ORA-374, and CA-ORA-474 along Oso Creek would posit that Late Prehistoric inhabitants of the Trabuco-Oso Creek area did indeed exploit the coast and brought marine resources back to

these sites with them. The three “runaway” Indian sites were not exclusively utilized during post-contact times, and they may have been settled or visited from *Putuidem* or other habitations in the San Juan Capistrano Valley. As previously recounted from Boscana’s writings, *Putuidem* was settled by migrants driven by population resource imbalances: specifically, not enough seeds. When seeds continued to be in short supply relative to mouths to feed, *Putuidem* served as a kind of mother village with some people settling in the surrounding area. Perhaps the village of *Alume* in the Arroyo Trabuco had been founded by people from *Putuidem*. It is conceivable that some of these people would have followed local drainages north and northeast to relocate, maintaining ties to their geographic roots, as well as continuing to sustain themselves in part by acquiring marine foods from Dana Cove and/or the open coast. Given Crespí’s testimony that there was water in the San Francisco Solano stream (likely Trabuco Creek) and people in the village (likely *Alume*) in July and April, but not in January, CA-ORA-469 (which had a cemetery) and CA-ORA-898 may have been alternate locations for *Alume*, occupied when water was not available at CA-ORA-862.

The archaeological sites classified as base camps that lack shell in Cottrell’s study area, we suspect, were occupied during the Milling Stone period or, possibly, the Intermediate period. The sites with shell and shell beads (insufficient information is provided to date them) were likely occupied during the Late Prehistoric period with some occupations extending into the post-contact period. As has been demonstrated, these sites were not occupied solely during the post-contact period by “runaway Indians.” Given this reconstruction of the temporal affiliation of the sites, a different interpretation of the settlement-subsistence systems operating in the study area is possible.

During the Milling Stone period, the inhabitants of the prehistoric Orange County area appear to have moved through a seasonal round of settlements, occupying sites on the coast during the summer to procure marine

resources, and occupying inland sites during other seasons (Mason et al. 1997:58). We hypothesize that Milling Stone period sites in Cottrell’s study area represent the inland portion of a seasonal round of settlement that also included the coast where the people had access to marine resources. We further hypothesize that the lack of shell in the Trabuco sites is not a result of territoriality, but reflects a forager subsistence system where people moved to resources rather than bringing resources back to a central settlement (Binford 1980:5, 10, 15). In the summer, people moved to the coast where they obtained marine resources. In other seasons people moved inland to the Trabuco sites, during which time they did not obtain marine resources. The archaeological data suggest a “collector” system (cf. Binford 1980:10-12,15) was in place during the Late Prehistoric period. People who lived in the village of *Alume* (probably CA-ORA-862 with alternate locations at CA-ORA-898 and CA-ORA-469) would have sent collecting parties to the coast to obtain shellfish and bring them back to the inland sites, which were probably occupied most of the year. The location of CA-ORA-862 allows access to water in Trabuco creek and grass seeds from the Trabuco Plain. Alternatively, shellfish could have been obtained through trade with Juaneño villages closer to the coast (such as *Putuidem*) using shell beads as a medium of exchange. We propose that the distribution of shell and shell beads in Cottrell’s study area does not represent territories resulting from an ethnic-linguistic boundary, but rather differing settlement subsistence systems operating in the Milling Stone and Late Prehistoric periods.

Burial And Cremation In Orange County

Cottrell’s (1991:203) statement in her conclusions that the “normal pattern according to Boscana (Robinson [sic] 1978) was for the interior Indians to cremate their dead” implicitly recognizes some amount of burial. Her next sentence, “Only the coastal Chumash and related groups buried...” (Cottrell 1991:203), is contradicted by ethnographic and ethnohistoric

data (see below). Certainly, the Chumash were a burial people (Grant 1978:511-512; Mason 1912:166). Further, it strikes us as disingenuous that Cottrell limits Boscana's observations on the "normal pattern" to "interior Indians" when no such specificity appears in the Franciscan's manuscript. The following discussion should supply some clarity to the subject of burial versus cremation.

Ethnographic information indicates that, before missionization, most of the Gabrielinos' and Juaneños' Shoshonean (or Takic speaking) neighbors and near neighbors practiced cremation (Kroeber 1925:842; see also Spier 1928). These groups include the Vanyume (Kroeber 1925:841); Serrano (Strong 1929; Drucker 1937:36); Cahuilla (Hooper 1920:343; Strong 1929:84, 121, 180); and Luiseño (Sparkman 1908:226; Strong 1929:299-300; True 1966:217; Moriarty 1969:48; Anonymous 1973). The Tatavium (Aliklik) may or may not have cremated (Kroeber 1925:842). The Kitanemuk may have disposed of their deceased by burial (Kroeber 1925; Harrington 1942:37). It is clear that, if Kroeber tabulated a linguistic tribe as a cremation group, it might mean only that they most frequently cremated (Gould 1963:153). According to Kroeber (1922:295, 1925:842), the Gabrielino, including the Fernandeno, predominantly practiced cremation. Yet Kroeber (1925:556) recognized that the three Shoshonean (Takic) speaking southern Channel Islands favored burial, and these island dwellers were in that respect more like their Chumash neighbors. Kroeber (1925:633) further noted that in the San Pedro, Redondo, Santa Monica, and Topanga areas, the Gabrielino practiced some amount of interment.

Pedro Fages (1937) offers little cultural information compared to the other diarists who participated in the 1769 Portolá Expedition. He did, however, relate that the Gabrielino had a custom of burying their dead.

Responses to the Spanish government's 1811 request for information on native peoples demonstrate that there might be a mix of the two practices. Franciscans at both San Gabriel Mission (Engelhardt 1927:104) and San

Fernando Mission (Engelhardt 1973:32; also Kroeber 1908:12) apparently witnessed both cremations and burials. Harrington (1942:37, 45) records that cremation and burial were practiced, at least as far south as the mouth of the Santa Ana River, but a Fernandeno informant and two Gabrielino informants of Harrington (1942:37) believed there was only cremation. Hugo Reid (Heizer 1968:30) wrote of Gabrielino burial practices and reported that when a body showed signs of decay, it was wrapped in a covering and tied head to foot with hands crooked upon the chest.

While Father Boscana's (1978:43, 73, 75, 77, 78; Harrington 1934:8, 50, 51, 53) writings support the view that cremation for the Juaneño was the overwhelming choice, he was quite aware that burial was an option (Boscana 1978:73). It is interesting to note that, according to Juaneño mythology, a discussion was undertaken to determine whether the corpse of Ouiot (also spelled Owiot) should be buried or burned, and cremation was chosen (Harrington 1934:13; also Moriarty 1969:18).

Since cremation was preferred over burial by Shoshoneans in Orange County, should the greater number of Late Prehistoric burials reported archaeologically near the coast be taken to indicate that maritime-oriented people were not Shoshonean, but rather Hokan? Consider the following. First, the cremator did a thorough job, seeing to the entire consumption of the deceased by fire (Boscana 1978:73; Harrington 1934:50). In addition to the wood used to fuel the mortuary fire, many of the offerings were combustible. Bows and arrows, feathers, skins, and beads might be burned with the body, and valued objects offered by relatives and friends would also be consumed by fire (Boscana 1978:73).

Davis (1921:96) has notes on the Luiseño superintendent of the cremation fire. Using a long pole, this man would make sure that all bundles of clothing would be incinerated. The thoroughness of disposing of the body might, at least among some Luiseño, continue beyond the initial burning. After a cremation, a kind of communion took place in which calcined bones were pulverized and mixed with water, and

possibly with ash, and drunk from a small olla or bowl (Davis 1921:101; Strong 1929:299-300; White 1953:575). Strong (1929:300-301) reports that at a second ceremony, a basket containing the deceased's ashes might be burned. It is a wonder that archaeologists find any evidence of cremation at all, especially when one recognizes that the vertebrate faunal analyst usually only works with a sample of the excavated bones and teeth from a site.

The archaeological record from the Orange County coast is quite consistent with the observations about Shoshoneans (e.g., Reid in Heizer 1968; Harrington 1934; Boscana 1978). In relatively late prehistoric times there seem to have been few burials relative to even the most conservative population estimates.

Assuming that disposition of the dead among Chumashans was exclusively by burial, where are the expected numbers of interments from Late Prehistoric coastal sites, if, as Cottrell seems to favor, the occupants of the coast could have been Chumashan? There are too few to provide a fit to such a model. Consider *Putuidem* (CA-ORA-855), a major Late Prehistoric village, only one-half league from Mission San Juan Capistrano, hardly inland, with notable dependence on marine resources. With a hand-excavated sample of 228 units, only six burials were encountered (Koerper and Mason 2001:Section 7). A seventh burial was found along the adjacent road during excavations for fiber-optic cable installation (Landis et al. 1994). Also, at least five cremations were identified, a significant number given the previous discussion on the thoroughness of burning during cremation and later ceremonies. It is likely that most cremations did not survive to become part of the archaeological record. The mix of burials and cremations fits a Shoshonean model.

Coastal Orange County: Yuman At Contact?

The possible connection of local coastal people with Kumeyaay (Diegueño), that is, Yuman speakers (Hokan language family), rests on the thinnest of pretexts. To begin, Cottrell reports that Kroeber (1925:637-638), in

reviewing the circa 1825 Boscana manuscript, noted that the local sea-coast Indians' creation story posits the ocean being created first, but inland peoples' mythology has the sky and earth being created first. Kroeber (1925:637) reports that with regard to the inland mythology the first things in the universe were the sky (brother) and the earth (sister), whose union produced, first, "earth and sand." This is a faithful account of what is written in Boscana's 1825 manuscript (1978:27). There is actually no mention of "sky and earth" being created first, rather only that they were the first things in the universe. When there is mention of some kind of creation, it is "earth and sand" that are "born."

It is entirely correct to note that earth preceded the ocean in the inland version of creation (Robinson manuscript), since there is mention of Coyote overturning an abalone shell filled with urine. It is not specifically written here (Boscana 1978:28) that the urine became the ocean. However, the idea is implied, for the event of overturning the abalone took place at the beach where no ocean yet existed. Immediately preceding his description of Coyote's actions, the Franciscan priest writes the following:

They [the conspirators] mixed a poisonous ingredient in his [Ouiot's] beverage, and administered it to him. After drinking of this, he immediately became sick and left the mountains where he lived, and resorted to the place which is now occupied by the beach, or seashore, for it is supposed at this time there was no sea. His mother, hearing of the danger to her son, mixed for him a remedy which she placed in a large shell and placed in the sun to ferment [Boscana 1978:28].

That Coyote's actions produced the ocean seems certain when the circa 1822 de Cessac manuscript is consulted (Harrington 1934:12). Coyote deliberately kicks over an abalone shell containing worms and herbs and Ouiot's mother's urine. The urine became the sea, the worms became the fish, and the herbs became the kelp and other sea plants. The story also accounts

for the ocean's salty and bitter taste that is, "the flavor of urine." Here too the concoction had been intended as an antidote to save the poisoned Ouiot.

Returning to Cottrell's reading of Kroeber, she believes that Kroeber noted that the local coastal people placed the ocean at the top of the creation list. Her statement, with reference to Kroeber (from his *Handbook of the Indians of California*), is this: "while with the Coastal Indians, the ocean was created first followed by the creation of man" (Cottrell 1991:45).

Kroeber did not write that the coastal Juaneño placed the ocean first on the creation list. Rather, Kroeber (see 1925:637) relates fairly accurately what appears in Boscana (1978:Ch. 2). In the circa 1825 Robinson version, Boscana wrote that "An invisible and all powerful being called Nocuma made the world, the sea, and all that is therein contained, such as animals, trees, plants, and fishes" (Boscana 1978:31). Further, the sea was at one time not an ocean, according to people residing on the sea coast (ca. 1925 version), but was only "a small stream of water running from the south to the north, encircling the world... (Boscana 1978:31). Kroeber on this point can be faulted for carelessly referring to this small freshwater stream as the "ocean" (Kroeber 1925:637).

The fish in this stream were piled atop one another "in such a state of inconvenience" that they discussed the possibility of venturing onto the land. Boscana continues:

Others were of the opinion that it would be impossible [to go on land] for they would perish when exposed to the air and the heat of the sun, and besides they had no legs and feet as other animals had. While conferring upon this matter, there came a large fish, bringing with him the rock, Tosaut, which having broken, they found in its center a ball formed like a bladder and filled with gall. This they emptied into the water and from its fresh state it was converted into a bitter condition. The water then immediately swelled and overflowed upon the earth, covering the space which

it does now, and the fishes were rejoiced to find themselves so amply supplied with room, and at the change effected in taste [Boscana 1978:31].

Cottrell did not take note of the above ordering, earth before ocean, for there is reference in Boscana's words to the *Tosaut* stone, and Cottrell placed great importance on the *Tosaut* as something that she believes connects the Hokan Chumash to the sea-coast Juaneño.

As a point of interest, the sky is a primary element in the coastal version of creation. Recall that "An invisible and all-powerful being called Nocuma made the world, the sea..." (Boscana 1978:31). Kroeber wrote that "The coast Juaneño attributed the creation of the world, the sea, and animals and plants to 'Night,' Tukma or Tokuma ('Nokuma')" (Kroeber 1925:637). Harrington provides an in-depth discussion of what might be the meaning of *Nokuma*, including the following:

Evidently for the Aj. correspondent of *Náaxuynit*, a ceremonial name for the sky.. Other informants have said that "*Nocuma*" ought to be *Túukvmit*, lit. darkness, being the personified Sky ... husband of ... Earth... [Harrington 1978:144].

In other words, in coastal mythology, sky and earth (land) precede the ocean. In basic essentials, the inland and coastal mythologies are broadly similar. Indeed, Boscana recognized this, for he wrote that Mission San Juan Capistrano Indians "account for the creation in one way, and those of the interior (about three or four leagues distant) in another, though *in substance the beliefs are the same*" (Boscana 1978:27; emphasis ours). Such hardly reflects two very distinct ethnic/linguistic units, yet Waterman (1909) alerts us to differences between the inland (Version A, or "Serrano") and coastal (Version B, or "Playano") creation stories in Boscana's account that indicate important cultural distance. Here we ask the reader to indulge us in a brief digression.

Having abstracted thirteen themes from the

various Luiseño creation stories (including Versions A and B), Waterman's comparative analysis found that the coastal Juaneño (Version B) differed "in respect to ten or eleven out of the thirteen themes from the average Luiseño account" (Waterman 1909:54). He expands:

Considered from a purely impressionistic point of view, the [B] account seems to bear more resemblance to the mythologies of the peoples to the north and east than to our other Mission Indian stories. The crowding of the fishes in a narrow ocean [see previous comment], and the fixation of the world by a central "Tosaut," are cases in point [Waterman 1909:54].

All of this is quite consistent with the previously mentioned migration narrative describing peoples from seven to eight leagues to the north settling in the San Juan Capistrano Valley. Now, returning to the premise that coastal Juaneño placed the creation of the ocean first, Cottrell (1991:45) writes:

Kroeber makes the following reference in discussing the origin myth of the coast Juaneño: "of all the southerners, only the Yuman tribes tend to begin their cosmology with the water" [sic] (1970:638). He does not, however, clarify this statement and its meaning can be interpreted as a general reference to the coastal group having some cultural connection with the Yuman tribes.

This interpretation is fitted to the idea that the thin coastal area of Orange County was held at contact by Hokan speakers, a notion contrary to the great weight of evidence. We considered the Shoshonean wedge of Takic speakers on a linguistic map and wondered what could possibly contain such a body of people at a boundary so close to the wealth of resources provided by a maritime zone. We noted that the southern Channel Islands were held by Shoshoneans, and that native place names along the Orange County coast are Shoshonean (Takic).

And just what is the context of Kroeber's mention of Yuman (Hokan) tribes and their "cosmology with the water"? The relevant paragraph follows:

Tradition further told of a flood which submerged the whole earth except one mountain peak. This event is placed in the time of Chinigchinich's appearance, subsequent to the death of Wiyot, and has parallels in Mohave belief. In general, the concept of primeval water is central Californian. In northwestern *and in southern California the world is believed to have existed first*, and the subsequent flood to have been temporary. Of all the southerners, only the Yuman tribes tend to begin their cosmology with the waters (Kroeber 1925:638; emphasis ours).

Kroeber's words do not justify an interpretation that he obliquely recognized an important ethnic/linguistic connection of Yumans and coast Juaneños. Have "waters" of a flood event been confused with creation of the ocean? Cottrell's (1991:45) take on Kroeber (1925:638) notwithstanding, Kroeber's statement is clear. The southern California Yumans begin their cosmology with water, and a flood at that, not an ocean creation. Obviously, from Kroeber's perspective, the Juaneño do not begin their cosmology with the waters. Kroeber places the flood event in the period when *Chinigchinich* appeared, subsequent to any initial creation events of the Juaneños.

It is unlikely that Kroeber would have ignored Waterman's (1909:45) distinctions between Juaneño and Luiseño accounts of creation. Kroeber's colleague and close friend had stated the following:

Things as they are now, however, came by birth from Earth as a mother. This, then, according to the Luiseño, is the origin of existence.... The Diegueño account, however, says that in the beginning everything was water [Waterman 1909:45].

Father Boscana does not set the flood story in a text dealing with creation, either in the circa 1822 manuscript or the circa 1825 manuscript. Rather, the flood to which Kroeber referred is explained in the chapter entitled, "Of Many of Their Extravagances" in the Robinson circa 1825 manuscript (Boscana 1978, Chpt. 10, p. 63) and in "Some of Their Many Extravagancies," or Chapter 11 in the de Cessac circa 1822 manuscript (see Harrington 1934:48). Parenthetically, Boscana believed the flood to be the Biblical deluge, of which he thought the Indians had knowledge. Harrington (1978:185-186) offers detailed notes on the flood.

These interpretations of creation mythology helped to formulate a flawed hypothesis of ethnic boundaries. Similar carelessness is repeated in Cottrell's treatment of Chumash creation mythology.

Coastal Orange County: Chumashan At Contact?

The uses of the *tušáwt* belong to the sphere of shamanistic secrecy, and since these uses resemble those of the *noot*, *wiyaala*, and other magical rocks, one has to proceed with the greatest care in preparing an article on the subject [Harrington 1978:146].

A second effort by Cottrell to connect coast Juaneño ethnically to Hokan peoples using creation mythology focuses on the *Tosaut* stone. Cottrell (1991:45) writes:

Another factor which appears to link the coastal group with Hokan speakers is the prominence of the *Tosaut* stone in the creation myth of the coast Juaneño. The *Tosaut* stone also occurs among the Hokan speaking Chumash as the name of a charmstone used by medicine men.

The above quote lacks a source citation. Crucial information is not conveyed, but is supplied in the quote below. Certainly Kroeber

(1925:638) should have been cited, as the following text will make clear. Kroeber wrote:

The prominence of the *tosaut* stone in the creation myth of the coast Juaneño is partly cleared up by the fact that this word occurs among the entirely alien Chumash as the name of the charm stones used by medicine men, and probably in public ritual also. It follows that the intervening Gabrielino must have had similar sacred stones and given them the identical appellation. *In fact it is not unlikely that the practice as well as the name, which is of undetermined etymology, are of Gabrielino origin* [Kroeber 1925:638; emphasis ours].

Kroeber was apparently unaware of ethnographic support of the notion that the Gabrielino did have *Tosaut* stones and that they might be incorporated into girls' puberty rites. C. Hart Merriam (1955:85) described such rocks as porous stones that came from the ocean. A 'to-sow't stone was in the possession of a chief who lent it to the old woman sponsoring the puberty dance. Details are sketchy, but the 'to-sow't was placed in a basket containing hot water where it gurgled and sang after which it was retrieved from the water. After the stone was extracted from the hot water, bitter tea in a basketry bowl was placed atop the 'to-sow't stone. Harrington (1978:135) noted that his informants regarded the *Tosaut* as one of the stones sacred to *Chinigchinich*.

In the coastal Juaneño creation story, *Nocuma* (Sky?) had the spherical world, in motion, cradled in his hands. To stop its movement, *Nocuma* secured a black rock (*Tosaut*) at the earth's center. "This black rock, the Indians say, is from a small island near the beach, and the fragments which they often collect serve as trowels with which they smooth their mud walls" (Boscana 1978:31). It was from the rock *Tosaut* that there came the gall that caused a small freshwater stream to turn into the ocean with its bitter taste (Boscana 1978:31).

In the creation story of the sea-coast Juaneño, the *Tosaut* also appears in regard to the poisoning death of Ouiot. Boscana writes:

A consultation was held by the elders, and it was decided that he should receive his death by means of poison. The rock, *Tosaut*, was procured, and while in the act of pulverizing the ingredient they were perceived by one called Cucumel [Burrowing Owl], who immediately gave information to Ouiot, that they wished to destroy him by poison [Boscana 1978:32].

Harrington (1978:145) gave thoughtful consideration to the *Tosaut*, for his most helpful Chumash informant, Fernando Librado, reported the *Tosaut* as a consecrated rock employed as a charmstone, the black basaltic material of which was found on Santa Barbara Island. With Boscana's account in mind, Harrington admits to at first being "impressed" with the "important information." However, he had second thoughts, writing the following:

But Boscana's use of the word "often" in the sentence "the fragments which they often collect" sounds as if some rock or islet of the San Juan Capistrano coast were meant instead of the distant Santa Barbara Island, although articles from all the Channel Islands found their way freely to all the mainland coasts by canoe barter [Harrington 1978:145].

Harrington gave some thought to local coastal spots (Bird Rock at Laguna Beach, Goff Island, and the San Mateo Rocks near San Clemente) for the Juaneño *Tosaut* stone, employed for a mundane purpose, as a kind of trowel to help construct houses, and also mentioned by Boscana regarding cosmology.

By far the greatest number of ethnographic and ethnohistoric references to the *Tosaut* are those of Chumashan speakers. In Chumash territory a *Tosaut* stone might be a rock of quite ordinary appearance. Hudson and Blackburn (1986:166) refer to *Tosaut* stones as "weather

stones." They are described as small, waterworn pebble talismans having somewhat discoidal shapes. They are generally dark, but one *Tosaut* stone was described as the color of blue granite ware (chlorite schist?) and another as whitish (Hudson and Blackburn 1986:167). J. P. Harrington was able to purchase several *Tosaut* stones which are now in the collection of the Santa Barbara Museum of Natural History (Hudson and Blackburn (1986:168-170). He acquired these magical rocks (in two boxes) at the Tejon Reservation in 1933. The first box contained a cloth bag with a small pebble, 2.2 cm long, 1.3 cm wide, and 1.0 cm thick. Other objects in this cloth bag included "chia" and red maids seeds, two black seed beads, some olivella beads, nearly 100 glass beads, and an 1899 Liberty nickel. The box also held a canvas bag containing "chia" seeds and red maids seeds and many olivella and glass beads. The second wooden box contained five stones, old rags, and feather down. A note with the box stated that the container housed four *Tosaut* stones. Three were small water worn pebbles, but the others were an angular piece of chert and a grooved piece of steatite, leading one to wonder which one of the five had not been considered a *Tosaut* stone. These items are all discussed and pictured in Hudson and Blackburn (1986:169-170). A Chumash weather doctor's kit might contain "black rocks for winter rain" (Voegelin 1938:64). With no more description than this, one might speculate that such rocks were otherwise quite ordinary and were, perhaps, *Tosaut* stones. Some *Tosaut* stones curated at the Santa Barbara Museum of Natural History seemed, according to Howorth (1988), to be identical to iron concretions from San Nicolas Island.

Henshaw's (1885:110-113) discussion of plummet-like charmstones connects the function of the "*Tu-cait*" to ritual employing plummet talismans. At San Buenaventura, a shaman would employ 12 plummet charmstones in a circle, inside of which would be a center stone, or "*Tu-cait*." This stone was a "flattish round beachworn pebble of quartzite, unworked, and stained black with iron" (Henshaw 1885:110-113; or see Yates 1889:299-300, 1890:19). To the "*Tu-cait*"

was attributed power in making rain. Henshaw had further noted that the ceremony of the San Buenaventura Indians also involved seed-meal, white goose down, red ochre, dancing, and singing with rattles. Henshaw (1885:111) comments that "This or similar ceremonies was [sic] observed for curing the sick, bringing rain, putting out fires in the mountains, calling fish up the streams, when war was to be made, etc., etc." A somewhat similar ritual was described by Henshaw (1885:110) for Santa Barbara Indians (see also Yates 1889:299, 1890:19).

It is interesting to note that when the center stone (*Tosaut*) was shown to Henshaw (1885:110; see also Yates 1889:300, 1890:19) by his San Buenaventura informants, they dramatized its rain making qualities by holding the stone firmly in hand, an act which caused moisture to condense on the cool surface of the rock. The moisture obviously connoted rain.

Harrington collected additional notes on the use of the *Tosaut* (Hudson and Blackburn 1986:167). A Chumash informant stated that after prearranging an event by talking to his sacred stone, a man would place a bet that he could control a bronco horse while the man was merely on foot. After belting his *Tosaut* to his person, he would carry out this feat of strength. Harrington sees in this that one can gain physical strength and success in betting at the same time.

Harrington reports that the *Tosaut* protects the home from the ravages of the weather, winds, and rains (Hudson and Blackburn 1986:167). Placed in a receptacle with water, the water, once drunk, will alleviate a child's upset stomach.

Further, the *Tosaut* receives proper ritual treatment in what appears to be a kind of world renewal ceremony. Harrington (quoted in Hudson and Blackburn 1986:167-168) writes:

Each New Years you take the stone and unwrap it and burn the food wrapped with it from last year in the fire – keep adding it little by little to the fire. They lay the stone out and say to it: Here is your food. Guard the house because you are very powerful; care for the house when the wind makes it shake. You give the stone feather down,

chia, money, tobacco – wrap it up in these things and keep it till the next year.

Recall that Kroeber (1925:638) wrote that the term *Tosaut* was of undetermined etymology, but that he believed it might well be of Gabrielino (a Takic Shoshonean language) origin. From a vocabulary compiled by C. Hart Merriam (McCawley 1996:249), one witnesses "to" in initial position for Gabrielino words glossed as "rock," "rocky," "big rock," and "rapids," and in other than initial position for "small rock," and "flat rock." In a Gabrielino vocabulary compiled by Harrington (n.d.) and archived in the Lummis Collection, the morpheme /to/ ([to] and [tō]) appears in initial position in such words glossed as "stone", "boiling stone", and "pedregal" (stony ground), as well as in Gabrielino place names that relate to stones or, occasionally, to mountains. The Gabrielino word for "place of the mortars" begins with [to], and [tō] is in initial position in the Gabrielino word for "white earth" (kaolin?). Also, [to] begins the name of one of the "first people" who "was turned into a great rock which stands erect on the shore of the ocean near San Pedro" (Harrington n.d.). "Stone smoking pipe" in Gabrielino is *tošawt* (Hudson and Blackburn 1987:320). The word *totá*, or "stone," supplied to Harrington (n.d.) by both José María Zalvidea and Santos Kuhn is virtually the same as that collected by Oscar Lowe at Mission San Gabriel in 1875 (McCawley 1996:276-277), by Albert Gatschet (1879:442), by Hale (1848:128), and by Scouler (1841:249). Much earlier, in the late 18th or early 19th century, a Franciscan monk at San Gabriel Mission compiled a short Gabrielino vocabulary listing stone as "tota" (Woodward 1944:146).

In Juaneño (also Takic Shoshonean), "stone" is *tōt* (Kroeber 1909:250). It was in the Trabuco area, probably at the village of *Alume* (see the previous Archaeological Critique section), that Father Crespí, in 1769, collected a short Juaneño vocabulary that included "tot," which he glossed as "piedra" (stone) (Crespí 2001:306). For "stone" in Juaneño, Scouler (1841:248) gives *Tōōt*, Hale (1848:128) gives *tot*, and Gatschet (1879:442, 475) gives *to't* and *to'-otum* (plural).

The morphemes for stone in Chumashan (a Hokan language) are altogether different. At La Purísima and Santa Rosa Island, *haup* and *h'öp'*, respectively, were used for "stone" (Heizer 1955). In 1856 at Santa Ynez Mission, Santa Barbara County, Alexander Taylor recorded a vocabulary in which "stone/rock" is given as *hauep*, and years later Henshaw recorded *hürp* (Heizer 1955). Also in 1856, Reverend Antonio Timeno queried an eighty-year-old informant of Santa Cruz Island ethnic background, who supplied an island vocabulary in which "stone" was given as *wah* (Taylor 1973:37, 39, 40, 44). Earlier, we find *Xeüp* and *Txeup* recorded for Barbareño and Obispeño, respectively (Scouler 1841:249) and *kheup* and *tkherp* [sic] for those same two Chumashan languages (Hale 1848:129). Interestingly, however, [tö] is prominent in Chumashan words from San Luis Obispo recorded by Henshaw, occurring in "one stone," "two stones," "three stones," and "few stones," but occupying the initial position only in the word for "few stones" (Heizer 1955:105). Kroeber (1910:211), however, gives *t-Xöp* as "stone" for San Luis Obispo and *Xöp* is "stone" for Santa Ynez, Santa Barbara, and San Buenaventura Chumashan. Five of Alphonse Pinart's recordings of "stone" in Chumash are similar, two different, but all lack any "to"-like morpheme (Heizer 1952:50-51). In Ventureño, *Tosaut* (weather stone) is *tšawt* (Hudson and Blackburn 1987:315) and [tš] is in initial position for the Ventureño word for "rock thrower" (Hudson and Blackburn 1987:315). Since the Ventureño Chumash were neighbors of the Gabrielino and Kitanemuk, the Ventureño word for "weather stone" may be a loan word from speakers of one of these Takic languages. "Weather stone" in Kitanemuk is *tšait* (Hudson and Blackburn 1987:320). Little difference separated Gabrielino and Kitanemuk with regard to "weather stone," or *Tosaut* in Gabrielino. Clearly, *Tosaut* derives from Shoshonean Takic languages. Yuman (Hokan) languages south of Agua Hedionda Lagoon in San Diego County seem to employ morphemes for rock/stone that are not connected to "to" (e.g., Scouler 1841:248; Hale 1848:129; Gatschet 1879:442; DuBois

1908:231, note 2; Kroeber and Harrington 1914:186; Hohoenthal 1950:10-12). In summary, the available information on the *Tosaut* stone lends no support to the hypothesis that coastal Juaneño and Hokan peoples shared common ethnic/linguistic roots.

Concluding Remarks on the Hokan Hypothesis

Qui tacit consentire videtur [He who is silent gives the appearance of consenting.]
– Medieval legal rule

The Hokan hypothesis violates the stricture that scientific hypotheses ought to be characterized by "prior reasonableness," or "prior plausibility" and "prior probability" (see W.C. Salmon 1973:114; M. H. Salmon 1975, 1976, 1982:42-49; Smith 1977). The *sine qua non* for any hypothesis assigning Hokan persistence in Orange County into the late Late Prehistoric and early contact periods would simply be a modicum of linguistic signatures. This would include Chumashan and/or Yuman village and other place names associated with these people "who seldom moved because their maintenance was derived from the sea" (Boscana 1978:65). This is the area, according to Boscana, seaward of the demarcation drawn at three or four leagues inland from Mission San Juan Capistrano. All village names listed in the Mission San Juan Capistrano records are Takic, not Hokan (Earle 1997).

One of these villages is *Alume*, which probably corresponds to the archaeological site of CA-ORA-862. This site was undoubtedly a Late Prehistoric village with access to marine resources through direct procurement or exchange. This makes it unnecessary to invent a story about a post-contact camp occupied by "runaway Indians" to explain the presence of marine shell in this site. The sites which lack shell in Cottrell's study area are likely part of a Milling Stone period seasonal-round settlement system where people collected marine resources while occupying sites near the coast in one season, and occupied the sites Cottrell investigated along Trabuco Creek in other seasons. This is a more plausible model, given current

knowledge of settlement systems in other parts of the county. Radiocarbon dates from these sites would go a long way toward confirming this model. In the absence of radiocarbon dates, one must fall back on plausibility.

Cottrell's study area is geographically misplaced for any test of her hypothesis, since much of the land in the Trabuco and Oso Creek drainages lies within three or four leagues of the mission. This holds whatever the take on Boscana's mental compass. Most of the area beyond three or four leagues from the mission is on the inland side of the Santa Ana Mountains. Cottrell's (1991) research fails to cohere into a credible argument. The Hokan hypothesis implicitly calls for a complexity of unwonted behaviors for hunter-gatherers to account for long-term rigid maintenance of strict ethnic territoriality and extreme restrictions of commodity exchange. We sense "confirmation bias" (Nickerson 1998) as the overriding signature of Cottrell's study. That is, it is our impression that evidence at variance with the Hokan hypothesis has been studiously avoided, and that certain "observations" were carefully selected only if they might appear, however superficially, to bolster the settlement-subsistence scenario. Our critique is a corrective to Cameron's statement that recent archaeological research in Orange County supports the proposition that Hokan-related peoples remained "until almost the time of contact" (Cameron 2000:51) on the Southern Channel Islands and on the coasts of Orange and Los Angeles counties. No major overhaul of Late Prehistoric culture history is presently warranted, and local archaeologists may remain comfortable placing primacy on coastal Shoshonean ethnographic notes rather than Chumashan or coastal Yuman ethnographic notes in the service of ethnographic analogy applied to local past life-way reconstruction.

Final Thoughts

While rejecting the Hokan hypothesis, we are nonetheless drawn to the proposition that the inland and coastal peoples under discussion

might productively be enrolled in different ethnic categories, although both would have been Takic. Bean and Shipek (1978) and others fold together Juaneño and Luiseño within the greater Luiseño, despite Kroeber's and Harrington's separations on the basis of linguistic evidence. Bean and Shipek's authority is Raymond White (1963), whose studies, they report, indicate that Juaneño and Luiseño are "ethnologically and linguistically one ethnic nationality." For the record, White (1963:91) stated that the two peoples were "so much alike culturally, and the territories so similar geographically" that they might be subsumed under the name Luiseño for his study's purposes; viz., reconstruction of social organization. Our reasons for rethinking such a merger begin with the native account of the founding of *Putuidem*.

The immigration narrative describing the founders of *Putuidem* (Harrington 1934:57-59; Boscana 1978:83-85) identifies Chief Oyaison, Coronne, and their followers linguistically as Gabrielino. Chief Oyaison, according to Boscana's circa 1825 Robinson manuscript, directed the colonizers "to alter their mode of speech as well as their customs, in order to become a distinct nation" (Boscana 1978:85). In the circa 1822 de Cessac version, Oyaison himself gave language instruction for said changes, thereby accounting for the San Juan Capistrano Valley émigrés being different from their relatives at *Sejât* (in the Gabrielino area). In all this, there are emic formulas for maintaining a focus on Gabrielino cultural roots. But, at the etic level, a subtext obliquely observes some amount of absorption of Luiseño speakers into the ranks of the interlopers. In all, the evidence recommends the Capistrano Valley language as more Gabrielino than Luiseño (e.g., Harrington n.d.; Kroeber 1907:149).

Also, as previously noted, the creation mythology of the migrants (Waterman's [1909] Version B) sets them off from inland residents with their Version A. Recall, too, Waterman's (1909:54) impression that Version B connects with peoples north and east, rather than the Luiseño.

That which can be reasonably surmised regarding the nature of the amalgam of native peoples in the San Juan Capistrano Valley argues against subsuming coastal Juaneño under "Luiseño." However, those groups three to four or more leagues inland from the Mission (on the inland side of the Santa Ana Mountains) ought to be considered Luiseño. The determinants of subsistence pattern differences, coast to inland, being largely geographic, are less important, we believe, for purposes of delineating ethnic boundaries, than linguistic considerations and attributes of world view.

We strongly suspect that the establishment of *Putuidem* and subsequent expansion from that base are relatively recent events. We hypothesize that in the limited time between the founding of *Putuidem* and the founding of the Mission, expansion did not occur any great distance (greater than three or four leagues) away from the Valley. We wonder whether some inland peoples were refugees driven east by the incursion. We suggest that the taxon, "Juaneño," is more than just linguistic, identifying as it does, a recent ethnic phenomenon occasioned by a migration out of largely Gabrielino territory, the subsequent settling of *Putuidem*, and some population/linguistic blending with the original inhabitants of the area (probably Luiseño), as well as expansion from this base.

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