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The Possibilities of Women and Men: Gender and the California Milling Stone Horizon

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Traditional formulations of gender, as they have been applied to prehistoric subsistence practices and work organization in California, have sometimes served to mask or obfuscate aspects of adaptive variation. This is particularly true of more ancient lifeways, such as those subsumed under the Milling Stone Horizon, that are not so easily recognized in the cultural landscape of ethnographic California. In this paper, it is argued that gender organization was much less circumscribed during the Milling Stone Horizon; the procurement and processing of major plant and animal staples were the domain of comparatively heterogeneous task groups, incorporating men, women, and children. In the face of mid-Holocene environmental stress, and dispersed but increasingly dense populations, a demographically inclusive, low-bulk foraging strategy may have provided a reasonable solution to the challenges of food gathering. Further, this lack of polarity in gender relationships had social and ideological dimensions, manifested in the absence of explicit gender referents in burial associations. The dynamics of gender and its relationship to work organization are considered crucial to the understanding of prehistoric culture change in California.

THOMAS Jackson (1991) argued that the rise of a "gender-specified" bedrock acorn processing technology had a profound effect on the economic and social organization of the Western Mono of the central Sierra Nevada, California. He suggested that bedrock mortars were *made* by Indian women, not simply the result of use-life trajectories. As such, they represent a capital investment in fixed production facilities made by women. The exigencies of a female-based acorn bedrock mortar technology had significant impacts on settlement structure, intra-site community structure, mobility, production and reproduction, as well as the social relations of property and production (Jackson 1991). To the degree that the acorn and bedrock mortar are practically synonymous with cismontane California aboriginal lifeways (see Kroeber 1925), the rise of this subsistence regime from

3,500 to 1,500 years ago (Moratto 1984; Basgall 1987) may also have heralded a much more pervasive elaboration of gender-specified procurement and production roles. Despite these implications, Jackson (1991:320) rightly noted that some researchers have treated the transition from a millingstone/handstone technology to that employing bedrock mortars and pestles "as little more than an historical development."

This criticism is especially cogent when considering that antecedent, mid-Holocene assemblages from the same geographic contexts are typified by oftentimes massive accumulations of millingstones, handstones, and other cobble-based processing equipment. Falling under the rubric of the Milling Stone Horizon, these same assemblages consistently manifest either absent or limited hunting tool kits represented by projectile points, retouched

bifaces, and other "male-associated" implements. But it is here that the Milling Stone Horizon runs headlong into traditional formulations of gender which see women responsible for most aspects of plant gathering and processing (see Lee and DeVore 1968; Hayden 1981). If, indeed, millingstones, handstones, and cobble-based processing tools are the immutable signatures of women (Bettinger 1991: 101), we are relegated to an analytical framework that acknowledges only half of a social group; settlements necessarily become female task-activity locations, while men are occupied on hunting forays or some other spatially segregating activity (see Glassow 1991a:12.79). At this point, the Milling Stone Horizon begins to collapse under the weight of its own femininity.

It contention here that the moribund state of California Milling Stone Horizon studies reflects, in part, a reliance on certain ethnographic and anthropological constructs which tend to view plant procurement and processing through the lens of female task groups. The Milling Stone Horizon stands as a unique adaptive strategy, perhaps with no good ethnographic counterpart. Explanation of its underlying structure and variability may require looking farther afield for adequate analogs, as well as challenging some of the traditional perspectives regarding gender-ascribed tool kits and work organization.

In this paper, it is argued that gender organization, particularly with respect to subsistence procurement and production, was much less circumscribed during the Milling Stone Horizon. Procurement and processing of major plant and animal staples were the domain of comparatively heterogeneous task groups, incorporating women, men, and children. In the face of mid-Holocene environmental stress, dispersed but increasing population densities, and probable absence of a sophisticated storage technology, it may be that a more demographically inclusive,

low-bulk, foraging strategy provided a reasonable solution to the challenges of food gathering. Further, the social requisites of such a strategy may have had a cognitive dimension, archaeologically identifiable through comparative funerary analyses. The paper concludes with a discussion of the role of gender-ascribed production in the evolution of hunter-gatherer societies.

THE MILLING STONE HORIZON

A variety of mid-Holocene millingstone phenomena has been reported from interior and coastal areas of southern California. Reference is made here to site components subsumed under the Milling Stone Horizon (Wallace 1955), or Encinitas Tradition (Warren 1968), and their localized manifestations: Oak Grove (D. Rogers 1929); La Jollan (M. Rogers 1929, 1945; Harding 1951); Sayles (Kowta 1969; Basgall and True 1985); and Pauma (True 1958, 1980). Further, there are indications that the Milling Stone pattern is not simply confined to southern California, but may have a much wider interregional expression, including the San Joaquin Valley (Wedel 1941; Fredrickson and Grossman 1977; Fredrickson 1986; McGuire 1993) and northern California (True et al. 1979; Fitzgerald 1991). Radiocarbon dates associated with the Milling Stone Horizon vary between 8,000 and 2,000 B.P., although most tend to cluster in the 6,000 to 4,000 B.P. range (Basgall and True 1985:3:23-25).

With regard to artifact representation, the Milling Stone Horizon has been characterized by

relatively high frequencies of milling equipment (manos and metates), core and cobble tools, and, in most instances, the common occurrence of hammerstones. Discoidals, stone balls, cogged stones, and small smoothing stones are generally considered diagnostic, though uncommon, and projectile points and other small, formalized flaked stone artifacts are rare [Basgall and True 1985:3.20].

Of note are the large numbers of core-cobble tools, especially scraper planes, associated with many Milling Stone Horizon components, which have been specifically tied to the processing of agave and/or yucca (Kowta 1969), but also may have served a more generalized role in plant processing (see Basgall and True 1985:10.12). The hammerstones have been variously interpreted as pecking stones for millingsurface rejuvenation (Treganza and Bierman 1958), and as composite tools used not only to roughen milling surfaces, but also to process plant and animal resources (see Dodd 1979:239).

The predominance of millingsurfaces and other processing equipment has led most researchers to posit a dietary reliance on seeds and other edible plant parts, and, with the exception of shellfish along the coastal littoral, a corresponding de-emphasis on animal resources, particularly large game. Along the coast, especially in the San Diego area, these same assemblages often co-occur with extensive shell middens, the diagnostic attribute of the La Jolla pattern originally defined by M. Rogers (1929, 1945). The similarity of these shared assemblage "traits" over such a wide area, coupled with certain congruencies in burial practices and nonutilitarian artifact categories, has led some researchers (see Wallace 1955, 1978) to suggest that the Milling Stone Horizon represents perhaps a shared cultural tradition, although more recent syntheses regard it as more likely a broad-based adaptation (Basgall and True 1985).

The degree to which Milling Stone Horizon assemblages represent such a fundamental departure from later components is apparent in Table 1, which summarizes major tool categories from many of the reported southern California Milling Stone Horizon sites.¹ The finely flaked bifaces and projectile points more common to later components are only minimally represented in well-documented southern California Milling Stone Horizon sites. Large processing tools (millingsurfaces, handstones,

hammerstones, scraper planes, and cobble/cobble-core tools) outnumber projectile points and bifaces by a ratio of over 27:1. At least with respect to major artifact categories, the data also reveal little differentiation between sites; with the possible exception of scraper planes, relative tool class frequencies remain reasonably consistent, irrespective of site/assemblage size.

At first glance, the sometimes overwhelming site accumulations of processing equipment and other debris seem to indicate a more sedentary land-use pattern based on large, nucleated settlements (see King 1967; Leonard 1971; Colton and Erlandson 1991:133-139). However, the homogeneous assemblage profiles, along with what appears to be a limited range of functionally specific settlement categories, argue for perhaps a much more simplified subsistence strategy possibly centered around small, mobile, foraging groups (see Warren et al. 1961; Crabtree et al. 1963; also Binford 1983:337-354). While it may be that some of the larger components reflect longer-term seasonal use (i.e., residential bases), the redundant assemblage profiles and the general lack of internal structure at many Milling Stone Horizon sites may reflect the accretional formation histories of otherwise short-term procurement/processing events (see Binford 1983:344).

The degree to which a location is reoccupied over years, decades, or centuries was therefore conditioned primarily upon the stability and productivity of proximal resource patches, as opposed to the internal organizational requisites of a logistically based settlement network. It is not surprising that many smaller, lower-density millingsurface occurrences also defy easy categorization within a traditional site framework, existing as isolated tools or extremely diffuse artifact scatters over extensive but often marginal resource tracts (True et al. 1979). Along with providing another barometer of both the intensity and low-

Table 1
MILLING STONE HORIZON SITES ASSEMBLAGE ATTRIBUTES^a

Site	Milling-stones	%	Hand-stones	%	Hammer-stones	%	Points/Bifaces	%	Cobble/Core Tools	%	Scraper Planes	%	Totals
Glen Annie (SBA-142)	33	15.1	76	34.9	45	20.6	15	6.9	35	16.1	14	6.4	218
Browne (VEN-150)	208	10.4	1,535	76.9	162	8.1	38	1.9	15	0.8	37	1.9	1,995
Rancho Park North	3	3.7	10	12.3	6	7.4	6	7.4	14	17.3	42	51.9	81
Batiquitos (Surface)	36	6.5	114	20.7	222	40.4	18	3.3	99	18.0	61	11.1	550
Batiquitos (SDI-221)	2	2.2	36	38.7	28	30.1	0	0.0	17	18.3	10	10.8	93
Batiquitos (SDI-603)	44	15.1	104	35.7	68	23.4	8	2.7	48	16.5	19	6.5	291
Scripps (SDI-525)	21	21.0	21	21.0	12	12.0	1	1.0	21	21.0	24	24.0	100
Rincon (SDI-303)	22	19.5	83	73.5	7	6.2	0	0.0	0	0.0	1	0.9	113
Rincon (SDI-505)	20	20.0	45	45.0	17	17.0	7	7.0	0	0.0	11	11.0	100
SDI-4558	15	14.2	70	66.0	8	7.5	8	7.5	0	0.0	5	4.7	106
Topanga (LAN-1)	330	4.7	2,518	35.5	1,478	20.9	98	1.4	652	9.2	2,008	28.3	7,084
Topanga (LAN-2)	36	11.0	94	28.7	78	23.8	35	10.7	18	5.5	67	20.4	328
Century Ranch	40	4.1	255	26.0	407	41.5	15	1.5	81	8.3	182	18.6	980
Encino	88	20.1	217	49.5	62	14.2	2	0.5	38	8.7	31	7.1	438
Running Springs	5	4.0	27	21.6	71	56.8	9	7.2	9	7.2	4	3.2	125
Oak Park	7	7.3	40	41.7	11	11.5	9	9.4	7	7.3	22	22.9	96
Ring Brothers	10	13.2	36	47.4	16	21.1	9	11.8	4	5.3	1	1.3	76
Little Sycamore	116	26.0	123	27.5	155	34.7	13	2.9	21	4.7	19	4.3	447
Parker Mesa	25	7.2	55	15.8	53	15.2	2	0.6	65	18.7	148	42.5	348
Zuma Creek	9	2.9	109	35.4	105	34.1	27	8.8	45	14.6	13	4.2	308
Sweetwater Mesa	174	15.2	428	37.4	330	28.9	33	2.9	45	3.9	133	11.6	1,143
Sassone (LAN-339)	80	24.3	55	16.7	105	31.9	4	1.2	0	0.0	85	25.8	329
Wilson (LAN-518)	49	30.2	60	37.0	26	16.0	4	2.5	3	1.9	20	12.3	162
Chaffey Hillside	15	16.0	31	33.0	10	10.6	1	1.1	10	10.6	27	28.7	94
Liberty Grove	162	10.7	458	30.3	687	45.4	103	6.8	56	3.7	48	3.2	1,514
Sayles (SBR-421A)	32	6.4	107	21.3	74	14.7	106	21.1	24	4.8	160	31.8	503
Sayles (SBR-421B)	1	1.6	18	28.1	11	17.2	4	6.3	4	6.3	26	40.6	64
Sayles (SBR-421C)	61	7.7	238	29.9	136	17.1	39	4.9	36	4.5	285	35.8	795
Sayles (SBR-421D)	29	7.3	126	31.6	75	18.8	52	13.0	21	5.3	96	24.1	399
Ridge (SBR-713)	35	8.5	119	29.0	71	17.3	39	9.5	21	5.1	125	30.5	410
VEN-100 (Area 1)	15	17.2	30	34.5	2	2.3	1	1.1	34	39.1	5	5.7	87
TOTAL	1,723	8.9	7,238	37.4	4,538	23.4	706	3.6	1,443	7.4	3,729	19.2	19,377
CUMULATIVE SITE AVERAGE		12.0		34.9		21.5		5.3		9.1		17.2	

^a Data compiled by Basgall and True (1985).

bulk gathering requirements associated with the Milling Stone Horizon, these loci more than

likely represent its short-term, perhaps single event, settlement aspect.

The florescence of millingstone cultures occurs at a critical juncture in California prehistory. On the one hand, there is some evidence that population levels were on an upward trend throughout the mid-Holocene (see Basgall 1987; Glassow et al. 1988; Jones 1991:435); on the other, this was clearly a period of wholesale changes in climatic and biogeographical regimes. The latter is generally reconstructed as a shift to warmer, more Mediterranean conditions, with a concomitant expansion of xeric-adapted plants. In interior areas of California, mid-Holocene warming at about 8,500 to 6,500 B.P. is accompanied by the opening up of arboreal forests, the upslope movement and expansion of oak savannas and chaparral taxa, and possibly the diminution of large mammal populations (Anderson 1990; Davis 1990; West et al. 1991); similar shifts in floristic regimes are reported from coastal mountains and basins (Heusser 1978; Adam et al. 1981; West 1993).

Notwithstanding a variety of opinion surrounding the timing, extent, intensity, and effects of these shifts on prehistoric land-use patterns (see Glassow et al. 1988; Carbone 1991), mid-Holocene environmental and demographic changes, if not causal, appear to have at least accelerated subsistence intensification directed at certain plant resources, small mammals, and shellfish. This intensification, however, must be viewed within the severe constraints of what probably remained a dispersed forager strategy, possibly lacking permanent or semi-permanent settlements, and with a minimal reliance on the use of stored resources that characterized later acorn economies of prehistoric California (see Basgall 1987:42).

GENDER-SPECIFIED PRODUCTION AND THE MILLING STONE HORIZON: A RECONSIDERATION

The fundamental association of women and plant foods is well enshrined in the anthropo-

logical literature, and a general survey of hunter-gatherers through time and space would no doubt reveal that women were, by and large, responsible for the majority of effort directed at plant food acquisition and preparation. Yet, even a casual review of California ethnographic subsistence regimes reveals a surprising measure of gender variation in work tasks associated with plant foods. In her survey of the division of labor among California Indians, Willoughby (1963:28-36) remarked on the fallacy of making rigid distinctions between the sexes with regard to plant gathering and processing. Among the 46 ethnolinguistic groups she addressed, both women and men seem to have participated in equal measure in the gathering of staples, such as pine nuts and acorns (see also White 1963:116; Farris 1983:34-37). Willoughby (1963:34) noted that while the preparation and cooking of food was mostly a female pursuit, the ethnographic record is distinguished by its many exceptions to this characterization. Simply put, it often remains an empirical question as to the gender organization of plant food production systems in any given context.

Acorns, Agave, and the Cahuilla

An ethnographic example, the Cahuilla of interior southern California, serves to illustrate this issue further. The Cahuilla are important here because they have been the focus of exhaustive ethnobotanical research (e.g., Barrows 1900; Bean and Saubel 1972), and their staple plant resources included both acorns and agave—the latter identified as a possible key resource of southern California Milling Stone Horizon cultures (Kowta 1969).

The Cahuilla acorn regime described by Bean and Saubel (1972:120-131) is similar to that described by Jackson (1991) for the Western Mono. Although the actual gathering of acorns appears to have been demographically inclusive, with women, men, and children participating in the short fall harvest, women

“owned” portable and bedrock mortars, and possessed their own gathering and processing equipment (e.g., carrying, sifting, and leaching baskets, spoons, handbrooms). “The significance attached to ownership of mortars was such that after a woman died her mortar was broken and buried upside down” (Bean and Saubel 1972:128). Women appear to have been exclusively involved in the processing of acorns to the extent that “. . . the skill, sophistication, and care exhibited by a woman in grinding, leaching, preparing, and cooking acorn served to enhance her status” (Bean and Saubel 1972: 129). In essence, the gender tie to acorn processing was so complete as to take on both a social and a cognitive dimension.

Agave (*Agave desertii*) possessed much the same dietary importance for the Cahuilla as acorns. Indeed, because it can be harvested in early winter and is amenable to long-term storage, it may have been even more critical during resource-poor intervals. But it is here that agave exploitation departs from acorns with respect to gender organization: virtually all aspects of agave gathering and processing were masculine activities (Bean and Saubel 1972:31-36). Men and young boys would travel in groups to gathering areas to harvest the flowers, leaves, and stalks. In one day, such a group could harvest several hundred pounds of stalks, the preferred plant part. Stalks and leaves were roasted in a rock and grass-lined pit for up to three days.

As women were judged by the skill with which they prepared foods, so were the men who prepared agave for roasting. The care which they took in cleaning and roasting agave was a matter of community concern and a means by which a man could be compared with other men. Thus, it was essential that young boys learn the correct techniques for agave preparation as soon in life as possible [Bean and Saubel 1972:34].

The Cahuilla ethnographic example serves to underscore the range and complexity of

gender organization with regard to the procurement and processing of plant staples. Gender-specified production appears to exist along a continuum: it is expressed as the domain of men and boys with respect to agave; during the critical but short acorn harvest, the traditional divisions based on sex and age break down into demographically diverse gathering groups; and finally it is manifested as an exclusively female activity with respect to acorn processing. The Cahuilla are certainly not unique with regard to the masculine orientation associated with certain fibrous plant preparations in California (see Willoughby [1963:34] for a discussion of Yana, Michahai, and Waksachi root/stalk processing). It follows, therefore, that men need not be factored a priori out of the plant business, or consigned to its specialized margins (e.g., medicines, ritual paraphernalia). In certain instances, men comprised an integral aspect of the gathering and processing systems associated with plant staples.

Ethnographic information with regard to specific tool kits and facilities associated with agave procurement is less forthcoming, although the large number of cobble-core tools, scraper planes, and rock concentrations associated with Milling Stone Horizon sites has been tied to vegetal processing, including that of agave and yucca (Hester and Heizer 1972; Salls 1983, 1985; Basgall and True 1985). Based on his ethnographic review, Kowta (1969:54-55) went further, identifying an agave/yucca “tool kit” incorporating not only cobble-core tools, such as scraper planes to extract fiber, but also millstones and handstones to crush and grind leaves, as well as in the preparation of cakes (also see Castetter et al. 1938; M. Rogers 1939:50-51; Aschmann 1967).

Taken together, these data suggest: (1) that there is no necessary reason to exclude men from the gathering and processing of the large, fibrous plant staples that have been postulated as dietary staples during the Milling Stone Horizon

(see also Erlandson 1991:99), and (2) that many of the cobble-based processing implements recovered from Milling Stone Horizon sites may have been associated with this type of procurement activity. Cobble-based processing implements (cobble-core tools, scraper planes, and perhaps hammerstones) comprise upwards of 50% of all implements recovered from Milling Stone Horizon components (Table 1). Further, descriptions of Cahuilla males pit-roasting certain vegetal staples suggest that the huge amounts of fire-affected and other rock debris often associated with Milling Stone Horizon components may also reflect more gender-balanced processing activities. At this point, the gender profiles represented in these assemblages begin to assume a more consistent symmetry.

Shellfish

From the outset, the coastal manifestation of the Milling Stone Horizon has been associated with shellfish exploitation, so much so that M. Rogers' (1929:456-457) original appellation was the "Shell Midden" people. Later incorporated by M. Rogers (1945) into his "La Jollan" pattern for the San Diego area, the co-association of various millingstone phenomena and extensive accumulations of shell has been documented throughout the southern and central coasts of California, including the Channel Islands (see Basgall and True 1985:3:47; Erlandson 1988a, 1991:89-100; Glassow et al. 1988:67). At the same time, there is also considerable variation in the representation of shellfish in mid-Holocene coastal components. Aside from uneven reporting standards, much of this variation appears to be geographic: estuaries, islands, and semi-protected, rocky shores afford more productive and easily exploitable shellfish habitats, while beaches and exposed, open coastlines are perhaps less desirable (see Glassow et al. 1988; Jones 1991).

Other disjunctions in the archaeological representation of shellfish may have a more

direct environmental genesis attributable, for example, to the effects of sea-level rise or siltation on coastal estuaries (Warren 1968; Bickel 1978; Erlandson 1985), or to the availability of alternative terrestrial resources (Hildebrandt and Levulett n.d.). Despite this variation, and notwithstanding the potential significance of estuarine and intertidal resources with regard to the initial human occupation of California (Jones 1991), shellfish exploitation appears to have assumed a more substantive role in coastal land-use strategies during the mid-Holocene. This shift is interpreted as another manifestation of subsistence intensification and increased diet breadth by forager groups in response to environmental change and/or increasing population pressure.

The significance of gender vis-à-vis shellfish collecting has been summarized by Claassen (1991), among others, and further developed with regard to early California coastal populations by Jones (1991, 1993). Jones (1991) viewed shellfish collecting, which can be conducted at most times of the year, as the domain of mothers, children, the elderly, or other "range-limited" members of a foraging group (see Jochim 1988). In this sense, they complement their range-unlimited counterparts (male hunters), together providing an optimal diet of both near and distant food resources (Jones 1991:435). Claassen (1991) also posited the primacy of women as shellfish collectors, but acknowledged as an empirical question the extent to which men participated in such activities.

To the degree that both Jones and Claassen made the point that procurement of significant amounts of animal protein was not the exclusive domain of male hunters, but also included demographically diverse groups (including women, children, and the elderly) of shellfish collectors, this is reasonably consistent with the authors' view of a generally less circumscribed gender work organization during the Milling

Stone Horizon. As was noted earlier in this paper, however, the notion that men were simply "out hunting" large game is not supported from either an assemblage- or a settlement-based evaluation of Milling Stone Horizon components. The authors would go one step further and include men in the shellfish equation (see also Jones 1992:22). There is, after all, no dispute that from an ethnographic standpoint men engaged in shellfish collecting (Waselkov 1987; Claassen 1991:286-287); the formidable constraints of a forager-based Milling Stone Horizon lifeway may have required such a solution as well.

Terrestrial Fauna

It is herein proposed that many of the underlying arguments supporting an increased reliance on shellfish exploitation during the Milling Stone Horizon are equally applicable to certain classes of terrestrial animals. Reference is made here to a variety of lagomorphs, rodents, and other small animals with very circumscribed foraging ranges, but occurring in virtually every localized habitat in California. Depending on species, seasonal availability, and other scheduling parameters, such animals have probably always comprised a relatively significant aspect of aboriginal diet in California (see Grayson 1991).

Two issues are noteworthy with regard to the gender organization of small animal exploitation. First, small animals were potentially available for harvest within the proximal confines of most settlement contexts, and thus within the areal constraints imposed upon even range-limited members of social groups. Second, highly specialized hunting technologies (i.e., those featuring hafted, bifacially shaped projectiles) were not a prerequisite for this type of procurement. At its most fundamental level, small animal procurement is opportunistic, as simple as running down a lizard or rodent, becoming only slightly more elaborate with the

use of nets, deadfalls, traps, and other passive techniques. Several California ethnographic accounts indicate that opportunistic and passive hunting on this level are oftentimes the domain of any capable member of a social group (Kroeber 1925:525; Bean and Shippek 1978:555). Even more sophisticated procedures, such as jackrabbit drives, often involved demographically inclusive groups of men, women, and children (Du Bois 1935:13; Steward 1938; Fowler 1986). All of this, of course, is distinguished from what has come to be recognized as the logistically based and gender-specific hunting regimes associated with large mammal procurement in ethnographic California. Often territorially extensive, hunting of this kind was the exclusive domain of men, employing specialized tool kits.

If these gender profiles for the exploitation of terrestrial fauna are correct, a relatively greater emphasis on small game during the Milling Stone Horizon would be anticipated, giving way to an increased use of large game resources later in time. While issues surrounding site structure, bone preservation, and recovery standards have limited the use of faunal data in the reconstruction of Milling Stone Horizon lifeways, there is widespread evidence that large mammals may have been less important during the mid-Holocene in many parts of California. Based on their recent review of millingstone assemblages in northern San Diego County (Pauma Complex), True et al. (1991:48) noted that "animal resources during Pauma Complex time consisted almost entirely of the smaller species and that, *in a relative sense* [original emphasis], taking of deer did not become important until San Luis Rey times [late period]."

Other recent excavations of early to mid-Holocene components in San Diego County also reveal substantial accumulations of jackrabbits and cottontails, and only small amounts of deer and other large mammal remains (Gallegos

1991; Koerper et al. 1991). Early components in Santa Barbara County are also dominated by lagomorphs (Erlandson 1988b; Glassow 1991b), while later assemblages remain essentially the same (Glassow 1992), or show an increase in the relative abundance of large game (Woodman et al. 1991). In Fresno County, McGuire (1993) reported a near-equal distribution of large and small mammal remains from a millingstone component dating from 6,000 to 2,500 B.P., followed by a five-fold increase in the relative frequency of large mammal bone later in time (Fig. 1). Two large, multi-site studies conducted in Santa Clara County (Hildebrandt 1983; Hildebrandt and Mikkelsen 1993) show a similar trend (Fig. 2): early components are dominated by small mammals (rabbits), while large mammals (deer and elk) become more important later in time. Finally, an increase in deer relative to rabbits is also documented by an 8,200 to 3,200 B.P. sequence recently reported from the Duncans Point site in Sonoma County (Schwaderer 1992).

This early focus on small game resources is not wholly unexpected, given the relative lack of formal hunting gear represented at most Milling Stone Horizon sites. Nevertheless, the larger implications of this pattern have gone mostly unrecognized, perhaps because it has been assumed that prehistoric California evolved intrinsically out of a terminal Pleistocene and early Holocene hunting focus, represented by elaborate flaked stone technologies. Rather than taking a simple optimal diet perspective, where the relative importance of small game is expected to increase in a unilinear fashion through time, it should be noted that cross-cultural analyses of hunter-gatherer subsistence-settlement organization clearly document strong correlations between logistical mobility and a reliance on large game hunting (Binford 1983; Kelly 1983). It follows, therefore, that the organizational constraints associated with small, demographically inclusive, foraging groups pro-

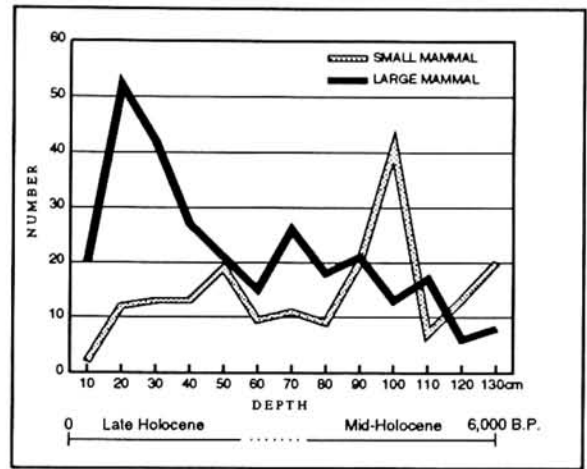


Fig. 1. CA-FRE-61 faunal profile by depth (McGuire 1993).

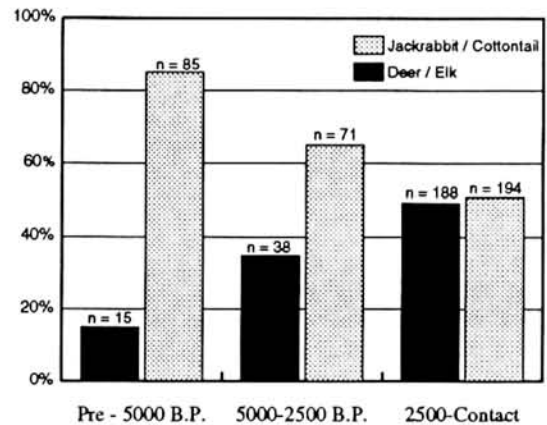


Fig. 2. Faunal profiles by component from seven sites located in southern Santa Clara Valley (after Hildebrandt 1983; Hildebrandt and Mikkelsen 1993).

bably limited large mammal hunting by Milling Stone Horizon populations, and that later, logistically organized, gender-specified adaptations were more conducive to large game procurement (see also Delacorte et al. MS:319). This is not to say that early foraging populations were incapable of forming ad hoc hunting parties to procure large game, but it is critical to distinguish between hunting on an encounter basis within a land-use system geared toward the acquisition of plant resources, and the formation

of logistically organized groups that could travel great distances to obtain game from areas not previously part of the subsistence-settlement range (e.g., remote mountainous areas several days' journey from core residential areas).

Burial Associations

While the focus thus far has been on the economic sphere, gender is fundamentally a cognitive construct based on biological reality. The conceptual world of women and men, to the extent that it is approachable with archaeological data from prehistoric California, is most directly manifested in mortuary patterns. The focus here is on the differential distribution of certain categories of grave goods according to sex. As Binford (1971:20) noted, sex is the most common variable from which symbolic distinctions in mortuary practices are made, particularly among hunter-gatherers. The thesis presented here is a simple one: as cultural systems become more gender-specified, so should the cognitive referents contained in their burial associations.

Analyses of prehistoric California mortuary practices incorporating gender perspectives have been the subject of several recent investigations, particularly in the Santa Barbara Channel area (Hollimon 1990; see also L. King 1982; Martz 1984). For the most part, these studies have focused on a welter of gender-imbued artifact categories—some more substantiated than others—drawn from local ethnographic accounts. The concern here, however, is more specifically directed at the symbolic content surrounding major aspects of work organization. As such, the focus is on artifact categories with a direct relation to subsistence, and which arguably possess the most unambiguous gender affiliation. Because they are also relatively common to California burial contexts, the most appropriate artifacts for this analysis are projectile points and bifaces (male), and milling equipment (female).

The data sample is drawn from most of the known southern California Milling Stone Horizon burials with associated milling equipment or projectile points/bifaces, represented by 44 interments from seven sites (West MS, 1979; Treganza and Malamud 1950; Treganza and Bierman 1958; Moriarty et al. 1959; Owen et al. 1964; King et al. 1968; Greenwood 1969), and by 104 late Holocene (post-2,500 B.P.) burials recovered from Trancas Canyon (Thomas and Beaton 1968), Medea Creek (L. King 1982), CA-VEN-110 (Raab MS), and Santa Cruz Island (Hollimon 1990) along the southern California coast.² The late Holocene sample was selected because it is from the same general environmental context as the earlier burials, and because it is supported by well-documented burial data.

A review of Figure 3 reveals that, at least with respect to the distributions of projectile points/bifaces and milling equipment, there is little differentiation during the Milling Stone Horizon: burials, regardless of gender, are overwhelmingly represented (93.6%) by milling equipment (see also Hollimon 1990:204). The sample of Milling Stone Horizon burials identified as to gender is limited to eight individuals, six males and two females; all are associated with milling equipment, none with projectile points/bifaces. By the late Holocene, this pattern has changed dramatically, with near-equal representation of burials that contain milling equipment and those that manifest projectile points/bifaces. The reasons for this distribution become apparent in Figure 4: those burials identified as male contain mostly projectile points/bifaces, whereas female burials are primarily represented by milling equipment.

The cognitive framework drawn from the Milling Stone Horizon burial data parallels the economic issues previously raised. What is demonstrated is a relatively undifferentiated world of plant gatherers and processors, where a gender-specified identification with bifacially

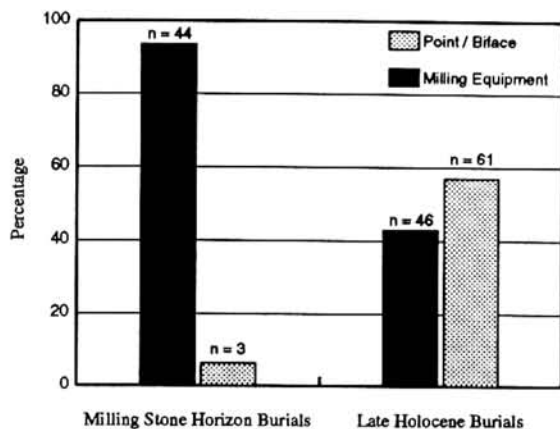


Fig. 3. Milling Stone Horizon and late Holocene burials from southern California with milling equipment or projectile points/bifaces.

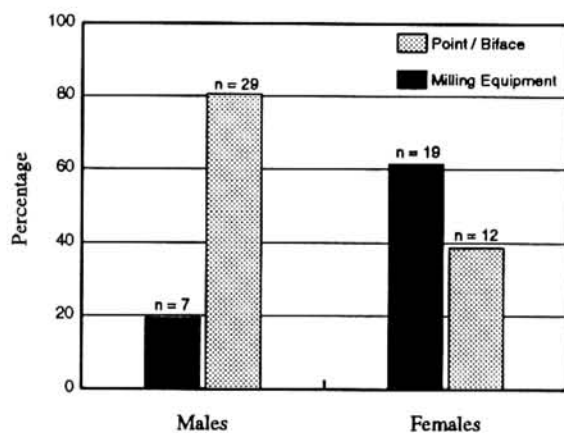


Fig. 4. Associations of milling equipment and projectile point/bifaces by gender from late Holocene burials from southern California.

flaked hunting equipment on the one hand, and millingstones and handstones on the other, has yet to be symbolically articulated. By the late Holocene, all of this has changed—the cognitive, technological, and economic realms associated with the hunt have emerged in a more active, masculine guise, whereas femininity remains primarily expressed in plant food collecting and preparation. The pattern, however, is not completely dichotomous; a small but significant percentage of both late Holocene

male and female burials contains referents of the opposite gender. While acknowledging the importance of sex with regard to the symbolic content of certain utilitarian classes of grave goods, the nonrandom distribution of burial artifacts can also result from a host of other factors (e.g., position, wealth, ritual status, craft specialization) not directly tied to work organization (see Martz 1984; Hollimon 1990).

DISCUSSION

We have attempted to identify the gender organization of a series of subsistence systems associated with the California Milling Stone Horizon. In assessing how certain plants may have been gathered and processed, shellfish collected, and terrestrial animal resources procured, a consistent pattern of relatively undifferentiated gender roles can be seen. Both men and women appear to have routinely engaged in these activities, perhaps not always together or equally, but probably without the proscriptions and prohibitions apparent in later California cultures. This lack of polarity apparently had a social and ideological dimension, manifested in the absence of explicit gender referents in burial associations. The Milling Stone Horizon represents a difference of kind, rather than degree, in relation to later-dating California cultures—territorial circumscription, sociopolitical differentiation, and the rise of gender-based food production, such as that described for logistically based acorn procurement and large mammal hunting, had yet to be elaborated. This difference in kind may have led to the epistemological failure of ethnographic analogy—particularly that relying on descriptions of post-contact, California aboriginal groups—to provide adequate models not only of Milling Stone Horizon lifeways, but also of the range of possibilities inherent in gender organization.

If we have learned anything with regard to the emerging feminist critique of modern ar-

chaeology, it is perhaps the danger in viewing gender relationships as static, or at least limited in range to what can be gleaned from the ethnographic record or perceived through personal experience:

[By] uncritically accepting women and gender roles from -- or as reported for -- modern or recent societies as models for women and gender in past societies, do we not risk collapsing or homogenizing the very variability that we find so compelling in gender studies? [Conkey and Gero 1991:17].

This is all the more significant when confronting in the Milling Stone Horizon what amounts to an adaptive dead-end. It is, on the other hand, not without some irony that certain feminist scholars embrace this stasis so long as it incorporates the preeminence of women in the gathering and processing of plant staples (see Watson and Kennedy 1991). At least with respect to the California Milling Stone Horizon, there are sound reasons to reject the exclusivity of women in gathering and processing. This is not to remove women from the realm of food gathering and production, but simply to suggest that such activities may also have been, from both a social and dietary perspective, an important domain of men.

But this is not just an exercise in finding the lost men of the Milling Stone Horizon; gender is a set of processes and relations embedded within a wider adaptive context (see Moore 1991:417) that includes mobility strategy, settlement-subsistence structure, exchange, and a host of other, perhaps more recognizable, issues to students of California prehistory. An analysis of gender and production is of potential utility in modelling mid-Holocene mobility patterns and population dynamics in California when it is coupled with other constructs developed for forager populations. For example, Binford (1983:339) noted:

when minimal forager groups (5-10 persons) are dispersed, there is frequently a collapse of the

division of labor, and foraging parties will be made up of both male and female members involved in procuring largely identical resources.

In addition to providing a corroborating theoretical framework for the profile of Milling Stone Horizon lifeways and gender roles presented in this paper, Binford's analysis allows for an initial formulation of possible group size, as well as providing a rough basis for deriving relative population density. In turn, with an estimation of group size and gender structure, we may be in a better position to assess the opportunities and constraints afforded by various settlement options and subsistence choices. We have previously reviewed how such constraints might have affected large game procurement during the mid-Holocene, and its corollary, that the rise of logistically organized hunting parties may have led to expansion of settlement-subsistence systems into hitherto unoccupied regions. Other issues also come to mind; for example, under what conditions might small, demographically inclusive (all age and sex grades), foraging groups coalesce to occupy larger settlements on a more regular basis, and how might the development of efficient storage technologies affect this ability? Can trans-regional exchange networks be supported by such populations, and how would they be organized? How might toolstone be procured, used, and discarded? Ultimately, as Moore (1991) indicated, the real value in acknowledging the pivotal role of gender relations is that it allows us to ask many new questions.

Finally, having inferred the position of gender among Milling Stone Horizon peoples, we could also ask how it might have been expressed along a sociopolitical dimension. In her analysis of the evolutionary implications of gender hierarchy, particularly as it is manifested in political economy, Gailey (1987:51) noted that women's status and authority are generally *highest* where economic and political stratification are the least developed. Although Gailey's

concern is primarily with the transition from kin-based societies to those stratified by class, she does make the point that the most amicable and egalitarian gender relations are to be found among the simplest kin-communal societies of hunter-gatherers. Other kin-based societies, such as those typifying much of ethnographic California, were stratified along a variety of formal and informal leadership positions, many based on heredity (see Kroeber 1925); higher-ranking individuals often had claims to some of the labor or products of their lower-ranking kin. Gailey (1987:50) described gender-specified political relations in these more stratified societies as ambivalent. If Gailey is correct, the simple forager-based economies of the Milling Stone Horizon may have allowed for a more encompassing role for women with respect to socio-political control than afforded at any time since.

NOTES

1. The data displayed in Table 1 were originally drawn together by Basgall and True (1985). To the extent possible, they standardized artifact typologies, reworked certain categories of information, and reassessed spatiotemporal interpretations, all as a means to facilitate inter-site comparisons of southern Milling Stone Horizon sites. To our knowledge, this is the only published attempt to systematically address interregional assemblage variation in Milling Stone Horizon components in a quantitative fashion. Basgall and True (1985:3.22) acknowledged that their compilation is selective, and there may be some potentially important omissions (e.g., the Aerophysics site [SBA-53; Harrison and Harrison 1966]). They do, however, argue—and we would concur—that the 30 site components and over 19,000 artifacts presented in Table 1 characterize a substantial measure of the salient variation represented in reported southern California Milling Stone Horizon assemblages.

2. The King (1982) data include sex determinations that are considered probable. Raab (MS) and Hollimon (1990) noted several burials with "inflicted" projectile points; these are not included in Figures 3 and 4. At six burials (three Milling Stone Horizon and three late Holocene), both milling equipment and projectile points/bifaces occur in the same interment; these are treated as positive occurrences in both figures.

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