

MARPOLE AND ITS IMPORTANCE IN THE DEVELOPMENT OF THE NORTHWEST COAST PATTERN WITHIN THE GULF OF GEORGIA

Interpretations of the Marpole culture type have focused thus far on a totally synchronic perspective. In only a few cases have I approached the developmental problems associated with individual cultural traits. Moreover, the position of Marpole in the evolution of the Gulf of Georgia variant of Northwest Coast culture, beyond a strict culture historical framework, has yet to be addressed. This final section, therefore, brings together many of the disjointed discussions of previous chapters into a, hopefully, coherent structural model. For the most part, it is a theoretical dissertation on the cultural origins of Marpole. Since preceding arguments have suggested a close analogy between Marpole and Coast Salish cultures, it also reflects upon the evolution of the ethnographic pattern.

In a general sense, few researchers would argue against a thesis that the exploitation of salmon stocks is intricately tied into the development of complex societies on the Northwest Coast. The surplus potential of this resource allowed for cultural characteristics normally associated with chiefdoms to develop and take root in a strict hunting and gathering economic sphere. Included within this list would be ascribed principles of social stratification, semi-sedentary villages, relatively large population aggregates and part time specialization (see Fladmark 1975 for an elaboration).

Whereas the importance of salmon reserves is a given, the processes by which the associated cultural developments arose are currently under scrutiny. The issue to be addressed is that of a transition from a generalized hunting and gathering subsistence strategy to a specialized format heavily dependent upon the production and preservation of a surplus in the salmon resource. The former pattern incorporates a highly mobile settlement pattern strategy attuned to the interception and exploitation of individual resources during climax points in their yearly cycle. While some food resources may contribute to the economic base more than others, no single factor dominates resource scheduling. On the other hand, the specialized hunter and gatherer needs to expend greater effort and time in the procurement of one single resource, hence interrupting the possible utilization of others. In turn, this would lead to semisedentism and population aggregation for cooperative efforts.

Salmon surpluses are meaningless without the techno-

logical capabilities to store away winter food supplies. Obviously, there could not be a transition from generalized to specialized pursuits without the presence of a preservation and storage technology. Whether this technology has prevailed on the coast from time immemorial is a point of controversy for present day theoreticians. On the one hand, it is argued that immediately following the attainment of climax productivity in the salmon resource, indigenous cultures automatically made the shift with "little or no adjustment" in exploitative technology (Fladmark 1975: 296; also Langdon 1976). On the other, it has been suggested that the mere presence of the resource in a climax state is not the important variable; it is the incentive for gathering larger amounts and the necessary development of a preservational technology (Schalk 1977: 235-237). Storage strategies are not viewed as simple techniques automatically associated with all post Pleistocene technological inventories.

Turning to more specific terms of reference, we are able to frame the major differences between the Locarno Beach and Marpole culture types in the perspective of generalized versus specialized hunting and gathering systems. Such a model is not without precedent in the Gulf of Georgia region. Matson, in this manner (1976e: 299-305), chose to view pre-Marpole and Marpole components at the Glenrose Cannery site to facilitate his adaptation and cultural reconstructions. A similar construct has been employed in an interpretation of the early component (Marpole I) at the Marpole site (Burley 1979b).

While it is redundant to reiterate the cultural traits present in the Marpole culture type which qualify it as a specialized pattern, some clarification of the Locarno Beach case is necessary. Despite the fact that much less data are available on the Locarno Beach period than for Marpole, several lines of evidence suggest a more frequently mobile hunting and gathering strategy with salmon procurement of less import than in later culture types. Of its known site distribution alone, Mitchell (1971: 57-58) concludes that "the locations of sites so far attributable to this type, do not, at present, suggest the populations had direct access to the Fraser River salmon runs in the river itself, although some sites are located along the saltwater approaches from the south." Borden (1968a, 1970) also points this out by suggesting that Locarno Beach peoples

may have been more "maritime oriented" with greater emphasis on sea mammal hunting than their historic counterparts. Concomitantly, Borden (1968: 18) advocates a Gulf Islands focal point for Locarno Beach with but seasonal movements to the Fraser River mouth.

The full documentation of a generalized economic base in Locarno Beach must await a larger data pool and controlled faunal analyses. Unfortunately, the presence/absence faunal trait lists provided in presently analyzed Locarno Beach components (Haggarty and Sendey 1976; McMurdo 1974; Mitchell 1971) do not allow a quantified comparison of food resources. The gross pattern, however, seems to be one of increasing emphasis on fishing through time with exploitation of other faunal resources becoming less important (Boucher 1976; Boehm 1973). This difference in subsistence exploits between preMarpole and Marpole populations may be reflected in a study of local skeletal populations by Beattie (1978, personal communication). Specifically, he has identified a sudden rise in the occurrence of an anemic condition in adult individuals of the latter sample. This trait, *cribra orbitalia*, tends to be associated with dietary deficiencies (Cybulski 1977b) and might be explained by a more intensive exploitation of fewer resources in a specialized hunting and gathering context.

The preceding discussion does not mean to denigrate the role of salmon in the subsistence exploits of Locarno Beach peoples. Undoubtedly this resource was an integral part of their adaptive strategy (for example, see Matson 1976e) and motivated seasonal movements for its procurement. Rather, it simply suggests that *intensive* specialization had not yet occurred in the face of climax productivity. This would be contrary to the arguments for specialization as the inevitable consequence of putative surpluses. Therefore, we must turn to some other factor which provided the stimulant for a transition.

Schalk (1977) has suggested that the alternative explanation lies in the expansion of a preservational technology. Applying this to the Gulf of Georgia region, I would suggest that, although the potential for storage may have been present during the Locarno Beach culture type, it had yet to be fully developed. The improvements in post Locarno Beach times seem to be documented through an introduction of the thin ground slate fish knife. Slate knives are known to be important historically for the scoring of fillets in the wind drying of salmon (Stewart 1977: 138). They provide a lengthy and consistent cutting edge and are easily curated. The curation aspect is all important when looking at the possibilities for functionally analogous implements based on chipped stone and possibly shell (see for example Hayden 1978: 31). Furthermore, ground slate knives are probably not the stimulating causal agent, but only a signal for the full development of the ethnographically recorded drying technique which is condu-

cive to massive processing. It does, nevertheless, seem consequential that ground slate knives and intensive specialization co-occur.

With the ability to preserve surplus stocks of salmon, it is argued that the basis for other major cultural traits was laid. In part utilizing the developmental models proposed by Schalk (1977) and Langdon (1976), a theoretical framework may be proposed. Figure 14 illustrates this evolution.

- 1) The technological requirements of catching and storing surplus stocks of salmon at the mouth of the Fraser River in particular and throughout the Gulf of Georgia in general require cooperative efforts. The system is self supporting in that prepared reserves allow for greater population aggregation and a semisedentary settlement pattern.
- 2) Manifest in a cooperative effort would be greater complexity of labour organization and the origins of a centralized head (Schalk 1977: 237). This leader could serve several group functions including regulation of labour expenditure, control over resource locales and redistribution of productivity. Of the latter, we might predict the act itself to be the immediate progenitor of the historic potlatch.
- 3) The most obvious unit of production and cooperation would be the extended family. Thus, it may be possible to postulate a shift in social organization from a nuclear family based socio-economic unit to that dependent upon ties in the male line. These ties are reinforced by the formalization of inheritance principles whereby males receive the majority of corporeal property. Inheritance rules insure the ordered transference of resource procurement locales and technology (see Langdon 1976: 26; Collier 1975: 50).
- 4) With an enlargement of the corporate group and patrilineal residence patterns, given the technology for production, large scale multifamilied plank houses would be a simple step.
- 5) When preserved surpluses escalate beyond that necessary to maintain subsistence needs, we should expect a more widespread trading pattern in non-utilitarian or primitive wealth items. The procurement of these materials by the group leader would tend to enhance his position *vis à vis* other members. In essence, they provide the visual basis for social differentiation and stratification (see Dalton 1975; Pires-Ferreira and Flannery 1976).
- 6) A secondary effect of surplus beyond subsistence needs would be the possibilities for craft specialization. Excess subsistence commodities would now be turned into wealth objects and, hence, select for the best goods produced by the most skilled individuals. Subsequently, a concentration and perfection of efforts by those individuals, to the detriment of generalized subsistence activities, may have occurred. Thus, the proliferation of an

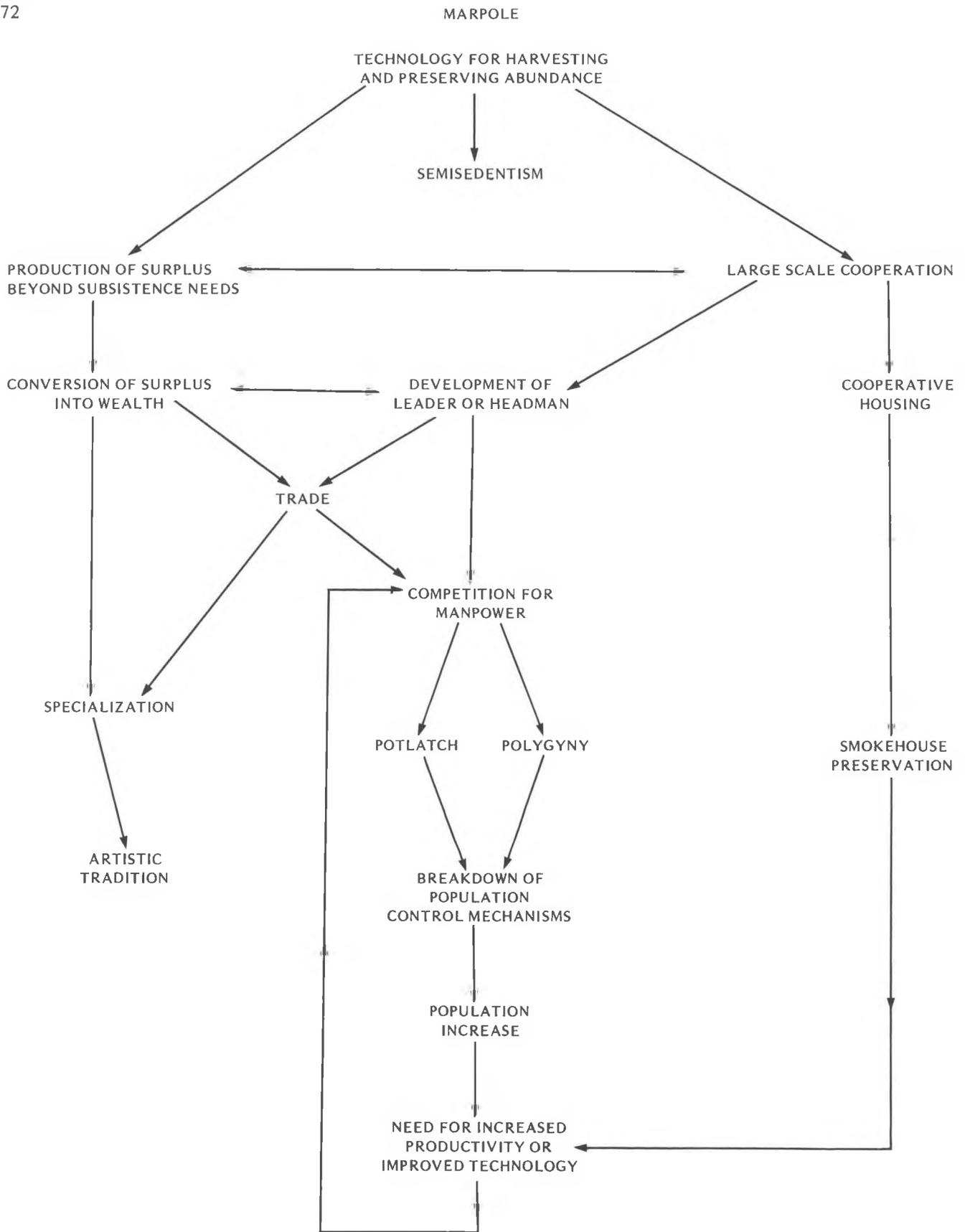


Figure 14. Schematic Illustration for the Development of a Gulf of Georgia Variant of the Northwest Coast Cultural Pattern.

artistic tradition in Marpole may be a direct consequence. It is an interesting parallel that both McGhee (1975) and Wolfe (1969) find a correlation between art production and tendency toward sedentism; the latter a development argued for in the present model.

- 7) Increasing social stratification and increasing potential for wealth would serve as a stimulant for the production of a greater surplus.
- 8) The incentives for greater production may affect technological innovations (Schalk 1977: 235). Although undocumented, the development of the reef-net from drag-netting (Kew 1976) could eventually be tied to this interval. Additionally, improvements in preservational technology may have been instigated. As Suttles (1951: 260) has suggested, there may well be a historical link between the smoke house and multifamilied plank dwellings. Smoking preservation in itself is a revolutionary introduction in that weather exigencies could now be negated.
- 9) A second means by which surplus production could be increased is to enlarge the corporate group size. Polygynous marriage practices are able to accomplish such an expansion without threatening the kinship basis of the productive unit. It is noteworthy that control of wealth by males selects for this trait (Murdock 1949). The possibilities for outside labour as a means of expansion also cannot be ruled out. The recognition of bilateral kin has been argued by Langdon (1976: 27) as one way of ensuring adequate workers. Possibly a more formalized development of the potlatch served as the means of competition both for an expanded labour force and marriage exchange.
- 10) At some point in this evolutionary process, we might expect a general population increase as Grabert and Larsen (1975) have anticipated. Any number of factors in combination could potentially be responsible. Lee (1968) has suggested that reduced mobility allows for females in hunting and gathering societies to decrease the period of time between births. Possibly a more predictable resource base may have cut down on the rate of infant and child mortality than previously was the case (note it is not a more nutritional diet). Finally, given the incentive to have a larger group size, there may have been some breakdown in cultural population controls such as sexual abstinence for long periods after birth, lengthy periods of lactation, infanticide and the like (see Hayden 1972).
- 11) Finally, this pattern is expected to have spiralled upon itself until some equilibrium point is accomplished. This may have come about either by the attainment of a maximal ratio of group size to production or population pressure on the primary resource locales. It is at this stage whereby splintering into less productive zones would occur. It may also document the end of the Marpole culture type.

The preceding model, while suggesting how things came about, does little to answer the question why. If one accepts a continuity model and views the differences between Locarno Beach and Marpole as analogous to those of generalized versus specialized hunting and gathering patterns, then it becomes mandatory to account for the sudden transition. To date, the only formalized hypothesis for Locarno Beach to Marpole culture change is Mitchell's (1971) "environmental pressure" model. As I have earlier reported, he suggests that the shift from a warm hypsithermal environment to the cooler and moister post glacial meant a lessening of the subsistence base, forcing a greater reliance on salmon stocks. Primary resources which were affected include oak and camas "crops" with a lesser amount of influence on the deer and wapiti populations. The data, however, do not support this hypothesis. If, in fact, there was a hypsithermal, and Mathewes (1973) argues there was not, its terminus would predate the origins of Marpole by some 600 years (Heusser 1960). Moreover, to produce such seemingly instantaneous culture change, the transition must have been both sudden and catastrophic. This does not seem to be the case.

One cannot rule out the possibilities of some basic single element or complex of traits diffusing into the region which, in turn, set the transitional wheels in motion. Schalk (1977: 235) has suggested that the motivation for and implementation of a storage technology probably occurred in areas where salmon runs would be of short but intense duration, such as the northern latitudes. We might expect, therefore, a parallel development outside of the Gulf of Georgia prior to Marpole which may have had a significant impact (see Langdon 1976 for a discussion of the Nootkan case). However, the possible effects upon local populations are yet to be measured. In addition, diffusion is not a rationale but a historical record. The acceptance of a specific trait or complex must be explained in a local context.

Because there is difficulty linking Locarno Beach to Marpole in a theoretical developmental scheme, the possibilities for population displacement must again be considered. In fact, earlier suggestions by Borden (1968a) that Marpole could have originated on the periphery of the Gulf of Georgia region at the entrance to the Fraser Canyon has merit. For instance, thin slate knives and, presumably, the techniques of wind drying salmon may have been present in that locale as early as the Eayem phase (*circa* 3,500 – 1,500 B.C.) and most definitely are associated with Baldwin (*circa* 1,000 – 350 B.C.) (Borden 1968a: 14–15). Concomitantly, Borden (1968: 14) has argued that a "cultural efflorescence" was attained in Baldwin which had no counterpart in the Gulf of Georgia until Marpole times. Including *extensive* personal ornamentation (disc beads, labrets, ear spools, pendants) and a *proliferated* artistic tradition in sculpture, we might infer at least the beginnings

of social stratification and part time specialization. In essence, it could be suggested that a transition from a generalized hunting and gathering pattern to the more specialized mode occurred earlier and may be documented over a longer period of time at the terminus of the Fraser Canyon, the Hope/Yale locality.

There are a number of possible explanations why such a configuration may have been selected for in an upriver setting. First, and probably most important, is the fact that procurement of surplus salmon stocks is most easily carried out in the Fraser Canyon. Given climax productivity of salmon by 3,000 B.C., we could anticipate local populations to be confronted with massive migratory runs funnelling into the Canyon gorge. These runs could be tapped with a simple technology including the dip net, traps and/or weirs. The former has been suggested as an evolutionary prototype for all later netting equipment (Kew 1976).

Not only would procurement be easier, there are other factors selecting for specialization. A less diverse resource base than was the case for coastal populations would favour the utilization of a storage technology for canyon groups. In fact, we might expect an existent semisedentary population by virtue of restricted winter mobility due to more abundant snowfall (see Mitchell 1971: 10). Winter supplies of salmon would therefore provide a stronger basis for a previously established subsistence pattern. With this in mind, it might now be possible to argue that the mechanisms by which a full storage technology was introduced (independent development, diffusion, etc.) are unimportant although the chances seem good that it was an independent development. The key explanatory variable is the fact that storage and associated lifeways would be readily accepted.

Equally important in the evolution of the Northwest Coast pattern which, again, is seen early in the Fraser Canyon, is the possibility for trade and the transference of surpluses into wealth. Groups in the vicinity of Hope/

Yale had virtual control over movements of commodities out of the Fraser Canyon. Primarily included here are such raw materials as nephrite and soapstone with other possibilities being obsidian and several interior derived exotic cryptocrystalline lithics. If future research extends the Canyon sequence even slightly downriver, then a southern trade route via the Nooksack may also have existed.

The present discussion is not meant to suggest that the full development of Marpole originated in the Canyon. Since production of surplus salmon stocks on the coast required greater cooperation, there may have been an amplification of the evolutionary trend already described. Plank houses are assumed to be totally coastal structures while smoking, as part of the preservational technology, could also be late. In fact, given an analogous climatic pattern to the present context, it might be argued that specialization in the Gulf of Georgia region could not be maintained without the development of the latter trait. That is, if one must depend upon coastal weather conditions as part of the processes for storage, then unpredictability and instability are characteristics of such a subsistence system. Indeed, if wind drying was the only storage technique known prior to Marpole, then climate might be taken as the mitigating factor against earlier coastal specialization. Of course, should the presence of a "classic" hypsithermal eventually be proven, this argument is without basis.

In conclusion, I must emphasize that the preceding model is one based on gross theoretical speculation interwoven with the little factual data which are available. Moreover, it is an inductive model and may have little validity for the evolution of the Northwest Coast cultural pattern outside of the Gulf of Georgia region. Thus, upon the acquisition of a larger inferential data base, it is subject to modification or possibly rejection. It does, nevertheless, have the capability of being tested both in terms of culture history and culture process.