

## Chapter 17



# An Overview of the Classic Lillooet Occupation at Keatley Creek

*Brian Hayden*



### Introduction

After 13 years of excavation, research, and analysis, what can be said about the nature of the Keatley Creek community at its height, or just prior to abandonment? What conclusions have been reached concerning the initial problems that we sought to resolve concerning the reasons for the existence of unusually large housepit residences? In this chapter, I will deal first with the resources available to Keatley Creek residents followed by a discussion of the relationship of resources to socioeconomic organization at the household and village level.

There are some conclusions that can be presented with a great amount of confidence. In these cases, the archaeological and ethnographic records are clear and unambiguous; they make logical sense and agree with each other. Other conclusions are more tentative; and still other conclusions only represent interesting possibilities requiring further information to either confirm or refute. I will try to identify each of these levels of confidence (relatively certain, probable, and possible) in the following discussion.

Much of the following summary builds upon previous work that is extensive in its own right (Hayden 1992a, b; 1995). Rather than repeat this research in detail, I will try to briefly summarize the main concepts and refer readers to the more complete presentations for other details.

### Resources

#### Modifications to Previous Reports

As argued earlier (Vol. I, Chap. 1) and elsewhere (Hayden 1992a, b), the nature of the resources that a community can extract with its existing technology should have substantial ramifications for the community's size and socioeconomic organization. This may be especially true for hunter/gatherers, and we are very confident that the prehistoric residents of Keatley Creek were hunter/gatherer/fishers. Considerable effort was therefore expended in trying to understand what those resources were and whether they had any reasonable relationship to socioeconomic organization at Keatley Creek, particularly as it pertained to the large residential corporate groups. The comprehensive results of our initial inventory based on the ethnographic use of resources by the two Stl'at'imx bands nearest to the site (the Ts'kw'aylaxw Band at Pavilion and the Xaxli'p Band at Fountain) have already been published (see Hayden 1992a). At that time, we considered the existing hunting, fishing, and plant gathering boundaries of these two bands to most likely reflect prehistoric boundaries. In these studies, traditional band territories met in a vaguely defined zone around the summits of the Clear Range mountains.

Subsequently, in discussions with David Pokotylo, it seems that these boundaries should probably be extended to the east, down onto the floor, or even

throughout, Upper Hat Creek Valley (Vol. I, Chap. 1, Figs. 3 and 7). Pokotylo's research in this valley established that it was largely used by transient groups, probably hunting; but that substantial numbers of root roasting pits also occurred on the upper valley slopes and in the valley floor. Interestingly, the largest root roasting pits only occurred from 2,250 to 1,150 BP after which only small roasting pits were used (Pokotylo and Froese 1983:152). This coincides almost exactly with the time period that large residential corporate groups were occupied at Keatley Creek, and Pokotylo suggests that their large size might have been due to larger cooperative economic units exploiting the valley for roots prior to 1,000 BP. The Upper Hat Creek Valley is about equidistant from the Fraser, the Bonaparte, and the Thompson Rivers. However, there are no large prehistoric housepit sites on the Bonaparte or Thompson Rivers within easy access to the Upper Hat Creek Valley. Only the Fraser River has large sites like the Keatley Creek and the Bell sites, and the populations there must have been so much larger than communities along the other rivers that the Fraser Valley communities would have needed access to greater root gathering and hunting land. These large communities would also be able to forcibly dominate neighboring groups to the east if necessary. The fact that large roasting pits ceased to be built or used at almost the exact same time that the large communities along the Fraser River were abandoned strongly supports this interpretation.

Thus, we have extended the postulated boundaries of the prehistoric Keatley Creek community far into the Upper Hat Creek Valley. Like other high altitude valleys (e.g., Botanie Valley), the Upper Hat Creek valley may have been a summer rendez-vous and root collecting area for many surrounding bands, and presumably would have been richer in geophyte foods than has been the case since. The presence of a few housepits and some very large root roasting pits at the junction of Hat Creek Valley and Marble Canyon indicates that there were probably relatively abundant geophyte foods in this locality in the past since the fish resources here are negligible. These extended boundaries do not directly affect the nature of the resource models used in the present studies, except that they provide important support for the lithic procurement models advanced in Bakewell (Vol. I, Chap. 16) and for the previous models of resource use formulated by Alexander (1992).

Another important modification of the general resource base as presented in 1992 involves the species of salmon available. The research by Berry (Vol. II, Chap. 8) and Kew (1992) indicate that pink salmon were the most abundant species of salmon in the Fraser River around Lillooet prior to the Hell's Gate landslide of 1913, and prior to the abandonment of the large Classic

Lillooet villages. Pink salmon are relatively small and have less fat than other salmon species. They are relatively weak swimmers and therefore they swim close to the shore. They are thus easier to catch and dry (often with the vertebral column left in the fillet). They are also very susceptible to having their migrations blocked by obstacles such as landslides. The heavy dependency on pink salmon documented at Keatley Creek indicates that the basic subsistence economy would have been very vulnerable to natural perturbations in salmon migrations.

## Overview of Subsistence

On the basis of early ethnographies, our recent ethnoarchaeological studies (in Hayden 1992c), and archaeological material, a number of general conclusions can be advanced with relative confidence about the subsistence at Keatley Creek. The foremost conclusion is that the Lillooet subsistence system was an extremely simplified one with very few staples accounting for the overwhelming bulk of foods consumed. Salmon was the single most important staple in the region. No other resource is now, or ever seems to have been, abundant enough to support large communities and population densities that characterized either the ethnographic or the Classic Lillooet periods. The ungulate ranges around Keatley Creek are of poor quality. Even with the Keatley Creek traditional band range extended to include much of Upper Hat Creek, the average total annual deer harvest (assuming humans culled 10% and cougars culled 10%) was probably not much more than 35, with no moose, only eight elk, and about five sheep (Dave Low, personal communication). Such densities could be easily overhunted by a population the size of Keatley Creek, or even much smaller groups as demonstrated by the overhunting of Upper Hat Creek, the Nicola Valley, and Chilcotin areas in historic times (Greaves 1990:92; Teit 1900:230; 1909:462; Wyatt 1972:197, 201, 212). While ungulate bones are common in the Keatley Creek deposits, they are primarily small smashed fragments that could all be from very few animals. Moreover, it is doubtful that the animals that these bones represent were killed more than a few kilometers from the site, whereas most ungulates were hunted in the summer and fall, high in the mountains where their bones would have been left.

The mainstay of the salmon component was probably pink salmon, with the second largest component being sockeye salmon, and a relatively minor but important component comprised of spring salmon. The sockeye and especially the spring salmon would have been the species of choice for drying and trading, while pinks would have been used almost

entirely for domestic consumption especially by poorer families. Although it is venturesome to estimate the exact proportions of these species in Keatley Creek subsistence due to the range of possible faunal assemblage formation factors (discussed in Vol. I, Chap. 17), if I were to hazard a guess, I would think that about 50–70% of all salmon might be composed of pinks, 20–40% of sockeye, and 10–20% of springs. It is worth emphasizing that there is strong evidence of episodic periods of starvation even in the very earliest years of contact (Kennedy and Bouchard 1992:319; Romanoff 1992b:481–3; Hayden 1992b:531; see also Mullan 1987:33–4 for accounts of starvation on the Columbia in 1811, 1825, 1826, and 1831). These accounts are important for our understanding of the dynamics of cultural changes and the identification of factors associated with increasing cultural complexity. On the basis of these data, the occurrence of food shortages at 10 or 20 year intervals does not seem to have been a critical factor (Hayden 1992b:531).

On the other hand, Drake-Terry (1989:24, 28, 47, 56, 72) has argued that fur trading activities led to the overexploitation of furbearers in the Fort Kamloops area by 1840, as well as gold mining resulting in overexploitation of game and fish in the Lillooet region by 1858. In addition, she argues that excessive salmon fishing at Fort Langley on the Lower Fraser River resulted in native starvation upriver from 1859–61. Without further documentation, it is difficult to assess these arguments. For instance, Codere (1950:28–9) maintains that even as late as 1880, commercial fishermen were only taking 61,000 cases of salmon out of British Columbia waters, and that even much greater harvesting in subsequent years did not have an adverse effect on Indian subsistence fishing. However, what is clear is that periods of starvation and fish failures did occur in a cyclic fashion decades before any significant impact of the European presence occurred.

There are few indications that highly productive geophyte patches would have been available to Keatley Creek residents, or that they brought back any substantial quantities of dried roots to the Keatley Creek winter base camp (Vol. I, Chaps. 9 and 17). There is evidence at Keatley Creek for the presence and use of a number of berries which are abundant throughout the region; however, their sparse remains do not indicate that they constituted a stored staple of major importance during the winter months. Climatic changes over the past 2,000 years do not appear to have been of great enough magnitude to have changed these assessments dramatically. On the basis of radioisotope analyses, it is probably realistic to view up to 70% of the overall diet as composed of salmon (Chisholm 1986; Lovell et al. 1986), with the vast majority of the non-salmon foods such as geophytes, berries, and unguates being

consumed during the spring, early summer and late fall. Impressionistically, it seems that dried salmon may have accounted for as much as 80–90% of all food consumed during the winter in housepit villages. The remainder would be composed of stored berries and geophytes together with very occasional dried meat and fresh animal kills.

## Community Size

Community size is one of the most important cultural traits that is strongly influenced by the nature of the "extractable" resources of an area (i.e., those food resources that can be obtained with existing technology and other cultural constraints). In general, it can be argued that for subsistence-based societies, community size should be a function of local resources. Abundance and the spatial restriction of resources, as well as the need for cooperative labor to extract food at optimal rates (e.g., Beckerman 1983), are perhaps the most common and relevant resource characteristics of relevance. In the Mid Fraser Canyon, restricted numbers of water sources may have also constrained the number of sites that could be inhabited, although Keatley Creek is one of the smallest creeks of the entire Middle Fraser Canyon. It must also be acknowledged that other factors sometimes play important roles (Vol. II, Chap. 2), such as defense considerations (Keeley 1996), the desire to be close to trade routes (e.g., the effect of the fur trade on native settlement patterns and sizes), the cost of moving residences, and the availability of suitable community sites (see also E. Smith 1981). Of special relevance is Alexander's (Vol. II, Chap. 2) observation that larger settlements are needed to defend wealthier groups.

Community size, in turn, has an important effect on many other community characteristics such as the need for hierarchical organization (G. Johnson 1982), the need for specialists (including types of political officials), and the ability to wage war. The settlement at Keatley Creek does not appear to have been defensive in nature although sheer size is often a major deterrent of attacks. On the other hand, winter may not have been a time when raids generally took place due to the difficulty of traversing snow-bound mountain passes (Desmond Peters, Senior, personal communication). Although habitation sites may have been somewhat limited by water resources, there is little correlation between water flow and community size, and there are at least 184 recorded housepit sites between Lytton and Pavilion (Vol. I, Chap. 1, Fig 3). If water availability was the factor most influencing site size, we should find many more large sites at major creek locations such as Sallus Creek and far fewer small dispersed sites. Thus, by process of elimination, it would appear that the large size of the Keatley Creek

village can best be understood in terms of abundant local resources and the generation of substantial wealth. Control over trade routes may have also played a role, although it is not evident why Keatley Creek should have had greater advantages in this respect than any other village in the area on the Fraser terraces.

The location of the Keatley Creek village makes most sense in terms of optimal proximity to wood, water, and primary fish procurement locations. Locations that provided some shelter from winds, and the size of the area suitable for occupation may have also played roles in site selection. However, when one observes the degree of adaptability of community residents to locations such as the Bell site, located high up on a steep mountain slope, it seems that there must have been many suitable physical sites for housepit villages.

Binford (1990:131) has suggested that sedentism is primarily related to storage and cold climate. Both these factors are relevant to understanding the existence of Keatley Creek since large amounts of fish were stored in order to survive the harshest months of the year. However, abundance of resources must also be taken into account, as examples such as the Calusa (who did not store food or endure seasonally frigid temperatures, being situated in Florida) and many horticultural communities demonstrate since these groups do not reside in cold climates and frequently did not use storage facilities. It is also interesting to view the major residential corporate groups of large settlements like Keatley Creek as simply extended aggregation phases of otherwise independent hunting and gathering bands that come together for socialization, marriages, alliances, and rituals during the winter, and then separated into independent local groups for the rest of the year (Wills and Windes 1989). As we have seen, the major corporate groups at Keatley Creek seem to have exploited distinctly separate ranges when they were not residing at Keatley Creek (Vol. I, Chap. 16).

## Sources of Salmon at Keatley Creek

The overwhelming importance of salmon in the prehistoric diet of the residents at Keatley Creek is one of the more certain conclusions that have been established by our own research and the research of others. Ethnography, history, isotopic analysis, archaeology, and studies of regional extractable resources all concur in indicating that salmon was more important than all other foods combined. Given the strength of this conclusion, it might next be asked where the salmon procurement sites were for the largest, most populous community of the entire Classic Lillooet region. Other major sites such as the Bridge River site,

the Bell site (as well as their corresponding modern communities), the McKay Creek settlements, and the Seton site are situated near prime fish procurement locations on the Fraser River—the Six Mile fishery and the Ten Mile fishery, a prime fishing location near McKay Creek recorded in Hayden 1992c, and the Seton River fishery, respectively. Moreover, Sam Mitchell (Bouchard and Kennedy 1973) stated that people in winter villages always lived near their fishing places. While the prehistoric residents of Keatley Creek may have procured some of their salmon from the fisheries associated with other village sites, the substantial prehistoric transportation costs lead one to expect the establishment of winter villages relatively close to productive fisheries. What important fisheries are close to Keatley Creek? Our ethnoarchaeological inventory of fisheries along the Fraser River (Kennedy and Bouchard 1992; Tyhurst 1992:363) indicated that there were no major fisheries between the Ten Mile rapids just below the Bell site and Skwish Creek, about 3 km upstream from Pavilion. Only at the mouth of Sallus Creek and at a rocky point about a kilometer above the “Camelsfoot constriction” are there minor rock outcrops that could be used for effective fishing of deep swimming salmon. Such locations are suitable for use by a few people, but are generally not very highly productive (Tyhurst 1992:357). With no obvious, highly productive sources in the immediate Keatley Creek vicinity to produce the vast amounts of salmon that must have been consumed at Keatley Creek, we are faced with a conundrum.

There are several possible answers to the paradox of where the salmon must have come from. I will not consider the possibilities that other resources were used by residents or that population estimates have been exaggerated by many times. There are no good data or other arguments to sustain such interpretations, whereas all the data except the identification of the salmon procurement sites, support the premise of a populous community at Keatley Creek relying heavily upon salmon. Assuming these interpretations are correct, the possible salmon sources include:

- 1) Trade with other groups established at the principal fisheries. This seems unlikely since Keatley Creek has no resources that the other sites would not also have.
- 2) Direct procurement of salmon at the other major fisheries, especially at the Six and Ten Mile fisheries. This also seems unlikely given the transport costs involved. Moreover, it raises questions about why settlements closer to these highly productive fisheries would not have been much larger.
- 3) The long stretches of gravel shorelines near Keatley Creek may have been unusually productive for

procuring pink salmon, although they are not suitable for procuring other types of salmon. This is a speculative possibility, but we have virtually no information on traditional fishing techniques for pink salmon since these runs were eliminated by the Hells Gate landslide of 1913. It seems possible that simple artificial brush or rock jetties along the gravel shores of the Fraser River might have been sufficient to create effective procurement sites for these weak swimming, shore-hugging fish. A simple dip net technology (in contrast to the longer, larger, and more complex dip nets used for sockeye and spring salmon) would be adequate to harvest pinks from these locations.

- 4) Substantial changes may have occurred over the last thousand years in the rock outcrops that intersect the Fraser River in the vicinity of Keatley Creek. In particular, the outcrops at the mouth of Sallus Creek



Figure 1. An aerial view of the Fraser River at the Camelsfoot constriction near the Keatley Creek site. The sheer rock wall on the left is casting a sharp shadow.

may have collapsed or been eroded to less productive forms. In addition, the fresh-looking shear rock faces at the Camelsfoot constriction (Fig. 1) seem to indicate that substantial shearing, spalling, or collapse of this major rock formation has occurred sometime in the last millennium and may have altered some fishing sites. However, it must be admitted that this cliff face is so sheer and tall, and the river constriction below it is so narrow, that it is difficult to imagine how this or nearby locations could have ever been used for fishing, or how the contours of the bedrock outcrops could ever have been much different.

- 5) Although the walls of the Camelsfoot constriction are sheer, it is possible that artificial platforms could have been suspended along the rockfaces from anchors above and back from the rockfaces. These platforms could have enabled fishermen to obtain salmon in great abundance since all species of salmon would have been forced close against the canyon walls. The extremely narrow canyon would have provided ideal conditions for concentrating salmon in this fashion as well as immediately downstream where they would congregate while resting before the ascent through the canyon. The only problem would have been access. That Interior Salish Indians could have engineered such access is indicated in the accounts from Simon Fraser of crossing the precipitous cliff faces at Hell's Gate. Because of the importance of these observations for our potential understanding of fishing technology near Keatley Creek, I quote these passages at length:

I have been for a long period among the Rocky Mountains, but have never seen any thing equal to this country, for I cannot find words to describe our situation at times. We had to pass where no human being should venture . . . steps which are formed like a ladder, or the shrouds of a ship, by poles hanging to one another and crossed at certain distances with twigs and withes, suspended from the top to the foot of precipices, and fastened at both ends to stones and trees, furnished a safe and convenient passage to the Natives—but we, who had not the advantages of their experience, were often in imminent danger. (Lamb 1960:96)

The road was inconceivably bad. We had to pass many difficult rocks, defiles and precipices, through which there was a kind of beaten path used by the natives, and made passable by means of scaffolds, bridges and ladders so peculiarly constructed, that it required no small degree of necessity, dexterity and courage in strangers to undertake a passage through such intricacies of apparent danger as we had to encounter on this occasion. For instance we had to ascend precipices by means of ladders composed of two long poles placed upright and parallel with sticks crossways tied with twigs. Upon the end of these others were placed, and so on for any height. Add to this that the ladders were often so slack that

the smallest breeze put them in motion—swinging them against the rocks—while the steps were so narrow and irregular leading from scaffold to scaffold, that they could scarcely be traced by the feet without the greatest care and circumspection; the most perilous was, when another rock projected over the one you were leaving. . . . The descents were still worse. . . . the Indians . . . thought nothing of these difficulties, but went up and down these wild places with the same agility as sailors do on board of a ship. (Lamb 1960:116–7)

It is also worth remembering that even at contact, the Indians had established a substantial rope bridge over Bridge River and over the Chilko River (Teit 1909:583), indicating that their rope technology could be quite sophisticated when the rewards justified the necessary investment of time and effort. Furthermore, suspended fishing platforms were popularly used elsewhere on the Plateau. In 1872, along the Fraser River Canyon, A.C. Anderson observed that “scoop nets are

chiefly used, which are wrought from stages (scaffolds) suspended from the rocks bordering on rapid currents.” (Kennedy and Bouchard 1992:284). Dawson (1989:55) saw similar “structures of poles” suspended from higher parts of banks used for fishing in 1875 between Yale and Lytton. Even in more recent years, Desmond Peters, Senior (personal communication) used similar scaffolds for fishing in the Lillooet region. At the Dalles, up until comparatively recent times, scaffolds were also used (Fig. 2). Without historical documentation, I had originally assumed that the suspended platforms at the Dalles were probably a recent development that occurred with the introduction of industrial technology. However, Simon Fraser’s and Anderson’s descriptions make it seem much more likely that the platforms at the Dalles had prehistoric origins, and that similar scaffolding might have been used at the Camelsfoot constriction by groups able to construct the necessary facilities to procure major quantities of sockeye and

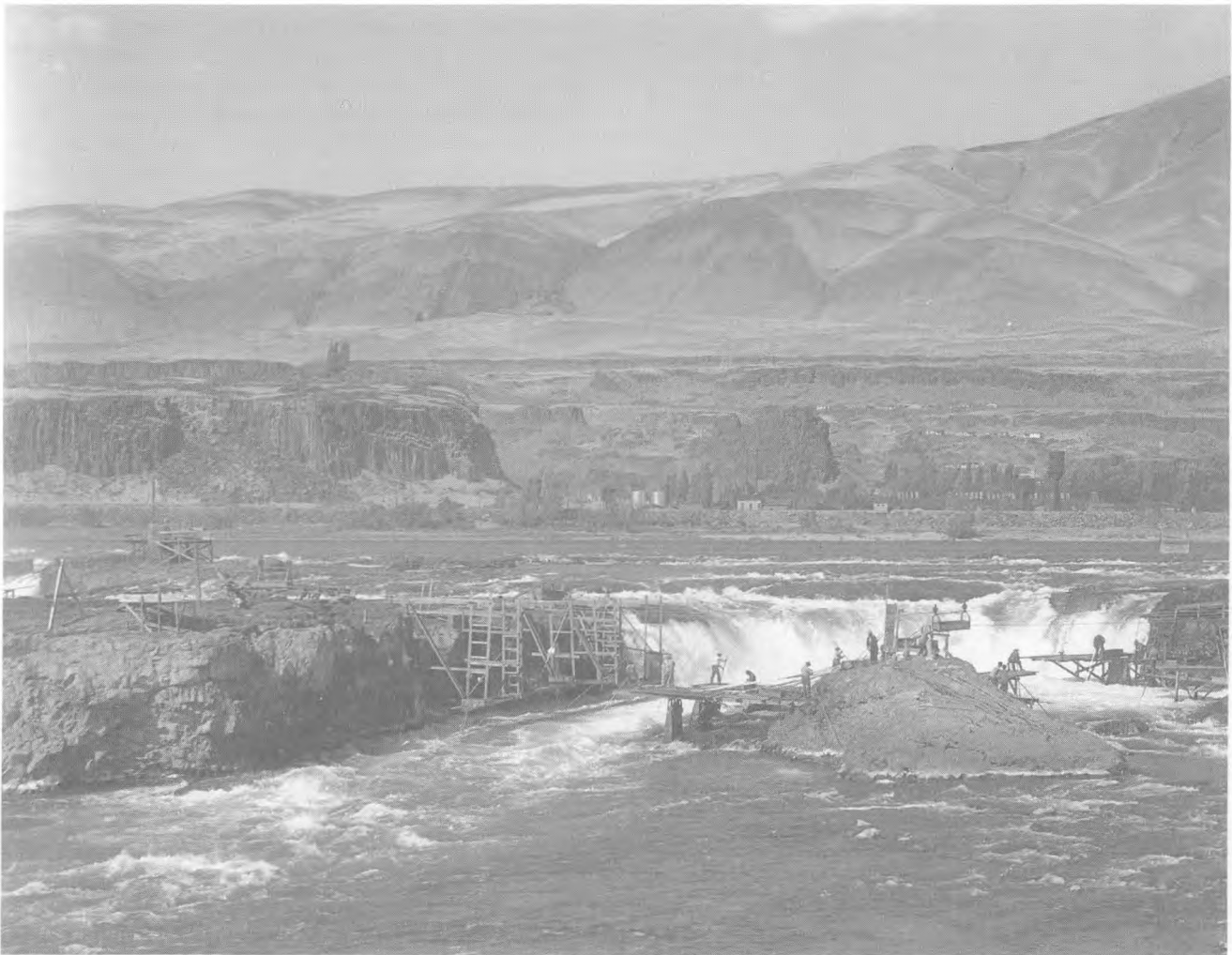


Figure 2. Platforms and scaffolds constructed at the Dalles in order to intensify procurement of salmon. Note in particular the scaffolds “hung” from the rock faces to the left of the main falls; similar scaffolds may have been used by residents of Keatley Creek at the Camelsfoot constriction. (Photo by David Cole, 1956).

spring salmon. Whether this technology would have been adequate to overcome the shear canyon walls at the Camelsfoot constriction remains to be determined.

In sum, there are enough plausible scenarios for the procurement of abundant amounts of salmon in the Keatley Creek vicinity for us to assume not only that it was possible, but that it actually occurred and supported the large populations at the Keatley Creek site. Although we have not been able to explore these possibilities (indeed it is conceivable that the evidence may even be beyond archaeological recovery due to spalling and landslides at key locations), they can be treated as hypotheses worth testing in the future.

## Lillooet Resources and Cultural Adaptations

There are numerous potential relationships between resource characteristics and cultural adaptations. In this section, I will focus on several of the most important types of adaptations, namely: 1) the overall effect of resources on private ownership, competition, cooperation, and socioeconomic inequality; 2) conditions that give rise to large residential corporate groups; 3) conditions that promote large village sizes and regional trade. Other issues that have been previously addressed are the intensity and frequency of raiding in relationship to resource shortages (Cannon 1992) and the nature and importance of feasting (Hayden 1995).

As I have argued elsewhere, when considering human behavior as adapted to ecological or practical concerns, we are only making statements about *average* human motivations and decision making. We are not making any predictive or blanket statements about any one individual's behavior, much less all individuals' behavior. People exhibit far too great a range of idiosyncratic motivations for that to be possible. While diversity is the raw stuff of evolution, survival and coping with practical realities are nevertheless the keys to short term success. Natural selection has weighted the scales in favor of survival by ensuring that most people most of the time behave so as to ensure their own survival and success even though the promotion of diversity in some individual behaviors may be unpredictable and result in individual failures. In his Foundation trilogy, Isaac Asimov called this perplexing situation the "Theory of Psycho History." He astutely observed that while we can predict human behavior given enough mass (number of people), our generalizations can never be applied in a law-like fashion to individuals. And it is true.

## Socioeconomic Adaptations at the Community Level

The reasons why complex hunter/gatherer communities develop from generalized hunter/gatherers is one of the most important theoretical questions archaeologists are now trying to resolve. With their competitive use of food and wealth, their pronounced socioeconomic inequalities, their intensive food procurement strategies, their prestige technologies, and their private ownership of procured food, wealth, and resource locations, complex hunter/gatherers are much more similar to horticultural communities than to more nomadic generalized hunter/gatherers (Testart 1982; Price and Brown 1985:16; Shnirelman 1992). This basic distinction between generalized and complex hunter/gatherers was recognized a century ago by Grosse (1896) but has been neglected until the last two decades in anthropology and archaeology.

While there are numerous attempts to account for the emergence of complex hunter/gatherers in the Northwest (see Ames [1994] and Matson and Coupland [1995] for recent reviews) the most critical question, in my opinion is whether conditions of stress or abundance lead to socioeconomic inequality and complexity. I have argued this issue at some length elsewhere (Hayden and Gargett 1990; Hayden 1992a, b; 1994; 1995; 1996). The gist of these arguments is that if complexity is based on the production of surpluses, then it must arise under conditions of abundance; this seems axiomatic. Moreover, private ownership of produce or resources will generally not be tolerated by any community of generalized hunter/gatherers at large when food shortages occur on a widespread and regular basis. It is only under normal conditions of abundance and adequate food provisioning for all families that most residents of a community will acknowledge the right of some or all people to establish proprietary claims on food that they have produced, as well as on resource locations, and on wealth. Ownership of resource locations is the key to understanding complexity according to Matson (1983; 1985; 1992:422; Matson and Coupland 1995:150-2) and others (Coupland 1988:36-9; Victor Shnirelman, personal communication; Burnard 1987) and is strongly implicated in the development of resource and technological intensification (Testart 1982; Tremaine 1997).

On the basis of a number of ethnographic examples from the Plateau and elsewhere, the general community acknowledgment of ownership seems to be conditional on everyone having enough to eat in normal times. When resource conditions deteriorate to the point that enough families experience significant food shortages,

the acknowledgment of resource ownership is revoked by the community, and "owners" are obligated to share their resources with others in need (as documented below). This viewpoint is contested by researchers advocating that complexity develops as an adaptation to stress, population pressure, or the need for information management and quick responses to threats or environmental changes.

Studies on the Northwest Coast have demonstrated a strong relationship between salmon productivity and socioeconomic complexity (Donald and Mitchell 1975, Mitchell and Donald 1988:321). Other researchers in the area note that status differentiation and rank appear after archaeological indications of salmon abundance (Carlson 1993, 1996) and that potlatching only took place in times of surplus, *not* when people were starving (Codere 1950: 63). It was the increase in trade and wealth generated by the fur trade with Eurocanadian suppliers of Industrial goods that created the intense levels of potlatching noted both on the Coast and in the Interior in historic times (Codere 1950:94-5; Goldman 1940:339-346; Gibson 1988: 389). On the south Alaska coast, Maschner and Hoffman (1994) observe that there is no evidence of economic stress when ranking and corporate groups emerge and that large houses up to 500 square meters formed in the richest environments.

On the Plateau, Eugene Hunn (1990:214) expresses a similar notion when he observes that food surpluses are correlated with population, wealth, and political centralization. Indeed, the two most complex centers ethnographically observed were the Dalles on the Columbia Plateau and the Lillooet region on the British Columbia Plateau. Both locations were noted as the most productive salmon fisheries throughout the Interior drainages of their respective river systems. The quality of salmon in these locations was also optimal in terms of their fat content and nutritional value, thereby enhancing the exchange value of any surpluses (Romanoff 1992a:249; Kew 1992:186; Teit 1906:231-2). Such a coincidence seems far too pronounced to be fortuitous and strongly supports the surplus-driven models of complexity rather than the deficit-model of complexity. Similarly, in California, it is only communities with rich sea mammal rookeries, fishing, and oak groves that developed complex societies (Hildebrandt and Jones 1992:389). In contrast, social complexity is documented as emerging in other areas of the world where resource shortages were not important factors (Milisauskas and Kruk 1993:90).

Only Schalk (1981) and Matson (1985) have argued on reasonable empirical grounds that complexity is the result of temporal and spatial concentrations of resources rather than resource abundance. Schalk emphasizes the effects of temporal constraints, while

Matson emphasizes the spatial constraints. From a broad comparative perspective, these arguments do not accord well with the data. The Calusa of Florida were among the most complex hunting and gathering cultures in the world, yet appear to have had year-round access to fresh resources with little or no temporal restrictions and no significant long-term storage (Widmer 1988:268). Among the early complex communities of coastal Chiapas, Blake (1993) suggests that food was constantly available with little seasonal variation in abundance. It is also relevant to note that the most complex communities in New Guinea which bordered on chiefdoms, had root resources readily available from gardens all year around.

Similarly, while perhaps not quite as complex as more northern groups, the Straits of Georgia and Fraser estuary Salish groups with much less need to store food than their Interior counterparts due to the more constant availability of salmon runs and other food resources, were very complex hunter/gatherers on a world scale. Moreover, as a group, the coastal communities were certainly more complex than communities farther upstream in the Interior where resource availability was much more temporally and spatially constrained due to the progressively lower numbers of salmon runs with increasing distance from the ocean (leading to a far greater reliance on storage) and the limited number of good fishing locations. The greater complexity of the coastal groups cannot therefore be understood in terms of the importance of storage or in terms of temporal constraints on resource availability (contra Schalk 1981 and Binford 1990). Rather, the progressive changes in complexity from the Coast to the Interior are much more intelligible in terms of the progressive reduction of salmon abundance as one proceeds upstream (see Kew 1992). Groups inhabiting the headwaters of the main rivers had the most pronounced temporal constraints on salmon procurement, but the least abundant surpluses, and the least complex societies of any of the transegalitarian communities to be discussed.

Thus, resource abundance seems to play a fundamental, critical role in the emergence of complex hunter/gatherer communities. However, secondary factors such as the need for constructing costly procurement facilities, or increasingly intensive labor requirements to process ever larger amounts of resources in ever shorter time periods as temporal availability of resources decreased, or other special labor requirements, also seem to act as second order factors affecting the degree and nature of complexity that emerges in communities.

While all regions of the Northwest Coast may have had approximately the same ability to produce food sur-



pluses, perhaps the north coast groups did have greater cooperative labor organization requirements for exploiting owned resource locations. From the limited perspective of the Northwest Coast, Schalk may be right: greater social and political complexity probably developed in the north because of shorter availability of critical resources. However, to argue that resource abundance is not fundamental to all basic complexity on the Northwest Coast and elsewhere is unwarranted. Spatial restriction and reliability undoubtedly play a very significant similar role as well (per Matson 1985; 1992:422). The importance of restricted access to abundant resources is clearly illustrated by comparing the Lillooet region with other regions along the Fraser River or the Thompson River where the natural rock formations did not provide as good fishing locations, but where the scheduling of the fish runs was essentially the same (Romanoff 1992b:483). Where good fishing locations occurred that produced abundant, reliable surpluses of fish, high populations and complex cultures existed, as around Lillooet and the Farwell Canyon region at the confluence of the Chilko River. Simon Fraser was told by the Shuswap living upstream from the Lillooet that he "could not suffer from want" among the Fraser Lillooet (Lamb 1960:77-9). Where the fishing locations were less productive, as in the Chilcotin, and in the Nicola Valley, the populations were smaller and the cultures were less complex (Bussey and Alexander and 1992; Wyatt 1972:39,183-4). It is difficult to dismiss resource abundance and the ability to produce surpluses on a regular and reliable basis as a critical variable in explaining complexity, and I have no doubt that had the Lillooet communities been able to produce increasing amounts of surpluses that they would have developed still more complex communities.

Testart (1982), Binford (1990:131), Ingold (1983), and others have argued that food storage, or delayed consumption, was a critical element in the emergence of ownership, sedentism, and complexity, among other phenomena. While it seems clear that storage does have the effects attributed to it by Testart, I am not convinced that it is strictly necessary for complexity or the other phenomena to develop. Certainly, the extra effort required to process and store large amounts of food on a long-term basis would be a great incentive to view the stored produce as one's own private property and would create the *potential* for separating producers from their stored produce as Coupland (1988:215) has emphasized (see also Matson and Coupland 1995). Carlson (1993, 1996) similarly argues that stored food requires management, a redistribution system, and invites treatment of surpluses as capital, while Matson (1992:420) clearly relates storage to the establishment

of the Northwest Coast pattern of status display. This is all probably true. However, as previous examples have shown, some of the most complex hunter/gatherers and horticultural groups in the world had little long term large scale storage. Ownership over stored produce would only be recognized by others if they, too, had an equal opportunity to obtain adequate food for themselves.

Thus, I would argue that while storage certainly facilitated and promoted ownership, hierarchies, sedentism, and investment, it probably played more of a secondary role in these developments (e.g., making it possible to sustain higher population densities in seasonal environments as well as maximizing use of resources) compared to the more fundamental role of absolute exploitable resource abundance. In fact, on the Coast, prestige technology precedes evidence for large scale storage by about 1,000 years (Carlson 1989, 1991, 1993, 1996; Matson 1992:423). The critical point is that food abundance must be convertible into wealth either via processing it into storable forms that have value in other seasons, or via direct exchange, or via direct support of non-food producing individuals. "Social storage," which I think is a misnomer, is only one of several strategies. Where real storage is used, houses of successful aggrandizers have more storage space on a per capita basis in order to support feasts, trade, and other strategies for converting surplus food into power and wealth (Lightfoot and Feinman 1982). Because of these uses, some storage by elites in the most complex transegalitarian and chiefdom communities can probably always be expected, even in non-seasonal environments.

From this perspective, I have argued that once individuals or families are permitted to accumulate and own food surpluses, ambitious aggrandizers begin to develop schemes to get other community members to produce surpluses, to surrender some control over those surpluses to the aggrandizers, and to use these surpluses to advance their own self-interest by concentrating more and more political, economic, and social power in their own hands (see Clark and Blake 1994:21; Hayden 1995). These aggrandizers use a variable mix of strategies based on the provocation of wars involving feasts (surpluses) for allies and death compensation payments; the sponsoring of reciprocal feasts for allies; the creation of competitive feasts based on investment and advertising; increasing the value of marriage payments and succeeding reciprocal exchanges; increasing the value of the children involved in marriages via expensive child maturation feasts; and by controlled regional exchange. I will elaborate these issues in the next section.

## Resource Relationships to Residential Corporate Groups

### Large Structures

Because of the disadvantages of living with large numbers of people in large structures, I have argued that considerable other practical advantages should be present to induce people to choose living in large residential corporate groups. The disadvantages are both social and physical. As the number of people residing in close proximity increases arithmetically, the number of possible conflicts increases geometrically. This situation would be particularly aggravated at the high resident densities recorded ethnographically for pithouses (Vol. II, Chap. 2, Table 1). In physical terms, it is clear that large structures require considerably more costly heating strategies to maintain at acceptable temperatures than smaller structures (Vol. II, Chap. 16). What advantages, therefore, could have existed to induce some of the residents at Keatley Creek to live in unusually large pithouses? This is a problem addressed by Lewis Henry Morgan over a century ago (1881).

One of the advantages might be defense. Raiding was certainly a part of life on the British Columbia Plateau (Cannon 1992); however, most prehistoric winter communities had no formal defenses. Desmond Peters, Senior (personal communication) has pointed out that raiding was not generally conducted in the winter when snow would have blocked mountain passes. Raiding was predominantly a summer and fall activity. Keeley (1996) also points out that large communities are the most immune to raids. Moreover, if defense were a primary reason for living in large residential corporate groups, it could be expected that the great majority of people in a community would do so. The fact that a large number of people lived in small or medium sized housepits at Keatley Creek and even more so elsewhere on the Plateau where warfare was more intense, indicates that defense was probably not a key factor in the emergence of large residences. The fact that these large structures occur in regions with exceptional salmon resources (the Lillooet and Farwell Canyon regions) seems far more pertinent.

The second obvious condition that could lead people to reside as large coresidential groups in large residences is for material benefits or gains (Morgan 1881; Hayden and Cannon 1982). In addition to theoretical considerations, both the ethnographic and the archaeological record provide critical support for the idea that the largest residences were founded on the control of the most lucrative salmon resources in the region. Theoretically, Cannon and I thought that under certain conditions where labor was the bottleneck to wealth, aggrandizing individuals might

provide benefits to supporters for helping to exploit resources or undertake other profitable projects. In this scenario, aggrandizers need reliable labor to succeed, while corporate members hope to improve their normal standard of living by belonging to an aggrandizer's corporate support group. Members are thus attracted to corporate groups by advantages rather than driven to them by necessity. By implication, the wealthier a corporate group was, the larger their corporate group residence would be, and vice versa. This relationship has been documented by many researchers in specific instances from the Northwest and as a cross-cultural pattern (Netting 1982; Feinman and Neitzel 1984:75; Maugher 1991:133; Nastich 1954:23; Post and Commons 1938:39; Walters 1938:87; Jewitt 1974:49; MacKenzie 1962:220; Blake 1991:28-9; Jochelson 1908:69-72; Minc 1986:89; Beckerman 1983). As in other parts of the world, it seems that "large residences therefore became monuments to the authority of their leaders," (Huntington and Metcalf 1979:138).

In conjunction with the creation of large houses to display economic success and the size of the corporate labor force, it would have been necessary to garner much larger surpluses than other households in order to attract and bind kin and nonkin members to the residential corporate groups. While some of the surplus food could be exchanged or transformed and displayed as prestige items (Vol. II, Chap. 13), the vast bulk of food stores and surpluses would have to be stored for a number of months in order to be used for feasts or emergency stores. This would have required storage facilities, and there were a number of storage strategies used, including raised platform or pit caches at fishing sites, raised platform or pit caches near pithouses, pit caches inside pithouses, and storage in baskets or on rafter shelves in pithouses. Many of these storage facilities would have been easily visible and perhaps even decorated by wealthier families, especially the raised caches or the small roof-like coverings of outside cache pits. In other traditional cultures with which I am familiar, such as the Torajan communities in Sulawesi, Indonesia, food storage facilities are elaborately decorated and serve to display the wealth and success of households. Even if the Lillooet storage facilities were not decorated, their size and number must have been public knowledge and must have been used as a major criterion for assessing a household's assets and economic worth. Corporate members, prospective intermarrying families, exchange partners, allies, and feasting partners would all probably have keen notes on storage facilities in deciding where their best interests lay.

Aside from defense and self-benefit, I can think of no other plausible practical explanation for the large winter structures that existed at Keatley Creek and

elsewhere on the Plateau. On the Coast, Drucker (1951:279–80) clearly states that lower ranking tenant or retainer families were attracted to the powerful and wealthy longhouses. The aggrandizer-attractor explanation has the very great advantage of providing an inherent hierarchical framework capable of resolving disputes, maintaining social harmony, group cooperation, and propagating itself. That is, because people are attracted to corporate membership in order to obtain things or services that they desire, and because the power to dispense goods or services is hierarchically structured within the group, members are strongly motivated to subdue social animosities within the group and to accept decisions made by controlling figures in the organization, just as in contemporary corporations. This explains how social harmony was achieved and why people sought and probably competed for membership in the residential corporate groups at Keatley Creek. The ownership of surplus producing resources as a basis for these corporate groups also explains the existence of hereditary “chiefs” (corporate administrators and titular owners) in the Northwest in what otherwise seem to be societies characterized by achieved status (i.e., Big Man, or ranked societies—see Schulting 1995:73; Teit 1906:254–5). This is discussed in more detail below.

## Resource Intensification Structures

Before any excavation began, I suspected that the control of the major surplus staple, salmon, would be the economic basis for the establishment of these corporate groups, particularly since it was known that salmon was a valuable trade item produced in abundance in the Lillooet region (Hayden et al. 1985), an idea which was not particularly novel at the time, but which had never been tested. As Cannon (n.d.) stated it: “control over other resources like trapping grounds were not sufficiently important to provide the impetus for corporate group formation or maintenance. It seems more likely that ownership of trapping grounds [and other resources] was ancillary to the ownership of the salmon stations, and that existing corporate groups provided the framework for the ownership of any and all valuable resources.”

Ethnographically, some continuity between Classic Lillooet and essentially modern resource exploitation practices might be expected. These elements can provide hints of past socioeconomic organization. One of the elements of most relevance is the private ownership of the most valuable fishing localities. While the largest, most productive fishing sites were owned in common by the entire community and ensured that everyone had access to sufficient salmon for their own

subsistence purposes in normal years, there were also more than 25 owned fishing locations from Della Creek to Pavilion Creek (Kennedy and Bouchard 1992; Romanoff 1992a:242–7; Teit 1900:294; 1906:255; 1909:582). While sockeye salmon could be procured at the public sites, spring salmon were difficult to obtain there. In contrast, spring salmon were the predominant species obtained at the privately owned sites (Kennedy and Bouchard 1992; Romanoff 1992a:234; Alexander 1992:163), and it was dried spring salmon that were the most valued trade species (Teit 1906:232; Romanoff 1992a:242, 252), probably because its higher oil content was critical for supplying enough calories in the winter months to stay warm. The fact that spring salmon were far less numerous than sockeye salmon (Hayden 1992a), that spring salmon were much stronger swimmers that stayed in deeper water than any other species, and the fact that they required much more careful drying in order to prevent the oil from turning rancid, all undoubtedly added to the high value of dried spring salmon as a trade commodity. They were much harder to get and much harder to process. The fact that they stayed in deep water meant that only a very few natural rock outcrops which projected far into the river would be suitable for obtaining springs, and even then, artificial wood platforms or scaffolds had to be constructed out over the water in order to maximize chances of procuring them. Construction of platforms involved the procurement of long timber poles, strong ropes, and secure fittings. They required from one to three days simply to assemble (Alexander 1992:163; Romanoff 1992a:242). As noted previously, scaffolds were used at some locations along the Fraser River.

The investment of effort in the creation of these unusual facilities may have been one of the principal arguments for their privileged use by their builders and their descendants. Fishing at such locations would have only become productive by dint of the time and effort that certain individuals put into making them productive. These individuals would not be depriving anyone else of their usual food resources, but would be opening up a new source of fish through their own efforts. Such individuals could be seen as having a natural right to privileged access, or “ownership,” of these locations, especially once the principle of ownership over produce had been established (see Hayden 1992b), although even these claims might only be recognized when others perceived some benefit for themselves (Romanoff 1992b:494). The benefits that non-owners of fishing platforms might derive from the establishment of these facilities would include:

- 1) the ability to use the improved or developed facilities after the owner had finished (even if there was

- a fee); this arrangement was common (see Vol. II, Chap. 17; Hayden 1994)
- 2) the advantage of increased protection that larger and more powerful groups provided for all community and corporate group members (disappearances in the mountains were frequent and worrisome—Teit 1906:240; compare also Burch 1975:226 and Keeley 1996);
  - 3) the increased variety of options for survival in times of famine that rich neighbors provided, including possibilities of working for food, borrowing food, and begging for food, even if the giving of food always entailed becoming indebted and was rarely if ever completely gratis (Nastich 1954:24; Teit 1909:705–6, 731; Sproat 1987:112–3);
  - 4) the availability of increased wealth and exchange goods in the community that surplus producing groups would bring; non-owners could obtain some of these items through industrious work and affiliation with owner groups;
  - 5) the increased availability of desirable mates within a community that surplus production would bring especially in non-owners could obtain backing from owners to acquire mates.

Only when there was general starvation in exceptionally bad years might recognition of privileged use or ownership of these sites and their produce be retracted (Hayden 1995; Sproat 1987:112–3; Hudson, n.d.:5).

Because it was so critical to obtain and store large numbers of salmon for survival through the winter, and because salmon were only available in abundance for a short period of the year at very restricted locations, access to labor during times of salmon availability determined the magnitude of surpluses that could be produced. While individual runs of salmon might be spread out over a week or more, the extraordinarily productive peaks of these runs generally lasted for only a day or two each (Hayden 1992a, b). These were the times when it was essential to run the productive fishing localities around the clock and to have enough people processing salmon to prevent any from being wasted. Even strong fishermen needed to rest after about 30 minutes of fishing at peak periods although they could catch up to 300 per day (Alexander 1992:163–4; Kennedy and Bouchard 1992:300–1). Although these cases are exceptional, Desmond Peters, Senior (personal communication) describes how he once caught 25 sockeye and a spring salmon in only three sweeps of his net, while other accounts mention 12–15 fish caught with one sweep of a net (Kennedy and Bouchard 1992:283), and 10–11 salmon caught in one sweep (Franklin Ledoux: personal communication). Thus, having a number of brothers or other kin or corporate members who could share in the exploitation

of a lucrative fishing location maximized the benefits that could be obtained from the investments in platforms and the advantages of promoting claims of ownership.

## Corporate Group Laborers and Owners

Salmon processing personnel constituted the most serious bottleneck in this system of production. As noted above, hundreds of salmon could be caught by a single person during peak periods whereas only about 30–60 could be processed by a single woman in one day (Romanoff 1992a:235; 1992b:482). There are several accounts of fish going to waste because the women processing salmon could not keep up with the rate of catch (Kennedy and Bouchard 1992:300–1). My experiments with stone tools indicate that butchering time would probably be at least doubled prehistorically creating even more of a bottleneck. Traditionally, butchering and drying was exclusively done by women (Kennedy and Bouchard 1992; Romanoff 1992a). Stryd (1971), Romanoff (1992b:479) and Kennedy and Bouchard (1992:301) suggest that the pronounced degree of polygamy as well as the holding of slaves noted ethnographically for wealthy Lillooet men probably was in part due to the need for many people to process the abundant salmon that the wealthy obtained from their owned fishing locations (see also Hunn 1990:205, 225). This seems like a sound inference, and again indicates how social structure adapts to resource characteristics although in a more general context and for other reasons related to resource abundance, polygamy is very common among successful aggrandizers in most transegalitarian communities (White 1990; Lightfoot and Feinman 1982:67; Schulting 1995:74; Hayden 1995).

The other expectable outcome of high labor requirements for the exploitation of fishing sites would be the formation of corporate groups whose male and female members cooperated to derive the maximum possible benefit from owned fishing locations, and who shared in those benefits according to their position in the hierarchy, extending from slave, to common worker, to low ranking kin, to siblings of the owner, to the titular head who inherited the actual ownership rights. Access to corporate wealth accumulated over the generations would be a great attraction of belonging to corporate groups although the highest ranking elite administrators probably exercised control over precisely how inherited corporate wealth was used. An associated problem with the formation of such groups, however, is how to minimize labor maintenance costs during low-production periods of the year when great amounts of labor are not needed (see Fei and Chang 1945).

If salmon production was the basis for the formation of these corporate groups, one might expect all individuals

who had participated in the procurement and production of salmon to stay together for the period that the stored salmon lasted, that is, to participate as a group in the benefits that their intensive group production generated. Excessive maintenance costs of the entire group throughout the rest of the year could be avoided by disaggregating into smaller independent socioeconomic groups once the bulk of the stored salmon had been consumed, invested, or disbursed by the spring. This, in effect, would account for the ethnographically observed behavior of closely related families (or archaeological residential corporate groups) staying together as a socioeconomic unit immediately after the main salmon procurement season, co-managing the large amounts of stored salmon within (and perhaps outside) corporate pithouse structures, sharing much (but evidently not all) of the salmon between members (Romanoff 1992a:247). This phase was followed by a dispersal into smaller independent socioeconomic groups in the spring when stored salmon had been exhausted. The now largely forgotten Lillooet term, "pel'uʒem," or "one family, one people, one bunch living together" (Romanoff 1971:6) seems to refer to something like this kind of corporate residential group that lived together in one house and presumably it was this coresidential group that shared rights over certain owned fishing localities (Romanoff 1971:54; Teit 1900:192; 1906:255). Desmond Peters Senior translated pel'uʒem as "one person, or whole face, or a clan," adding that each had its own crest (coyote, bear, or other), and its own watchman responsible to the chief for maintaining order.

Among the Canyon Shuswap, who lived in a salmon surplus producing region very similar to Lillooet, crest groups owned fishing sites, land, houses, trading privileges, crests, as well as collecting fees for the use of their bridges (Teit 1909:582-3). The crest groups were related hereditary families that either lived together in villages separate from other villages, or lived in houses or groups of houses within the same village, therefore meeting in every respect the definition of a residential corporate group (Hayden and Cannon 1982). At Keatley Creek there must have been at least 5-6 quite large pel'uʒem and many other more moderate sized ones in contrast to the one or two that characterized later villages (Teit 1906:252-3). The formation of pronounced hierarchical corporate groups under these circumstances parallels the increased hierarchical nature of the more northerly Coastal societies that Schalk (1981:69ff) describes. However, in contradistinction to his interpretations, it is clear in the Lillooet region that without abundant surpluses at the peaks, the constrained availability of salmon runs would not have resulted in particularly complex, hierarchical, or sophisticated cultures.

Ownership of spring salmon fishing sites and house sites around Lillooet was inherited and kept within certain families (Romanoff 1992a:242-7; 1992b:491;

Kennedy and Bouchard 1992:308; Teit 1900:294; 1906:255; 1909:582-3). The same was true at the Dalles, on the Columbia River (Schulting 1995:59-60):

Fishing stations were highly prized and passed by inheritance into the possession of a group of relatives in each generation. It was assumed by the informants that these were descendants of the original discoverer of the site. No one else was allowed to fish at a particular station without permission of its owners. Six to ten related old men might own a station in common at which their families fished. Any one among them might preempt the best place at the station temporarily. Each station had its overseer who was usually a chief or head man. (Spier and Sapir 1930:175, see also Curtis 1911:95)

At The Dalles, salmon was clearly the primary source of wealth and the key factor behind the intensification of resource procurement as well as the unusual social complexity of this region. With an analogous salmon procurement situation on the Fraser River, it seems likely that a similar cooperative and "corporate" arrangement existed aboriginally in the Lillooet region. Romanoff (1992a:247) clearly states that the Lillooet owners of fishing locations had the best supply of salmon and that the number of wealthy families was limited by the number of productive fishing sites. Teit (1900:250), too, states that fishing platforms were the most productive fishing sites. All sons inherited rights to these named sites and the sons generally lived together (Romanoff 1992a:244; Teit 1906:255). Nastich (1954:23) adds that wealthy families were multi-family units, implying that residential corporate groups were based on the ownership of productive salmon sites and their resulting wealth. It is undoubtedly those families that had inherited some claim to co-ownership of household resources (including the use and management of fishing sites) which constituted the "elite" or nobility of the house and the community. As the number of families with such claims to a single site could be numerous (up to 10 at The Dalles), it is not surprising that one half to two thirds of a household or a community might be considered as elites, as Teit (1909:576) reports. Such widespread recognition of privileges (whether based on heredity or arranged labor or both) may have been a necessary concession of aggrandizers in the early developments of hierarchical societies with privately owned resources producing benefits primarily for a restricted class of people. That is, in order to defend their claims of privilege against egalitarian demands of the majority of a community, aggrandizers would initially have had to enlist the support of a large proportion of the community by making them co-beneficiaries of the privileges. This topic is more completely discussed with ethnographic examples in Vol. II, Chap. 1 and Hayden (1997:115). These observations help

explain the high proportion of elite domestic areas in HP 7. Of course, the most active aggrandizers, the chiefs, would have benefited the most.

As the economic power of corporate groups increased, elites and their supporters undoubtedly managed to extend their claims of ownership to other resources that were highly localized and profitable for trade (e.g., eagle eyries, deer fences, hunting grounds), ultimately including, in the most developed trans-egalitarian societies, exclusive trading rights, ownership over all land, and fees for the use of bridges, or even fees for transiting through claimed territories (e.g., Teit 1909: 576, 582-3; Boas 1891:638; Dawson 1892:14; Romanoff 1992b:502; Alexander 1992:143-4; Hudson 1994; Dickason 1984; Wheeler 1990; Tyhurst 1992:399; Spier and Sapir 1930:225; Schulting 1995:53; Walker 1982:110; Marshall 1992:212-3; Ferguson 1984:286-7, 304, 314). Through advantages of wealth and the restrictions that the wealthy and politically powerful could impose on others, commoners were prevented from acquiring valuable prestige items (Jewitt 1974:60). Similar attempts were usually made to control the ideological basis of the community through ploys such as ownership of house or clan crests; ownership of masks, myths, songs, or other ritual paraphernalia; restricting secret society membership, or ritual roles to elites (Kamenskii 1985:86); and limiting powerful vision quests or other initiations to elite children (Schulting 1995:50-2; Ray 1942:235). However, as previously mentioned, when claims over resources could not be enforced or when severe food shortages occurred, all claims were always open to renegotiation and the wealthy were forced to share food and other privileges, however, not without resentment and disparagement (e.g., Romanoff 1992a: 247-8). Together with the observations already made for the Canyon Shuswap, these patterns of hereditary ownership of surplus and wealth producing fishing sites by related families forming large residential corporate groups appear to be the most plausible model for understanding the basic nature of the social and economic organization of the large structures at Keatley Creek.

The ethnographic and theoretical scenario described above is strongly supported by the archaeological remains that have been recovered from small, medium, and large sized housepits at Keatley Creek. In the poorer small housepits, and even in the medium sized housepit that we excavated, pink salmon constituted the overwhelming, if not exclusive, species of salmon present (Vol. II, Chap. 8). Only in the large housepits do significant numbers of sockeye and spring salmon remains occur. Despite the many different factors that could affect the preservation of salmon bones in housepits (Vol. I, Chap. 10 and 17), the archaeological remains strongly indicate that significant differences

did exist between residents living in different sized pithouses in terms of their ability to procure the more difficult-to-obtain and valuable species of salmon.

Differences between the residents of different sized housepits in their procurement of varying amounts of salmon are also indicated archaeologically by the much larger storage capacity per person in the large housepits as revealed by pit volume per floor area (Vol. II, Chap. 1). People in large houses had much larger storage capacity than residents of smaller houses. It is also evident that the development of hearths is much more pronounced in the larger housepits, and that densities of artifacts are much higher, although this last observation could be explained in part on the basis of differences in the number of years the last occupation floors were used in the various housepits. Nevertheless, the substantial increases in ungulate bone densities in large housepits is so pronounced and overall faunal diversity is so much higher that it seems to correspond to patterns in other, complex communities where deer remains are concentrated in high status households and overall faunal remains are more diverse in high status houses (Cleland 1965; Bogan 1983; Jackson and Scott 1992). The difference in hearth reddening is too pronounced and consistent to be satisfactorily accounted for by differences in lengths of occupation of the living floors. The lack of any evidence for occupation other than in the winter at Keatley Creek is yet another indication of the congruence between the ethnographic/theoretical model and the archaeological model, as is the apparent hierarchical internal arrangement of domestic units within the larger housepits (Vol. II, Chap. 1).

Finally, as in the ethnographic examples previously cited, the archaeological analysis of the distinctive types of cherts used by residents in each of the major housepits at Keatley Creek (Vol. I, Chap. 16) provides compelling evidence that the residents formed an enduring corporate group with economic privileges extending beyond the simple ownership of the best salmon fishing locations, and certain house sites. Exploitation rights seem to have extended to specific mountain resource areas used by the constituent families of a residential corporate group in the spring, summer, and fall, as well. This implies ownership not only of the chert sources, but also of geophyte food patches and probably hunting areas. In fact, Dawson (1892:14) states that in former times Shuswap families owned hereditary hunting grounds. Archaeologically, ownership of resource areas in other transegalitarian communities in the Northwest has been demonstrated for coastal communities such as Ozette (Huelsenbeck 1994:91; Wesson 1988:196-8;1994). Moreover, archaeological results from Keatley Creek indicate that large corporate groups retained their identity, their rights to resource locations, and ownership over their winter

house locations over many centuries and possibly as long as 1,300 years (Hayden et al. 1996). I would submit that only corporate groups which were powerful and large and exerted control over unusually lucrative resources could have maintained this kind of continuity over such long periods.

Some of these archaeological inferences are supported by ethnographic observations. For instance, house sites were generally owned and inherited by corporate residents or their titular heads (Teit 1900:294; 1909:582–3; Romanoff 1992b:491). As previously documented, salmon fishing locations were owned and inherited (a proposition expressed earlier for the prehistoric Lillooet communities by Stryd 1973:102). Other evidence points to some differences between ethnographic and prehistoric socioeconomic organization, such as the sheer size of the prehistoric residential corporate groups, the degree of hierarchical ranking within them, and the apparent extension of privileged access or ownership to specific mountain resource locations. These archaeological indicators suggest that some factor was responsible for greater degrees of resource control (including control over mountain hunting grounds) and of surplus production at Keatley Creek than were typical of ethnographic times. One possibility might be that elaborate rope and scaffold technology was required to exploit the potentially productive fisheries at the Camelsfoot constriction, and that considerable wealth, labor, and/or managerial organization was necessary to underwrite the construction of these kinds of facilities. Presumably, only the larger, more powerful corporate groups would have been able to support such undertakings. Landslides over the last 1,000 years may have subsequently altered the rock formations at the Camelsfoot constriction so as to render them much more difficult to use for any kind of salmon fishing.

In sum, theoretical considerations, actual evaluations of the resources available, ethnographic observations, and archaeological data, all point to the same basic conclusion: the formation of large residential corporate groups was a major socioeconomic development that depended upon the ownership of highly lucrative salmon fishing locations although the prehistoric manifestations of these corporate groups seem to have been larger and perhaps more powerful than those recorded historically. Salmon was used for the group's subsistence needs, and surpluses were used on a regular basis to generate wealth and social hierarchies. Exactly how surpluses were used for these purposes is the topic of the following section. At this point, it is worth iterating that the basic conclusion concerning the factors responsible for the development of large residential corporate groups is one of the soundest, most certain results that the FRICGA project

has achieved. Its support by multiple lines of investigation make it particularly robust.

## The Uses of Surpluses to Create Complexity

The following discussion is somewhat less certain than the previous one, given the current debates about the mechanisms by which socioeconomic complexity emerges in traditional societies. Nevertheless, in order to understand more about the socioeconomic organization within pithouses at Keatley Creek it was necessary to grapple with models and questions of mechanisms responsible for complexity. I did this over a number of years by examining a range of transegalitarian ethnographies that illustrated how strategies used by ambitious aggrandizers changed as levels of surplus production changed (Hayden 1995). The most complete set of data was derived from the New Guinea Highlands which range from very poor resource areas with very low surpluses and low population densities in the east (generally thought to have been hunter/gatherers until recently) to highly productive communities in the west with long histories of food production surpluses, high population densities, and competitive feasting. The western societies with competitive feasts have often been compared with Northwest Coast potlatching communities (e.g., Mauss 1924), while the poorer eastern New Guinea communities might be compared to the poorer hunter/gatherers on the Plateau such as those in the Chilcotin. I undertook the comparative ethnographic study specifically so that I could situate the Keatley Creek prehistoric community along a developmental continuum related to surplus production in order to understand what kinds of strategies and socioeconomic organizational principles were probably being used by aggrandizers at Keatley Creek. The result is somewhat provisional and tentative; however, I have found it to be a useful tool and I summarize the results here as a step in the ongoing process of interpretation.

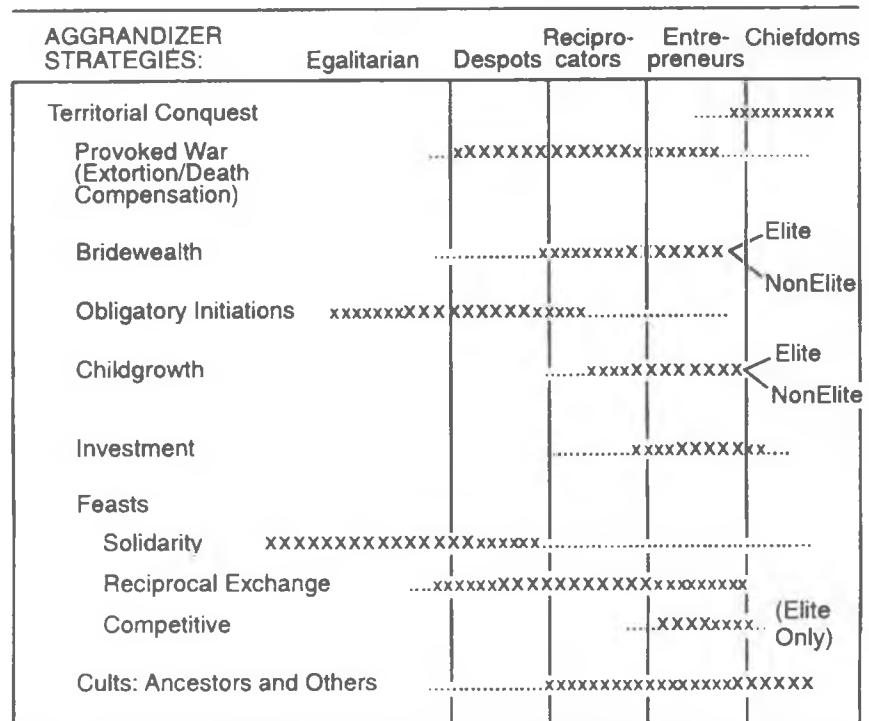
My overall comparative results are summarized in Figures 3 and 4 and Table 1. For ease of reference, I have divided up the continuum into three rough stages representing increasing levels of surplus production and major changes in aggrandizer strategies that accompany these increases. I have changed the labels that others have used to refer to similar stages of complexity, largely because of a shift in theoretical perspective, but also because of differences in the defining criteria used for these stages. The stages I use are: *Despots* (roughly equivalent to the "Great Men" of New Guinea), *Reciprocaters* (roughly equivalent to "Head Men" or "Leaders"

in New Guinea), and *Entrepreneurs* (roughly equivalent to the most complex "Big Men" in New Guinea). The following capsule summaries are derived from a much more lengthy treatment (Hayden 1995) which should be consulted for more complete details.

While the forms of social and economic organization to be discussed seem to be the most common at given levels of surplus production, it is worth emphasizing that they are not apparently the only developmental sequences that emerged. For instance, complexity appears to have developed in the Near East with no significant levels of violence occurring until well after the emergence of complex communities. Many of the concepts about aggrandizers that proved most useful were articulated by Marvin Harris over a number of decades. He emphasized that aggrandizers (Big Men) were important agents in the intensification of production, in redistributing goods via trade or feasting, and in the waging of war for self-interests. D'Altroy (1994) has documented many of the same characteristics to be discussed below in South American tribal communities.

**Table 1. Archaeological Consequences of Transegalitarian Aggrandizer Strategies**

| Strategies                        | Archaeological Manifestations   |
|-----------------------------------|---|
| Provoked war                      | Fortifications<br>Trauma and violent deaths<br>Armor                                      |
| Bridewealth                       | Surplus-based reidential corporate groups<br>Rich female burials<br>Female cult figurines |
| Child growth                      | Rich child burials  |
| Investment exchange               | Regional exchange<br>High volume of prestige goods<br>Craft specialization                |
| Ancestor and other cults          | Shrines and public ritual architecture<br>Burial shrines                                  |
| Reciprocal and competitive feasts | Feasting-related facilities and structures<br>Domesticates<br>Prestige food vessels       |



**Figure 3. Proposed major strategies used by transegalitarian aggrandizers and changes in strategies with increases in surplus levels.**

### Despot Communities

When the ability of most families to produce surpluses is marginal and unreliable, ambitious aggrandizers have considerable difficulty convincing anyone to agree to contractual debts or promissory obligations to provide surpluses for future events. Individuals are simply unwilling to take the risk of having to default on contractual debts or having to give up valued possessions as a result of defaulting. Under these circumstances, aggrandizers who want to foster surplus production by others in the community, in order to control and benefit from community surpluses, must adopt strategies that compel other community members to participate. The two strategies that most consistently appear are community defense and community rituals. By taking advantage of, or even by provoking or concocting real or imagined threats to community safety, aggrandizers can motivate every family in a community to participate in actions that are apparently in their own self-interest. By linking adequate defense to the acquisition of good allies, and by linking the acquisition of good allies to reciprocal feasting and gift-giving, ambitious Despots can essentially extort surpluses from families ostensibly for the safety of the community. The more lavish the feasting and gifts, the better the quality and reliability of the allies.

As MacDonald and Cove (1987:vii) have noted, trade and warfare co-evolved prehistorically on the Northwest Coast. It should come as no surprise to find



### Most Common Changes in Archaeological Traits in Transegalitarian Communities

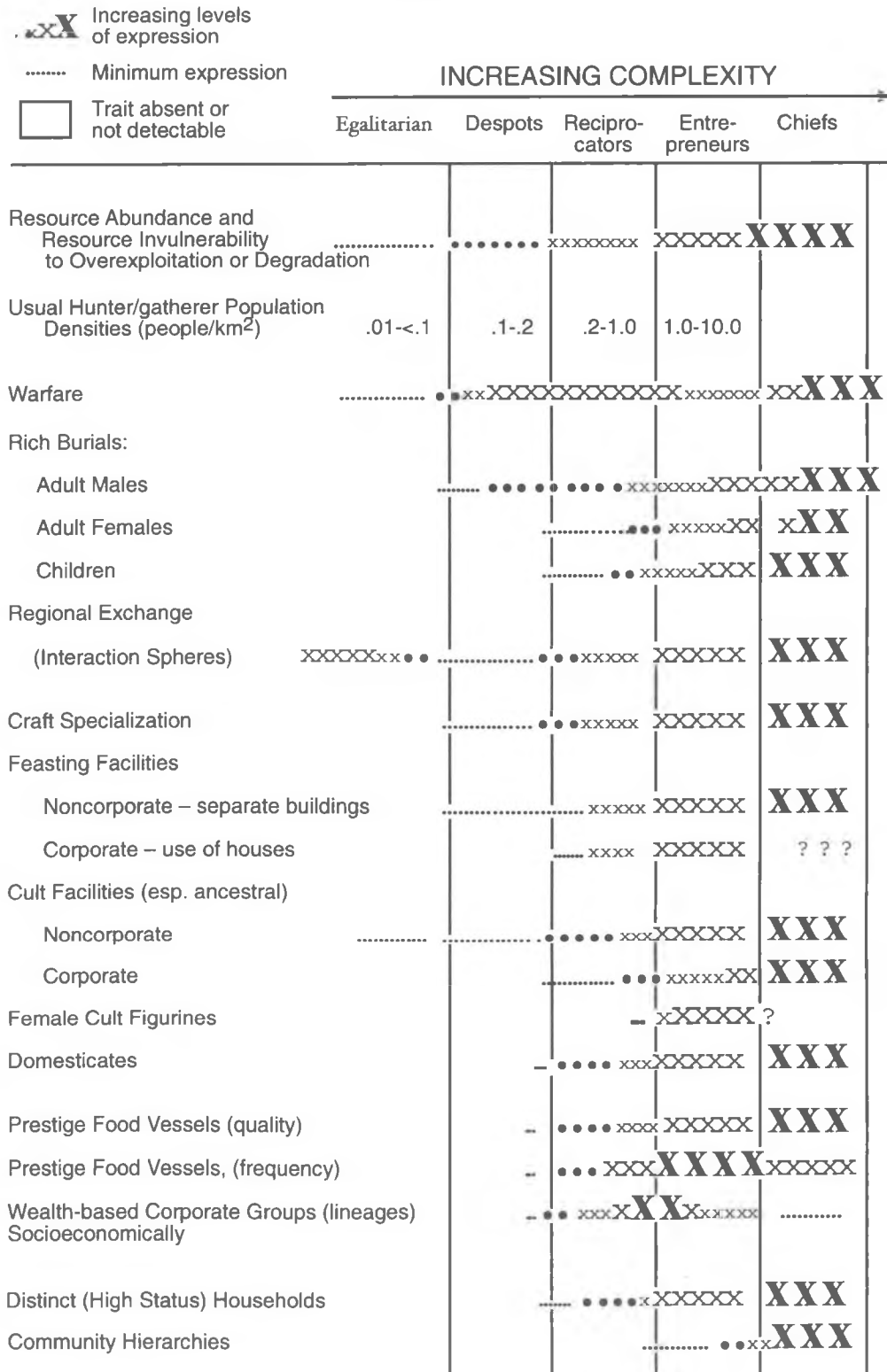


Figure 4. Comparisons of material and other cultural trait trends proposed for egalitarian to chiefdom societies.

that aggrandizers are the ones that often provoke wars as well as arrange feasts for allies. Similarly, when it is in their interests to establish peace, it is the aggrandizers that are involved in the peace negotiations, and who suggest establishing peace by means of feasts and death compensation payments to both enemies and allies for their losses. Such payments, of course, require the production of substantial surpluses that would be handled by aggrandizers on behalf of the community. Similar manipulation of wars by leaders for their own benefit has been documented among tribal groups in South America by D'Altroy (1994).

Cult festivals occurring every few years also begin to appear in Despot societies. These are supposedly held for community fertility or to deal with other crises in community affairs. Each family pledges to provide a significant amount of surplus and/or ritual paraphernalia for the festival. It is again the aggrandizer who orchestrates the use of these surpluses and wealth, and who, one presumes, benefits most from them, perhaps using the justification of having done all the organizational work and having incurred various necessary costs.

Archaeological indicators of Despot societies include unusually high incidences of violent deaths and other indications of frequent warfare; very limited evidence of surplus production or storage; relatively low population densities (ca. 0.1–0.5/km<sup>2</sup> for complex hunter/gatherers); small community sizes (50–200 people); rare prestige items or regional exchange items; limited evidence for pronounced socioeconomic inequality in housing or grave goods; low status for women and children (reflected in grave goods); and limited or even no evidence for special feasting/ritual structures, food preparation vessels, or serving paraphernalia.

While Despot societies may not constitute a universal step in the evolution of transegalitarian societies (levels of violence seem to be unusually low in the Levant until the Bronze Age), they are extremely common. Despot types of societies are known from the eastern Papua New Guinea highlands, the Amazon basin, the earliest complex cultures of the California and Northwest Coast, plus the European and Nubian Mesolithic. Given the proximity of the Northwest Plateau to the Northwest Coast as well as the ethnographic occurrences of Despot societies on the Plateau where Dawson (1892:25) observed that warfare was constant and that the most northern Shuswap groups were the most warlike. Traditional stories of warrior despots also came from the Shuswap area (Teit 1909:557–9, 561–3) with noted warriors becoming “chiefs” (Teit 1909:696, 731). Pretexts also existed for maintaining climates of hostility, such as the practice of killing an enemy or stranger after the

natural death of a father, brother, or son (Teit 1900:335; 1909:594). Among these groups and similar groups noted for warfare such as the Nicola, Cree, Sekani, Chilcotin, and Tutchone (Teit 1909:470–1, 540, 550; Wyatt 1972:183–4), feasts were rare and limited in variety, potlatching was unknown (Teit 1909:569, 574), and wealth was rare. There was no system of nobility, clans, special societies, or crests (Teit 1909:570). Mobility was much higher than other Plateau groups, and although there were some surpluses and wealth, all resources were communally owned (Teit 1909:572). This closely follows the New Guinea pattern of emergent complexity where surpluses were least abundant or reliable (see Hayden 1995), and forms a clear pattern on the Plateau as surpluses decrease in magnitude toward the headwaters of the major river systems (see Bussey and Alexander 1992). Conversely, as surpluses progressively increase as one descends these river systems so does complexity, feasting, and exchange. Thus, it seems likely that early complex cultures on the Plateau were also of the Despot variety. However, not enough archaeology or burial information is available from the relevant (early Shuswap) horizon to affirm this with any certainty.

## Reciprocator Communities

Surpluses are considerably more abundant and reliable in Reciprocator types of communities, at least to the extent that household heads feel confident that if they accept surpluses from others, they will be able to pay back the loan in the future on at least equal terms. Household heads are therefore willing to enter into reciprocal contractual loan agreements and promissorial agreements of support. This, in turn, fuels the holding of reciprocal feasts on a larger scale. Such reciprocal feasts are used by Reciprocator aggrandizers to boost surplus production, to create a system of contractual debts, as well as to control or manage the surpluses and wealth involved in feasting. As a result, prestige and regional exchange items become more common; some special feasting structures begin to appear together with specialized feasting paraphernalia (special serving bowls, food processing vessels, and cooking facilities); and special labor intensive feasting foods are introduced. These new strategies for concentrating wealth and power in the hands of aggrandizers are *added to* Despot strategies; they do not replace Despot strategies.

Readers of ethnographies often get the impression that influence in communities comes simply from giving wealth away with no return expected and no obligations incurred. However, there are enough people with short memories of favors done, to make this scenario a highly unlikely means of acquiring either social status or political influence. As Helms (1994:56)

notes for Central American chiefdoms, people wanted to acquire gold without having to obey the distributors. People are rarely motivated to be faithful to benefactors unless there is a clear prior agreement or unless they know that they are likely to obtain future disbursements in exchange for support. The classic ethnographic portrayal of status and influence accruing to people simply because they give away their wealth is misleading at best. In order to acquire influence by giving away wealth, there must be a system in place which involves the recognition of obligations at some level (e.g., the creation of debts) on the part of the receivers, although it is also clear that some gift giving at feasts is for purely advertisement purposes to attract good personnel, or for social bonding or other purposes, and that in these cases, no return is expected (compare D'Altroy 1994). As Kamenskii (1985:48) and other ethnographers have observed:

In theory gifts are voluntary, but in fact they are given and repaid under obligation . . . Prestations which are in theory voluntary, disinterested and spontaneous, but are in fact obligatory and interested, . . . The form usually taken is that of the gift generously offered; but the accompanying behavior is formal pretence and social deception, while the transaction itself is based on obligation and economic self-interest. (Mauss 1924:1, 73)

All households participating in this feasting and loan system can be expected to own special ritual/feasting paraphernalia such as special bowls, pipes, or other items associated with the conduct of feasting and the establishment of contractual agreements. Many Reciprocators also adopt a new strategy of investing their surpluses in their marriage partners and their children. Reciprocators use wealth to obtain more marriage partners as well as more productive marriage partners who in turn will assist them in producing more surplus food or prestige items. Reciprocators begin to pay for costly maturation ceremonies or training for their children so that upon marriage, larger marriage payments will be made to the aggrandizive parents or so they can marry into wealthy and powerful families. Warfare and community cults continue to be important strategies that are used to promote the production and surrender of surpluses, but warfare declines in its predominance as more effective strategies come into play.

Archaeologically, Reciprocator communities can be identified by their larger communities; higher population densities (ca. 0.5–2.0/km<sup>2</sup> for hunter/gatherers); increased evidence of food storage or rich resources; construction of initial feasting/ritual structures; the greater occurrence of prestige items, regional exchange items, feasting paraphernalia or

facilities; the occurrence of labor intensive foods in low proportions to overall subsistence staples, possibly including the first domesticates; intensification in subsistence production; increased socioeconomic differentiation in burials and perhaps housing; and occasional high value of women and children due to their enhanced marriage value as reflected in burial goods. In addition to the New Guinea examples, Reciprocator communities probably include the majority of the ethnographically known Plateau groups such as nearly all of the Thompson Indians and many of the Shuswap communities. Teit (1900:267, 270) commented that raids and warfare were very frequent before the fur trade and that men were always armed and ready for attack, even while eating. Moreover, high prices were required to settle killings (Teit 1898:65). Slavery, which is uncommon in Reciprocator communities, may have only become common for most groups as a result of population losses from European introduced diseases and the need to maintain adequate numbers of productive adults (Mitchell and Donald 1985:31). On the other hand, acquiring wives by raiding and abduction is common among Reciprocator communities and is also a common theme in Salish myths and stories (Teit 1898, 1912a, b, 1917).

Among most Plateau groups, the criteria for "chiefs" was essentially identical to characteristics of Head Men in New Guinea (Modjeska 1982): wealth, giving feasts, liberality, good oratory abilities, charisma, and good abilities in warfare (Teit 1900:289; 1906:255). Such criteria do not even change in many more advanced chiefdom societies such as the Maori of New Zealand (Urry 1993:21,23,63). In both areas, one of the most important functions of "chiefs" and Head Men was as peace negotiators (Bouchard and Kennedy 1985:62), a position they probably maneuvered themselves into and used to further their own self interests. They used peace making as compelling reasons for obtaining materials for feasts (Teit 1909:659,664). As in New Guinea, there was a wider diversity of feasts than among Despot communities (Teit 1900:296–8), concurrent with increases in food resource abundance and population density as one descended the river systems. As in New Guinea Reciprocator communities, women in Northwest Reciprocator communities had little voice in councils or matters of importance (Teit 1900:290). While the Despot strategies may not have been used universally, as communities became more complex, it seems far more likely that most, if not all, trans-egalitarian communities throughout the world adopted the most common Reciprocator strategies during the course of their evolution into increasingly complex societies.

## Entrepreneur Communities

The potential for producing surplus resources in Entrepreneur communities is so great compared to previous levels of organization that household heads apparently felt relatively confident that they could return the initial amount borrowed from someone plus an agreed upon increment, or interest payment, for the use of those resources. This is one of the hallmarks of Entrepreneur strategies, i.e., the use of surpluses for investment loans which brought in more than was loaned out. Typically the major constraint on production is labor and the willingness to produce surpluses. Once again, aggrandizers could appeal to the self-interest of other community members to increase their own wealth and power by producing as much surplus as possible and loaning out this surplus (to Entrepreneurs or others). The result was the classic potlatch and moka systems described in the ethnographies and often compared to each other by ethnologists (e.g., Mauss 1924).

These feasting and exchange systems involved far larger amounts of surplus than previous ones. In fact, surplus often became so cumbersome that it had to be converted into prestige items. Prestige products proliferated together with craft specialization and regional exchange. Marriage became one of the principal avenues of establishing ongoing investment exchange relationships, and investing in children became a major means of increasing the quantity of goods exchanged at marriage. The value of children could be augmented by a long series of costly maturation ceremonies or training, extending from birth, to naming, to tattooing, to piercing, to initiations, to first hunts, to puberty—all calculated to be a means of investing surplus wealth for later exchanges. Marriage and ultimately funeral payments were simply extensions of this same logic and marriages were frequently contracted by family heads, even for infants or pre-adolescent children (McIlwraith 1948:384; Swanton 1975:50; Boelscher 1989:117; Emmons and de Laguna 1991:267). As Swanton (1975:68) noted for Northwest Coast Entrepreneur societies: "Property counted for more in making these matches than any other consideration." And McIlwraith (1948:423) states that "Marriage ceremonies resemble more of business transactions." As a result, women's and children's statuses were frequently much higher than in other transegalitarian community types. As the value and status of women in wealthy and powerful families increased due to their value in marriage exchanges, labor and fertility becomes of such concern that special female fertility cults emerge (that even barred women members in some cases!). Women could even hold potlatches of their own and possibly assume the position of "chief" in special circumstances (see below).

Warfare, while not eliminated completely, tended to interfere with investments and exchange, and therefore decreased significantly in importance. In the Plateau ethnographies, warfare is always least frequent in communities that were central to exchange and where feasting was most frequent and diverse such as among the Lillooet, the Canyon Shuswap, The Dalles Wishram, and the Kettle Falls Okanagan (Teit 1906:236; 1909:470–1, 535, 541, 556; Cannon 1992; Schulting 1995:59, 65). Teit (1909:541) even states that war was not important for the Canyon Shuswap "because peace . . . was requisite for their valuable trading interests." As in New Guinea, blood feuds (which persisted in the Interior even after European influences eliminated tribal warfare—Teit 1900:270) were common, and were ended by gifts, marriages, feasts, and wealth exchanges (Teit 1906:236, 247, 255; 1909:659, 664). The Entrepreneur aggrandizers who brokered these transactions (including "chiefs," and Big Men) had the same suite of characteristics as their Reciprocator confreres (wealth, apparent generosity, oratory, charisma) and undoubtedly used these characteristics to insinuate themselves into important positions of power such as peace negotiators, where they could increase their own influence, power, and wealth.

By transegalitarian standards, extreme socioeconomic inequality characterizes Entrepreneur communities, whether in the form of indebted servants to Entrepreneurs, slaves, or control over trade. Slavery is surprisingly common among Entrepreneur communities, occurring among Northwestern Alaskan, Northwest Coast, Northwest Plateau, Ainu, and Calusa communities (Donald 1997; Hayden 1995; Marquardt 1991:70). Despite considerable variation in sizes, communities remain largely independent and do not exhibit the full chieftdom constellation of traits involving true monumental architecture, control by one community over another, or site hierarchies. Although, as in the case of Keatley Creek, bimodal site size distributions do seem to occur for as yet undetermined reasons and modest monuments do occur in some areas.

Ethnographically, Entrepreneur communities include the western highland groups of Papua New Guinea, and virtually all the Northwest Coast communities. Archaeologically, these groups can be recognized by high population densities (2–10/km<sup>2</sup> for hunter/gatherers); larger settlements; evidence of rich resources and stored surpluses; a somewhat lower incidence of warfare; increased regional exchange and prestige item production; specialized feasting structures, paraphernalia, facilities, and foods; pronounced socioeconomic inequalities in burial goods and housing; and occasional high status of women and children reflected in burial goods. Some of the more complex historic Plateau communities such as those at The Dalles, those

around Lillooet, and the Canyon Shuswap were probably Entrepreneur types of societies. All of these groups had social classes with hereditary nobles and slaves. Corporate groups owned resource sites producing substantial amounts of surplus and wealth, which were used in reciprocal and competitive feasts. Child growth and maturation feasts were highly developed together with great emphasis on wealth exchange particularly in the context of marriage payments. Polygyny and specialized training featured prominently among all these elites together with privileged claims to supernatural power. Finally, warfare was notable by its reduced importance. Whether Keatley Creek was an Entrepreneur community prehistorically will be discussed next.

However, first, it should be recognized that communities organized into residential corporate groups exhibit slightly different characteristics in terms of the above developments from communities organized on the basis of independent nuclear family households. With residential corporate groups, most feasting occurs within the corporate residential structure so that there is no need to construct special edifices within the community for such gatherings. On the other hand, some cult related structures might be expected to occur such as those recorded on the Coast (Walker 1982:121), but probably on a small scale. Moreover, I suspect that hierarchical social stratification and power may be more pronounced within residential corporate groups than in communities with largely independent nuclear households. This may entail consequences for relative production of prestige items, socioeconomic differences, and sometimes even corporate monumental architecture. With these considerations in mind, it is now possible to examine Keatley Creek and other settlements of the Classic Lillooet culture in order to determine what evidence is present for the various strategies mentioned above and depicted in Figures 3 and 4.

## Conclusions: The Transegalitarian Position of Keatley Creek

Stryd (1973:90) and Sanger (1971:255) both suggested that there was greater socioeconomic stratification in the large prehistoric Classic Lillooet and other Plateau communities than existed in the region during the ethnographic period. Such suggestions have never been assessed in a systematic fashion and are worth re-examining at this point.

Although ethnographies and accounts of fur traders from the early historic period mention large fortified

settlements in the Lillooet region (Lamb 1960:80–82; Teit 1906:235–6, 239), there is little prehistoric evidence of warfare. No fortified winter settlements have been reported, and no large summer or fall fishing sites have been excavated. It is predominantly the summer fishing sites which may have been most vulnerable to attack since it is at these locations that the greatest concentration of surplus food and prestige items was to be found. No overall assessment of levels of violence can be made given the few prehistoric burials that have been recovered from the Lillooet region and the lack of information on skeletal trauma from excavated burials elsewhere on the Plateau (see Schulting 1995). Rick Schulting (personal communication) estimates that the few existing observations of violent trauma entail only about 5% of the relevant collections, although no systematic study of violent trauma has ever been undertaken.

In fact, the fortifications recorded by Teit and Simon Fraser may have been the result of the prior introduction of European industrial trade goods, horses, and firearms which, in the earliest phases of contact, seem to have markedly increased competition, violence, and complexity among other Interior groups (Goldman 1940:334–7; Bishop 1987; MacDonald and Cove 1987:ix; MacDonald 1989:18; LeGros 1985; Gibson 1988). On the other hand, as already noted in the discussion of Entrepreneur communities, the Fraser River Lillooet and the Canyon Shuswap were clearly disinclined to war, as was also true of the other major salmon surplus producing communities on the Plateau. As in the case of New Guinea Entrepreneur societies, this certainly must have only been a relative assessment since stories of raids and warfare are hardly lacking for the Lillooet groups. Elsewhere on the Plateau, as would be expected of Reciprocator and Despot communities, it is clear that warfare was much more prevalent despite Ray's views on the peaceful nature of Plateau society (see Cannon 1992; Kent 1980; Suttles 1981; Bouchard and Kennedy 1985:34, 58–61).

The tendency to avoid conflict, together with the fact that the Lillooet region produced the greatest amounts of surplus salmon for trade of any Interior fisheries in British Columbia, makes it seem unlikely that the Keatley Creek community was organized according to Despot principles and strategies. Even the fur traders at Fort Kamloops traveled to Lillooet to procure most of the dried salmon that they required to last through the winter (Kennedy and Bouchard 1992:319) each fort on the Fraser River required 25,000 salmon according to Drake-Terry (1989:26). In fact, traders from Yakima in Washington State came to Lillooet apparently for the same purpose as well as to exchange prestige items (H. Smith 1910:144), while Lillooet and other Plateau elite made the "10 night" trek to the coast to trade and to obtain wives (Lamb

1960:79; Nastich 1954:20; Kennedy and Bouchard 1992:319; Schulting 1995:53). They even drew maps for Simon Fraser of the route between Lillooet and the Coast. The Upper Lillooet and the Canyon Shuswap were the greatest traders (Teit 1909:535, 536). The Lillooet salmon was abundant; it had an optimal fat content since it was not too close to the sea nor too far up the drainage where exhausted salmon often became like cardboard; and the salmon at Lillooet was dried under optimal conditions due to the hot winds of the region. The Lillooet region was also situated on the principal communication corridor with the Coast (via Seton and Anderson Lakes, and thence down the Lillooet River to Harrison Lake and the Fraser River tidal zone—Nastich 1954:15, 20; Teit 1909:536). All these factors must have made the prehistoric Lillooet communities powerful and wealthy and highly desirable as exchange partners for other elites.

In addition to the regular production of large surpluses and the relative disinclination to violence, Keatley Creek and other Classic Lillooet communities display considerable capacity for the storage of food in large subterranean caches, and additional storage can be assumed to have existed both in pithouse rafters and as exterior above-ground caches (Alexander 1992; 129–32; Vol. II, Chap. 2). Population densities and community sizes were correspondingly high, with 1,200 to 1,500 people residing at Keatley Creek and a population density of 2–3 people per square km (Vol. II, Chap. 2).

There is considerable evidence for regional exchange in the form of dentalium and other shells from the coast (330 km to the west), moose antler from Prince George (460 km to the north), obsidian from Anaheim Lake (430 km to the northwest—Stryd 1973:46), and Fraser River nephrite recovered archaeologically from the Rocky Mountains and the Columbia Plateau (Darwent 1998). These items constitute prestige goods which Lightfoot and Feinman (1982:67) argue reflect the development of leadership. Trachydacite from the Keatley Creek/Cache Creek region has also been identified in some abundance in the North Cascades park in Washington State, while two pieces of greenish agate at Keatley Creek probably came from Idaho or the Hosamine chert source in the Ross Lake region of Washington State (Ed Bakewell, personal communication). The list of trade goods ethnographically brokered on the Plateau is extensive (Teit 1900, 1906, 1909), and exchange of prestige goods was carried out predominantly, if not exclusively by elites who attempted to monopolize exchange activities whenever possible. They were successful predominantly in regions that produced large surpluses such as The Dalles, Lillooet, and Farwell Canyon (the Canyon Shuswap—Teit 1909:535, 576, 582; Spier and Sapir 1930:225; Schulting 1995:53).

These exchange activities created a unified elite social fabric across the Plateau (Hayden and Schulting 1997) with a common trading and elite interaction languages such as Chinook and possibly the “high” languages of the elites. Desmond Peters Senior told me that only chiefs like Sam Mitchell and Baptiste Richie knew the Lillooet high language. This language was spoken among the chiefs and was used in important addresses. Hudson (1994) reports a similar high language among the Okanagan, and one also was used among the elites on the Coast (Berman 1994:504–5). One of the functions of the chief’s mouthpiece reported by Ray (1942:229), may have been to translate speeches made by chiefs in high languages to event spectators. Elite high languages appear to be increasingly common features among chiefdoms and early state levels of organization. Chinook was spoken best by the Lillooet who were renowned for their trading activities and the multilingual abilities of their traders (Drake-Terry 1989:42; Teit 1906:202, 231–2). Wood (1980) has referred to this integrated network as the Pacific-Plateau trading system, and Rick Schulting and I have called it the Plateau Interaction Sphere (Hayden and Schulting, 1997).

Salmon played a special role in this exchange system because it was so critical for the survival of many of the groups without access to prime fishing locations (Cannon 1992). As already noted, the Lillooet region produced the highest quality dried salmon in British Columbia, and Lillooet producers obtained the highest exchange rates (Teit 1906:232). While Lillooet was clearly the primary salmon producer on the British Columbia Plateau, it appears to have been far surpassed by salmon production of its homology at The Dalles, on the Columbia River. The Six-Mile fishery (The Fountain) at Lillooet produced 40,000 salmon in good years before the serious disruptions of 1913 (Romanoff 1992a:246; Kennedy and Bouchard 1992:300–1, 315). In contrast, Lewis and Clark saw 10,000 pounds of stored dried salmon at The Dalles in 1805 (Spier and Sapir 1930:178–9), while Hunn’s (1990:133) graphs indicate catch rates of 100,000 pounds per day at The Dalles in historic times, which seems scarcely credible. However, accounts of the first commercial fish wheels established at The Dalles in the 1890’s tell of how the cost of one \$80,000 mechanism was recovered in a single day of operation (David Cole, personal communication). In short, by all accounts, The Dalles was producing salmon surpluses on a far grander scale than can be imagined for the Lillooet region, and as might be expected, the ethnographic and archaeological evidence portrays considerably richer, more complex cultural developments at The Dalles—an archaeological loci that has been systematically looted by art collectors for generations (Schulting 1995).

Just as English is the world trade language of today because the United States is the foremost trading power, it is certainly no coincidence that the pan-Plateau trading language was Chinook, the indigenous language of The Dalles region. Prehistorically, salmon production in the Lillooet region was almost certainly substantially greater than that recorded by Euro-Canadians in the early 1900's. Not only had placer mining, competitive salmon canneries, deforestation, damming, and other industrial activities adversely affected the Fraser River salmon runs by the turn of the century (Hayden 1992a; Drake-Terry 1989:47, 56, 72; D.S. Mitchell 1925), but prehistorically residents of Keatley Creek relied to a significant degree on pink salmon which are almost unknown historically in the region. Thus, prehistoric salmon production must have been considerably greater at Lillooet than the historical records indicate, although total production was undoubtedly still far below production at The Dalles.

The unusually labor intensive manufacture of nephrite adzes in the Lillooet region is not only an indication of prestige good manufacturing, but may be an indication of indentured or slave labor in the region. Slaves were reported ethnographically (see below) and occurred in even greater numbers at The Dalles (Spier and Sapir 1930:22). Other prestige goods recovered at Keatley Creek include antler digging stick handles, incised bone plaques or pendants, bone buttons, dentalium and other coastal shells, raptor and loon wing elements, bear claw elements, stone pendants and eccentrics, soapstone pipes, rolled copper beads and sheets, graphite, serpentine sculpture, sculpted mauls, mica fragments (see also Stryd 1973:404; Teit 1909:650), and other items (Vol. II, Chap. 13). See Stryd (1973) for comparable materials excavated from the neighboring contemporaneous Bell site including quartz crystals, pecten shell rattles, bone and stone sculptures, and other items.

There are clear status and wealth inequalities in the Keatley Creek and other Classic Lillooet communities. There are major differences between small, poor houses and large houses in storage capacity, prestige items, overall intensities of economic activities, the intensity of firewood use, and the hierarchical arrangements of domestic groups (Vol. II, Chap. 1). Storage capacity and household size are both related to developing inequality in transegalitarian societies according to Lightfoot and Feinman (1982:66–7) who observe similar developments in pithouses of the American Southwest. Although we encountered no human remains at the Keatley Creek site, elsewhere in the Lillooet region and at analogous locations on the Plateau, there are substantial differences between burials in terms of the value of grave inclusions indicating substantial development of inequality (Schulting 1995; Pokotylo et al. 1987; Stryd 1973; Sanger

1968). Moreover, children were sometimes buried with unusual amounts of wealth (e.g., the child buried with several sculptures and 246 dentalium shells inside a housepit at the Bell site—Stryd 1973:426).

At other major centers on the Plateau, women were buried with the same basic range of prestige grave goods as men (Schulting 1995), and there are indications of female cults such as "She Who Watches" at The Dalles. The comparatively high status of women evident in the archaeological record is paralleled in the ethnographic accounts of the major salmon surplus producing centers. As is consistent with the increased importance of marriage exchanges among Reciprocator and especially Entrepreneur communities (Hayden 1995; Teit 1906:240), noble women had almost the same status as men (Teit 1909:576, 578), participating in dance societies and even holding potlatches and becoming "chiefs" under special circumstances (Teit 1906:255). The bilateral descent of the Lillooet (Teit 1906:252) also makes sense in terms of using marriage as a primary means of exchanging wealth.

Despite these observations, as in the most complex New Guinea societies (Modjeska 1982) women were rarely on a full par with men within any given rank. Women did not generally occupy the most important positions of power and did not generally play prominent roles in public life. For instance, on the Coast, although women were not generally abused and might control considerable trade and might have high status as individuals, no notice was generally paid to them and they were often betrothed by the age of seven or eight. Women often were in servile conditions, working while men lounged or participated in feasting or public events (Sproat 1987:49, 68, 83; Walker 1982:47, 84; Jewitt 1974:55,109; Kamenskii 1985:30, 34). One woman who refused to have sex with her husband even had part of her nose bitten off (Jewitt 1974:109). In the Lillooet region, women ate last of all the adults in feasts (Romanoff 1992b:477) and ethnographers (Teit 1898:75, 80; 1912a:279, 361; 1912b:298, 307, 320, 328, 336, 338, 344, 356, 366; Boas 1898:3) frequently refer to chiefs or parents or brothers "giving" daughters to special men as wives or receiving women for wives as great presents in regional oral histories. The idea of women being given husbands in this fashion seems to have been unheard of. As a counterpoint, a man could lose his wife and children by using them as stakes in gambling (Teit 1912a:375; 1912b:338–9). According to Ray (1942:229), women were never chiefs anywhere on the Northwest Plateau except among the Lillooet and even then only under exceptional circumstances. Women, in general, did not fare well in work, either. Among the Shuswap, Simon Fraser observed that "women are much accustomed to laborious work" while the men did not carry anything heavy (Lamb 1960:140–1). Teit

(1917:37) recorded similar behavior among the Thompson. Thus, all in all, women's status was not particularly high, although under special circumstances elite women could sometimes assume roles as important as men.

Relatively small and presumably rather exclusive cult structures may exist at Keatley Creek on the upper terraces in the eastern part of the site. This must still be verified. Evidence for feasting includes rather large food preparation areas such as the roasting area near HP 7 (EHPE 2), the roasting features near the presumed cult structures (EHPE 12), and a large roasting structure near the creek itself (EHPE 20). Outside food preparation areas for feasts seem to be quite common occurrences in transegalitarian communities (e.g., Blake 1991:38–40, 44). Inside the large housepits such as HP 7, central areas are cleared of most ordinary debris and often have fine silt flooring which may have been natural but incorporated as important features in choosing pithouse locations and orientations. Grant Keddie (personal communication) recorded an oral account of large housepits being used for dancing and feasting and fine silts being brought in to spread on the floors for these purposes. Pithouse like structures in other culture areas generally have a portion of the floor reserved for "sacred" purposes (e.g., Bowers 1965; Wilson 1934), and generally, sacred areas are opposite household entrances (Vol. II, Chap. 1).

A number of faunal remains also indicate the existence of ritual dances presumably performed in pithouses in the context of feasts, much like the potlatch ritual dances of the Coast. These faunal remains include wingbones of raptors, extremities of bears, bones of furbearers, and antlers that have been sawn and tapered as if to fit into a headdress although they could have been hafted for practical purposes as well. Ethnographically, groups used parts of ancestral totemic animals or power animals in dances, including bear claws and deer antlers (Teit 1906:257; 1909:578). While special serving vessels and other paraphernalia for feasting probably existed, they appear to have been constructed of perishable materials like basketry, leaving little material record. Feasting was very important for ethnographic elites. As Teit (1906:258) observed:

Potlatches were given by one individual to another or by the chief of one clan to another. In the latter case, the chief represented his clan, and the potlatch was equivalent to one given by all the members of one clan to all the members of another. Some of these potlatches were great affairs; and clans tried to outdo one another by the quantity and value of their presents, thus showing to all the country that they were the most powerful, wealthy, and energetic . . . In most cases the guests were expected at some future day to return presents equal in value to those given to them, or even of greater worth.

In addition to displaying the power and success of a group, lavish and costly feasts were also used for child births and subsequent maturation celebrations, for marriages (accompanied by major reciprocal wealth exchanges), for making peace and acquiring allies, and for funerals (Teit 1906:236, 247, 258–60, 267; 1909:583–4, 659, 664). As already noted, these uses of feasts are very similar to the feasting strategies found among Reciprocator and Entrepreneur societies of New Guinea and used by ambitious individuals to acquire political and economic power (Hayden 1995).

Finally, there are domesticated dogs at Keatley Creek. These may or may not have been used for feasting, but they are undoubtedly associated with the display of status and prestige. It is difficult to account for the curation of the dog skulls recovered from HP 7 (Vol. II, Chap. 10) unless they were being kept and displayed as testimonies of important past rituals or feasts, just as horns of cattle or the jawbones of sacrificed pigs are hung up on walls as displays of wealth and good fortune in China (Song 1964 cited in Kim 1994:121) and Thailand (Hayden field notes). At Keatley Creek, dogs may not have been eaten at feasts, but were clearly dismembered at impressive events similar to the rituals recorded by Teit (1909:579) and secret Tolache cult rituals of southern California (Salls 1990). The value of dogs is indicated by the fact that they were one of the items inherited by sons (Teit 1900:294) and sacrificed at funerals. I have even seen one fur trade journal account of the spiteful killing of a dog between two Indian families resulting in a full conflict and massacre.

In historic times, the horse seems to have taken over many of the roles of native dogs, being used for status display, bearing burdens, and sacrifice at funerals (Teit 1909:734; Vol. II, Chap. 10). Rich chiefs owned up to 1,000 horses (Teit 1909:734; 1930:262) and prehistoric wealthy families undoubtedly owned numerous dogs. A similar role was also filled by slaves ethnographically (Teit 1906:232–3; 1909:576; Nastich 1954:23, 46–7), with the dog dance society (Teit 1909:579) even bearing remarkable similarities to the cannibal society dances of the Coast. Like dogs and horses, slaves were sometimes killed at the funeral of their owners, sometimes by being buried alive with them (Teit 1906:270)!

The existence of slavery is so widespread in the Northwest and is recorded from such early historic contexts that it seems highly likely that it had a prehistoric origin and was not simply the result of contact with Europeans, although it may well have achieved a more widespread distribution, new levels of intensity, and new productive functions due to the depletion of populations by epidemics, the need for labor, and intensified wealth competition (Mitchell and Donald 1985:31). Yet, the archaeological evidence for



slavery is elusive at best. As previously noted, the development of nephrite celts may be one of the most visible expressions of slavery. Jewitt (1974:65) states that slaves performed all hard and menial work, and given a rate of cutting nephrite using non-industrial technology of only one millimeter per hour (Darwent 1998; Chapman 1891:498–9; Hansford 1950:79; M. Johnson 1975), making these celts would have certainly constituted hard and menial work. In addition, there are several occurrences of burials lacking grave goods in housepits immediately prior to abandonment or between two occupations (e.g., Housepit 1 at O'Sullivan Reservoir, Washington, and the Pine Mountain site at Lochnore-Nesikep, B.C.—Daugherty 1952; Sanger 1966). These may be similar to the apparent deposition of dog remains on floors of houses at Keatley Creek just prior to their abandonment (Vol. II, Chap. 10) or to the dog sacrifice rituals at Wildcat Canyon (Dumond and Minor 1983).

Evidence of human sacrifice (which generally involves slaves) appears in the Nicola Valley where H. Smith (1900) reported decapitation-like cut marks on a burial, and from a housepit dated to 1,100 BP near Chief Joseph dam where a human skull was recovered from a pit in the center of the floor. Schulting (1995:134, 144) suggests that other burials at Fountain and Adams Lake appear to have been slaves that accompanied their owners to the grave. If slavery was present prehistorically elsewhere on the Plateau, it certainly should have also been present at Keatley Creek, and I think that it probably was. There are no direct ethnographic accounts of the household duties of slaves on the Plateau, but if they were similar to slave chores on the Coast, they would have included fishing and food preparation (Vol. II, Chap. 1). Oral traditions of the Thompson groups indicate that servants performed the hard work like getting firewood and water, cooking, dressing skins, and carrying loads or delivering gifts (Teit 1912a:242, 384).

Thus, in sum, there is only weak evidence for warfare or cults as an aggrandizive strategy for promoting the production of surpluses and using some of these surpluses to enhance aggrandizers' wealth and power at Keatley Creek. There is good ethnographic and archaeological evidence for regional trade and the production of substantial amounts of prestige goods that would be consistent with a very evolved Reciprocator or early form of Entrepreneur organization. Population densities, storage capacities, available resource levels, and abilities to produce surpluses all support this evaluation.

Complexity can also be inferred from a number of types of settlement data. Size distributions of houses within settlements can be used to measure inequality

using Lorenz curves and Gini coefficients (Vol. I, Chap. 1). The same techniques can be used to measure inequalities in burials (Schulting 1995), and inequalities in the size distributions of sites within a region (Vol. I, Chap. 1). In the case of the Plateau in general, and the Lillooet region and the Keatley Creek site in particular, all of these indices point to social and economic organizations that were far from egalitarian. However, applications of these techniques is still extremely new, and without a broader comparative body of similar observations from a range of egalitarian to complex societies, it is difficult to use these measures as indicators of specific forms of socio-economic complexity. Even in the case of pronounced inequalities in settlement sizes (considered to be an important indicator of chiefdoms and complexity by G. Johnson (1973), Wright (1977), and others, unusually large settlements sometimes occur around successful Big Men (Entrepreneurs) with no real power hierarchy of one settlement over another (Lightfoot and Feinman 1982:67). However, the unusually large site of Keatley Creek persisted over too many centuries to have resulted merely from ephemeral charismatic characteristics of successful leaders. Much more fundamental economic factors must have been involved. Aside from differential settlement sizes, we have no evidence for actual political site hierarchies or even evidence for unified political control within a single large settlement; and therefore we have no unequivocal evidence for true chiefdoms.

Settlement size does provide a strong indication of transegalitarian complexity, while population density provides a weaker, but still useful indicator as well. Naroll (1956:690, 699), Carneiro (1967), Blau (1977:162–3, 182, 241), Johnson (1982), Ames (1985), Clark and Parry (1990:309), and Hassan (1981:181) have all documented the empirical relation between the size of the largest settlement of a polity and the number of formal social organizations, the number of occupational specialists, and the need for administrative and enforcement officials (Fig. 5; see also Hayden 1997:48). On the basis of the relationships that they have documented, about 10–20 types of occupational specialists including 5–10 craft specialists probably existed at Keatley Creek during its peak population of 1,200–1,500, among which were probably house administrators, heralds, police, warriors, runners, fishermen, hunters, slaves, carvers, nephrite workers, shamans, traders, basket makers, herbalists, and leather workers (Hayden 1997:48; Romanoff 1992b). There were probably also 5–10 types of social organizations, including residential corporate groups, nuclear families, trade partnerships, secret societies, dance societies, and village councils. Some scholars have suggested that these increases in complexity stem from the limited capacity of humans to form numbers of

relationships and recognize appropriate roles beyond a few hundred individuals (Forge 1972; Blau 1977:132), the need for information processing specialists above certain population sizes (scalar stress—Kosse 1990), and increased power related to increases in group size (Blau 1977:241). Whatever the reason, these models are consistent on a larger scale with what is known on the Plateau ethnographically, and they strongly support our basic inferences about the social and economic organization of the region prehistorically.

The relatively high status of women and children as reflected by prehistoric grave goods in the Lillooet region implies that marriage payments, child growth payments, and exchange were all important features of the large houses in the Keatley Creek community. The magnitude of the socioeconomic inequalities observed within and between housepits plus the occurrence of domesticated dogs also points to an elaborate Reciprocator or simple form of Entrepreneur organization. One of the most critical factors in differentiating these two organizational forms is whether profit driven investment was a feature of feasting and other relationships. This is a difficult problem to resolve at this stage. Ethnographically, "potlatches" to outdo rivals in producing and distributing wealth clearly occurred and were especially common among the Canyon Shuswap (Teit 1906:258; 1909:535, 583). Keatley Creek was far larger than any ethnographic community, and we could reasonably expect commensurately more and more intensive

feasting in the large Classic Lillooet communities. I think it is very likely that at least low level Entrepreneurs succeeded in instituting profit driven investments and competitive feasts in these communities. However, I cannot demonstrate this unequivocally.

Was Keatley Creek more complex than the ethnographic Upper Lillooet and Canyon Shuswap? Given the effects of European trade, horses, firearms, and diseases (Campbell 1990:17–21), this is difficult to answer, especially since there is little consensus by researchers on the magnitude or direction of effects from each of these factors or their overall impact. Bishop (1987), MacDonald and Cove (1987:ix), Gibson (1988), Fitzhugh (1985:37, 188–9) and Goldman (1940) all argue that European trade substantially augmented the pre-existing political centralization, conflict, class distinctions, and the general complexity of native communities, including those in the British Columbia Interior. Campbell (1990) argues that epidemics and more equal access to trade goods by all community members acted to reduce inequalities (as in New Guinea—see Feil 1987:95, 117–120). Empirically, Schulting (1995) finds little difference in burial inequality on the Plateau from prehistoric to proto or early historic times. However, the opening and closing of trade routes clearly had major effects on local socioeconomic complexity and inequality elsewhere in the world whether the context was prehistoric or historic (Vogel 1990; Cabrero 1991; Ramenofsky).

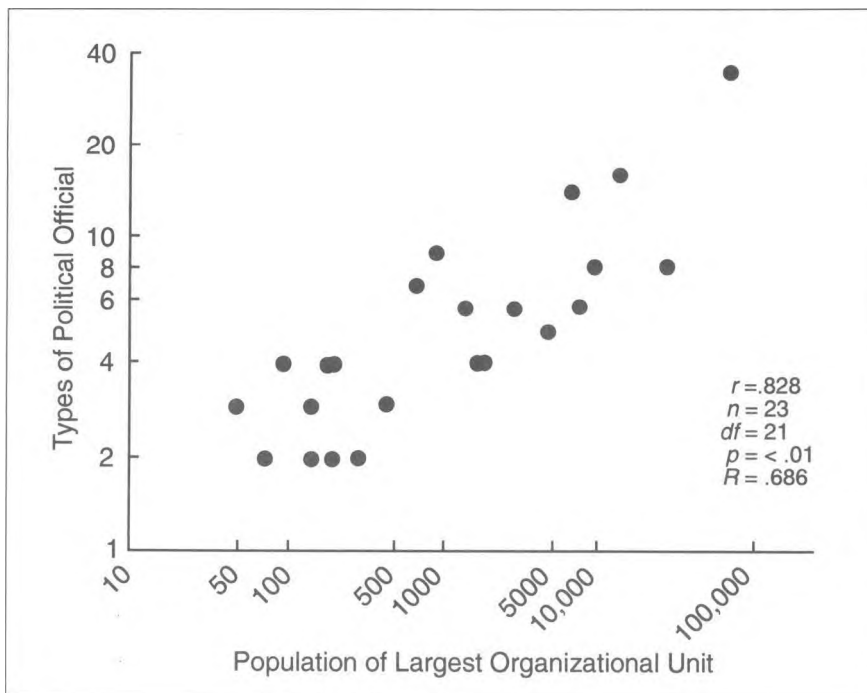


Figure 5. The relation between population size of polities and the number of types of political officials in the polity (from Johnson 1982:390). Given this relationship, Keatley Creek should have had 5–10 types of political officials.

Overall, I think it is relatively safe to conclude that the prehistoric Keatley Creek polity was at least as complex as the most complex ethnographic Lillooet and Canyon Shuswap communities and resembled them in many basic organizational characteristics. It is also possible that the Classic Lillooet cultures with greater abundance and surpluses of salmon were even more competitive in their feasting, approaching some of the more complex prehistoric coastal groups in this respect where potlatching was much less frequent and intensive than recorded for the fur trade period (McIlwraith 1948: 243; Goldman 1940:345; Codere 1950:94–5). At this point, there is no reason to believe that any Interior groups were organized into true chiefdoms with authoritative

political heads of entire settlements, multi-settlement political hierarchies, and active campaigns of territorial conquest. The most powerful figures at

Keatley Creek seem to have been heads of independent corporate groups that resided together in the same community.

## References

- Alexander, Diana  
1992 A reconstruction of prehistoric land use in the Mid-Fraser River area based on ethnographic data. In Brian Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 99–176. University of British Columbia Press, Vancouver.
- Ames, Kenneth  
1985 Hierarchies, stress, and logistical strategies among hunter-gatherers in Northwestern North America. In D. Price and J. Brown, (Eds.), *Prehistoric Hunter-gatherers*, pp. 155–180. Academic Press, Orlando.
- Ames, Kenneth  
1994 The northwest coast: Complex hunter-gatherers, ecology, and social evolution. *Annual Review of Anthropology* 23:209–29.
- Beckerman, Stephen  
1983 Optimal foraging group size for a human population: the case of Bari fishing. *American Zoologist* 23:283–290.
- Berman, Judith  
1994 George Hunt and the Kwak'wala texts. *Anthropological Linguistics* 36:483–514.
- Binford, Lewis  
1999 Mobility, housing, and environment: A comparative study. *Journal of Anthropological Research* 46:119–52.
- Bishop, Charles  
1987 Coast-interior exchange: The origins of stratification in northwestern North America. *Arctic Anthropology* 24:72–83.
- Blake, Michael  
1991 An emerging early Formative chiefdom at Paso de la Amada, Chiapas, Mexico. In William Fowler, Jr., (Ed.), *The Formation of Complex societies in south-east Mesoamerica*, pp. 27–46. CRC Press, Boca Raton.
- Blake, Michael  
1993 The rise of chiefdoms in coastal Chiapas, Mexico. Paper presented at the Annual Meeting of the American Anthropological Association, Washington, D.C.
- Blau, Peter  
1977 *Inequality and heterogeneity: A primitive theory of social structure*. The Free Press, New York.
- Boas, Franz  
1891 The Shuswap: Second general report on the Indians of British Columbia. *Report of the Sixth Meeting of the British Association for the Advancement of Science* 4: 632–47. Newcastle-upon-Tyne.
- Boas, Franz  
1898 Introduction. In James Teit, Traditions of the Thompson River Indians of British Columbia, pp. 1–18. American Folk-lore Society and Houghton Mifflin & Co., New York.
- Boelscher, Marianne  
1989 *The curtain within: Haida social and mythological discourse*. University of British Columbia Press, Vancouver.
- Bogan, A.  
1983 Evidence for faunal resource partitioning in eastern North American chiefdoms. In J. Clutton-Brock and C. Grigson (Eds.), *Animals and Archaeology: 1. Hunters and their prey*, pp. 305–325. BAR International Series 163, Cambridge.
- Bouchard, Randy, and Dorothy Kennedy  
1973 Lillooet stories. Manuscript on file with the British Columbia Indian Language Project, Victoria, B.C.
- Bouchard, Randy, and Dorothy Kennedy  
1985 Lakes Indian ethnography and history. Unpublished report prepared for the Archaeology Branch, British Columbia Ministry of Culture, Tourism, and Small Business, Victoria, B.C.
- Bowers, S.A.  
1965 *Hidatsa social and ceremonial organization*. Bureau of American Ethnology, Bulletin 194. U.S. Government Printing Office, Washington, D.C.
- Burch, Ernest, Jr.  
1975 *Eskimo kinsmen*. American Ethnological Society Monograph 59. West Publishing Co., St. Paul.
- Burnard, Linda  
1987 *Metes and bounds: An archaeological search for hunter-gatherer territoriality*. M.A. Thesis, Anthropology and Sociology Department, University of British Columbia, Vancouver.
- Bussey, Jean, and Diana Alexander  
1992 *Archaeological assessment of the Cariboo Forest Region*. Report prepared by Points West Heritage Consulting, on file with the British Columbia Provincial Archaeology Branch, Victoria.
- Cabrero, Maria Teresa  
1991 Cultura arqueologica de Bolanos (Zacatecas y Jalisco). *Ancient Mesoamerica* 2:193–203.
- Campbell, Sarah  
1999 *Postcolumbian culture history in the northern Columbia Plateau, A.D. 1550–1900*. Garland Publishing, New York.
- Cannon, Aubrey  
1992 Conflict and salmon on the Interior Plateau of British Columbia. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 506–524. University of British Columbia Press, Vancouver, B.C.
- Cannon, Aubrey  
n.d. Notes on the Interior Salish of British Columbia. Unpublished notes prepared for the Fraser River Investigations into Corporate Group Archaeology project.
- Carlson, Roy  
1989 Review of: Prehistoric economies of the Pacific Northwest Coast. *Canadian Journal of Archaeology* 13:232–7.
- Carlson, Roy  
1991 The Northwest Coast before A.D. 1600. *Proceedings of the Great Ocean Conferences* 1:109–136.
- Carlson, Roy  
1993 Evolution of the Northwest Coast cultural system. Paper presented at the annual meeting of the Society for American Archaeology, St. Louis.
- Carlson, Roy  
1996 The first British Columbians. In H. Johnston (Ed.),

- The Pacific Province*, pp. 12–46. Douglas and McIntyre, Vancouver.
- Carneiro, Robert  
1967 On the relationship between size of population and complexity of social organization. *Southwestern Journal of Anthropology* 23:234–243.
- Chapman, F.R.  
1891 On the working of greenstone or nephrite by the Maoris. *Transactions and Proceedings of the New Zealand Institute* 24:479–539.
- Chisholm, Brian  
1986 *Reconstruction of prehistoric diet in British Columbia using stable-carbon isotopic analysis*. Unpublished Ph.D. Dissertation, Simon Fraser University: Burnaby, B.C.
- Clark, John, and Michael Blake  
1994 The power of prestige: competitive generosity and the emergence of rank societies in lowland Mesoamerica. In E. Brumfiel and J. Fox (Eds.), *Factional competition and political development in the New World*, pp. 17–30. Cambridge University Press, Cambridge.
- Clark, John, and W. Parry  
1999 Craft specialization and cultural complexity. *Research in Economic Anthropology* 12:289–346.
- Cleland, Charles  
1965 Appendix 2: Analysis of the faunal remains of the Fatherland site. In Robert Neitzel (Ed.), *Archaeology of the Fatherland site*. *Anthropological Papers, American Museum of Natural History* 51(1): 96–101.
- Codere, Helen  
1959 *Fighting with property*. University of Washington Press, Seattle.
- Coupland, Gary  
1988 *Prehistoric cultural change at Kitselas Canyon*. Canadian Museum of Civilization, Mercury Series, Archaeological Survey of Canada Paper No. 138. Ottawa.
- Curtis, Edward  
1911 *The North American Indian*. Vol. 8. Plimpton Press, Norwood, Massachusetts.
- D'Altroy, Terence  
1994 Factions and political development in the central Andes. In E. Brumfiel and J. Fox (Eds.), *Factional competition and political development in the New World*, pp. 171–188. Cambridge University Press, Cambridge.
- Darwent, John  
1998 *The prehistoric use of nephrite on the British Columbia Plateau*. Archaeology Press, Simon Fraser University, Burnaby, B.C.
- Daugherty, Richard  
1952 Archaeological investigations in O'Sullivan Reservoir, Grant County, Washington. *American Antiquity* 17:374–83.
- Dawson, George  
1989 The journals of George M. Dawson: British Columbia, 1875–1878: Vol. 1. 1875–1876. (Edited by D. Cole and B. Lockner). University of British Columbia Press, Vancouver.
- Dickason, Olive  
1984 The myth of the savage and the beginnings of French colonialism in the Americas. University of Alberta Press, Edmonton.
- Donald, Leland  
1997 *Aboriginal slavery on the Northwest Coast of North America*. University of California Press, Berkeley.
- Donald, Leland, and Donald Mitchell  
1975 Some correlates of local group rank among the southern Kwakiutl." *Ethnology* 14:325–346.
- Drake-Terry, Joanne  
1989 *The same as yesterday*. Lillooet Tribal Council, Lillooet, B.C.
- Drucker, Philip  
1951 *The northern and central Nootkan tribes*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 144, Washington, D.C.
- Dumond, Don, and Rick Minor  
1983 *The Wildcat Canyon site*. University of Oregon Anthropological Papers 30, Eugene.
- Emmons, George, and Frederica deLaguna  
1991 *The Tlingit Indians*. University of Washington Press, Seattle.
- Fei, Hsiao-tung, and Chih-i Chang  
1945 *Earthbound China*. University of Chicago Press, Chicago.
- Feil, Daryl  
1987 The evolution of Highland Papua New Guinea societies. Cambridge University Press, Cambridge.
- Feinman, Gary, and Jill Neitzel  
1984 Too many types: An overview of sedentary prestate societies in the Americas. *Advances in Archaeological Method and Theory* 7:39–102.
- Ferguson, R. Brian  
1984 A reexamination of the causes of Northwest Coast warfare. In R. Ferguson (Ed.), *Warfare, culture and environment*, pp. 267–328. Academic Press, Orlando.
- Fitzhugh, William  
1985 Early contacts north of Newfoundland before A.D. 1600: A Review, and Commentary. In W. Fitzhugh (Ed.), *Cultures in contact*, pp. 23–44, 187–92. Smithsonian Institution Press, Washington, D.C.
- Forge, Anthony  
1972 Normative factors in the settlement size of Neolithic cultivators (New Guinea). In P. Ucko, R. Tringham and G. Dimbleby (Eds.), *Man, settlement and urbanism*, pp. 363–76. Duckworth, London.
- Gibson, James  
1988 The maritime trade of the North Pacific coast. In W. Washburn (Ed.), *Handbook of North American Indians Vol. 4, History of Indian-White relations*, pp. 375–390. Smithsonian Institution Press, Washington, D.C.
- Goldman, Irving  
1949 The Alkatcho Carrier of British Columbia. In Ralph Linton (Ed.), *Acculturation in seven American Indian tribes*, pp. 333–386. Appleton-Century-Crofts, New York.
- Greaves, Sheila  
1999 *The organization of microcore technology in the Canadian southern Interior Plateau*. Unpublished Ph.D. dissertation, Department of Anthropology and Sociology, University of British Columbia, Vancouver.
- Grosse, E.  
1896 Die formen der familie und die formen der wirtschaft. Mohr, Freiburg, Leipzig.
- Hansford, S. Howard  
1959 *Chinese jade carving*. Lund Humphries & Co.
- Hassan, Fekri  
1981 *Demographic archaeology*. Academic Press, New York.
- Hayden, Brian  
1992a Introduction: Ecology and culture. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau: Stl'alt'imx resource use*, pp. 3–46. University of British Columbia Press, Vancouver.
- Hayden, Brian  
1992b Ecology and complex hunter/gatherers. In B. Hayden (Ed.), *A complex culture of the British Columbia*

- Plateau, pp. 525–63. University of British Columbia Press, Vancouver.
- Hayden, Brian  
1992c *A complex culture of the British Columbia Plateau: Traditional Stl'atl'imx resource use*. University of British Columbia Press, Vancouver.
- Hayden, Brian  
1994 Competition, labor, and complex hunter-gatherers. In Ernest Burch, Jr. (Ed.), *Key issues in hunter-gatherer research*, pp. 223–39. Berg Publishers, Oxford.
- Hayden, Brian  
1995 Pathways to power: principles for creating socio-economic inequalities. In T.D. Price and G. Feinman (Eds.), *Foundations of social inequality*, pp. 15–85. Plenum Press, New York.
- Hayden, Brian  
1996 Thresholds of power in emergent complex societies. In Jeanne Arnold, (Ed.), *Emergent social complexity: The evolution of intermediate societies.*, pp. 50–58. International Monographs in Prehistory, Ann Arbor, Michigan.
- Hayden, Brian  
1997 *The Pithouses of Keatley Creek*. Harcourt Brace, Fort Worth.
- Hayden, Brian, Edward Bakewell, and Rob Gargett  
1996 The world's longest lived corporate group: Lithic sourcing and social organization in British Columbia. *American Antiquity* 61:341–356.
- Hayden, Brian, and Aubrey Cannon  
1982 The corporate group as an archaeological unit. *Journal of Anthropological Archaeology* 1:132–158.
- Hayden, Brian, Morley Eldridge, Anne Eldridge, and Aubrey Cannon  
1985 Complex hunter-gatherers in interior British Columbia. In T. Douglas Price and James Brown (Eds.), *Prehistoric hunter-gatherers*, pp. 181–99. Academic Press, New York.
- Hayden, Brian, and Rob Gargett  
1999 Big man, big heart?: A Mesoamerican view of the emergence of complex society. *Ancient Mesoamerica* 1:3–20.
- Hayden, Brian, and Rick Schulting  
1997 The Plateau Interaction Sphere and Late Prehistoric Cultural Complexity. *American Antiquity* 62:51–85.
- Helms, Mary  
1994 Chiefdom rivalries, control, and external contacts in lower Central America. In E. Brumfiel and J. Fox (Eds.), *Factional competition and political development in the New World*, pp. 55–60. Cambridge University Press, Cambridge.
- Hildebrandt, William, and Terry Jones  
1992 Evolution of marine mammal hunting: A view from the California and Oregon coasts. *Journal of Anthropological Archaeology* 11:360–401.
- Hudson, Douglas  
1994 Upper Similkameen ethnographic and ethnohistorical overview. Paper presented at the B.C. Studies Conference, Okanagan University College, Kelowna, B.C.
- Hudson, Douglas  
n.d. Carrier Indians and sockeye salmon: a case study. Ms. on file with the author, Fraser Valley College, Abbotsford, British Columbia.
- Huelsbeck, David  
1994 Mammals and fish in the subsistence economy of Ozette. In Stephan Samuels (Ed.), *Ozette Archaeological Project research reports, vol. 2: Fauna*, pp. 17–92. Washington State University, Anthropology Department, Reports of Investigations 66, Pullman, and National Park Service, Seattle.
- Hunn, Eugene  
1999 Nch'i-Wana, The Big River: Mid-Columbia Indians and their land. University of Washington Press, Seattle.
- Huntington, Richard, and Peter Metcalf  
1979 *Celebrations of death*. Cambridge University Press, Cambridge.
- Ingold, Tim  
1983 The significance of storage in hunting societies. *Man* n.s. 18:553–71.
- Jackson, H. and S. Scott  
1995 Bone assemblages, meat consumption patterns, and social ranking: A view from the Southeastern U.S. *Southeastern Archaeology*.
- Jewitt, John R. (Derik Smith, Ed.)  
1974 *The adventures and sufferings of John R. Jewitt, captive among the Nootka, 1803–1805*. McClelland and Stewart Ltd., Toronto.
- Jochelson, Waldemar  
1908 The Koryak. *Memoir of the American Museum of Natural History* 6.
- Johnson, Gregory  
1973 *Local exchange and early state development in southwestern Iran*. University of Michigan Museum of Anthropology, Anthropology Papers, No. 51. Ann Arbor.
- Johnson, Gregory  
1982 Organizational structure and scalar stress. In C. Renfrew, M. Rowland, and B. Seagraves (Eds.), *Theory and explanation in archaeology*, pp. 389–421. Academic Press, New York.
- Johnson, Maria  
1975 Identificación de jade y técnicas para trabajar el jade de Mesoamérica. Presentación al Mesa Redonda de la Sociedad Mexicana de Arqueología, Tegucigalpa, Honduras.
- Kamenskii, Anatolii  
1985 *Tlingit Indians of Alaska*. University of Alaska Press, Fairbanks.
- Keeley, Lawrence  
1996 *War before civilization*. Oxford University Press, New York.
- Kennedy, Dorothy, and Randy Bouchard  
1992 Stl'atl'imx (Fraser River Lillooet) fishing. In Brian Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 266–354. University of British Columbia Press, Vancouver.
- Kent, Susan  
1980 Pacifism: A myth of the Plateau. *Northwest Anthropological Research Notes* 14:125–34.
- Kew, Michael  
1992 Salmon availability, technology, and cultural adaptation. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 177–221. University of British Columbia Press, Vancouver.
- Kim, Seung-Og  
1994 Burials, pigs, and political prestige in Neolithic China. *Current Anthropology* 35:119–41.
- Kosse, Krisztina  
1990 Group size and societal complexity: Thresholds in the long-term memory. *Journal of Anthropological Archaeology* 9:275–303.
- Lamb, W. Kaye (Ed.)  
1960 *The letters and journals of Simon Fraser 1806–1808*. Macmillan Co., Toronto.
- Legros, Dominique  
1985 Wealth, poverty and slavery among the 19th century

- Tutchone Athapaskans. *Research in Economic Anthropology* 7:37-64.
- Lightfoot, Kent, and Gary Feinman  
1982 Social differentiation and leadership development in early pithouse villages in the Mogollon region of the American southwest. *American Antiquity* 47:64-85.
- Lovell, Nancy, Brian Chisholm, D. Erle Nelson, and Henry Schwarcz  
1986 Prehistoric salmon consumption in Interior British Columbia. *Canadian Journal of Archaeology* 10:99-106.
- MacDonald, George  
1989 *Kitwanga Fort report*. Canadian Museum of Civilization, Ottawa.
- MacDonald, George, and J. Cove (Eds.)  
1987 *Trade and warfare: Tsimshian narratives 2*. Canadian Museum of Civilization, Mercury Series, Directorate Paper No. 3.
- McIlwraith, T.F.  
1948 *The Bella Coola Indians*. University of Toronto Press, Toronto.
- MacKenzie, Alexander. (Ed. W. Sheppe)  
1962 *Alexander MacKenzie's journal of his voyage to the Pacific coast of Canada in 1793*. University of California Press, Berkeley.
- Marquardt, William  
1991 Politics and production among the Calusa of south Florida. In Tim Ingold, D. Riches, and J. Woodburn (Eds.), *Hunters and gatherers* (Vol. 1), pp. 161-88. Berg, New York.
- Marshall, Yvonne  
1992 *A political history of the Nuu-chah-nulth people*. Unpublished Ph.D. dissertation, Archaeology Department, Simon Fraser University, Burnaby, British Columbia.
- Maschner, Herbert, and B. Hoffman  
1994 *The evolution of village life on the North Pacific Coast*. Paper presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim, CA.
- Matson, R.G.  
1983 Intensification and the development of cultural complexity: the Northwest versus the Northeast Coast. In R. Nash (Ed.), *The evolution of maritime cultures on the Northeast and Northwest Coasts of North America*, pp. 124-48. Archaeology Department Occasional Paper No. 11, Simon Fraser University, Burnaby, B.C.
- Matson, R.G.  
1985 The relationship between sedentism and status inequalities among hunters and gatherers. In Marc Thompson, Maria Teresa Garcia and Francois Kense (Eds.), *Status, structure and stratification*, pp. 245-252. Archaeological Association of the University of Calgary, Calgary.
- Matson, R.G.  
1992 The evolution of Northwest Coast subsistence. In D. Croes, Rebecca Hawkins, and B. Isaac (Eds.), *Long-term subsistence change in prehistoric North America*, pp. 367-428. JAI Press, Greenwich, Conn.
- Matson, R.G., and Gary Coupland  
1995 *The prehistory of the Northwest Coast*. Academic Press, San Diego.
- Maugher, Jeffrey  
1991 Shed-roof houses at Ozette and in a regional perspective. In Stephan Samuels (Ed.), *Ozette archaeological Project research reports. Vol. 1: House structure and floor midden*, pp. 29-174. Washington State University Department of Anthropology Reports of Investigations 63, Pullman, Washington.
- Mauss, Marcel  
1924 *The gift: Forms and functions of exchange in Archaic societies* (1967 translation). Norton, New York.
- McIlwraith, T.F.  
1948 *The Bella Coola Indians; Vol. 1 & 2*. University of Toronto Press, Toronto.
- Milisauskas, Sarunas, and Janusz Kruk  
1993 Archaeological investigations on Neolithic and Bronze Age sites in southeastern Poland. In Peter Bogucki (Ed.), *Case studies in European prehistory*, pp. 63-94. CRC Press, Boca Raton.
- Minc, Leah  
1986 Scarcity and survival: The role of oral tradition in mediating subsistence crises. *Journal of Anthropological Archaeology* 5:39-113.
- Mitchell, D.S.  
1925 *A story of the Fraser River's great sockeye runs and their loss*. Unpublished ms. on file with the Pacific Salmon Commission and B.C. Provincial Archives.
- Mitchell, Donald, and Leland Donald  
1985 Some economic aspects of Tlingit, Haida, and Tsimshian slavery. *Research in Economic Anthropology* 7:19-35.
- Mitchell, Donald, and Leland Donald  
1988 Archaeology and the study of Northwest Coast economies. In B. Isaac (Ed.), *Prehistoric economies of the Pacific Northwest Coast*, pp. 293-351. JAI Press, Greenwich, Conn.
- Modjeska, Nicholas  
1982 Production and inequality: Perspectives from central New Guinea. In Andrew Strathern (Ed.), *Inequality in New Guinea Highlands societies*, pp. 50-108. Cambridge University Press, Cambridge.
- Morgan, Lewis Henry  
1881 *Houses and house life of the American aborigines*. U.S. Geological Survey, Contributions to American Ethnology, IV, Washington, D.C.
- Mullan, James  
1987 *Status and propagation of Chinook salmon in the mid-Columbia River through 1985*. U.S. Fish and Wildlife Service, Fisheries Assistance Office, Biological Report 87(3). Leavenworth National Fish Hatchery, Leavenworth, Washington.
- Naroll, Raoul  
1956 A preliminary index of social development. *American Anthropologist* 58:687-715.
- Nastich, Milena  
1954 *The Lillooet: an account of the basis of individual status*. Unpublished Masters thesis, Department of Economics, Political Science and Sociology, University of British Columbia, Vancouver.
- Netting, Robert  
1982 Some home truths on household size and wealth. *American Behavioral Scientist* 25:641-662.
- Pokotylo, David, Marian Binkley, and Joanne Curtin  
1987 The Cache Creek Burial Site (EeR1), British Columbia. *British Columbia Provincial Museum Contributions to Human History* No. 1.
- Pokotylo, David, and Patricia Froese  
1983 Archaeological evidence for prehistoric root gathering in the southern Interior Plateau of British Columbia: A case study from Upper Hat Creek. *Canadian Journal of Archaeology* 7:127-158.
- Post, Richard, and Rachel Commons  
1938 Material culture. In L. Spier (Ed.), *The Sinkaietk or*

- Southern Okanagan of Washington*, pp. 35–70. General Series in Anthropology, No. 6. George Banta Publishing, Menasha, Washington.
- Price, T. Douglas and James Brown  
1985 Aspects of hunter/gatherer complexity. In T.D. Price and J. Brown (Eds.), *Prehistoric hunter-gatherers*, pp. 3–20. Academic Press, Orlando, Florida.
- Ramenofsky, Ann  
1987 *Vectors of Death: The Archaeology of European Contact*. New Mexico University Press, Albuquerque.
- Ray, Verne  
1942 *Culture element distributions: XXII; Plateau*. University of California, Anthropological Records 8(2).
- Romanoff, Steven  
1971 *Fraser Lillooet salmon fishing*. Unpublished B.A. Thesis, Division of History and Social Sciences, Reed College.
- Romanoff, Steven  
1992a Fraser Lillooet salmon fishing. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 222–265. University of British Columbia Press, Vancouver.
- Romanoff, Steven  
1992b The cultural ecology of hunting and potlatches among the Lillooet Indians. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 470–505. University of British Columbia Press, Vancouver.
- Salls, Roy  
1990 Zooarchaeology of the secret Tolache cult rituals. *Journal of Ethnobiology* 10:254–5.
- Sanger, David  
1966 Excavations in the Lochnore-Nesikep Creek locality, British Columbia: Interim report. *National Museum of Canada, Anthropology Papers*, No. 12, Ottawa.
- Sanger, David  
1968 The Texas Creek burial site assemblage, British Columbia. *National Museum of Canada, Anthropology Papers*, No. 17.
- Sanger, David  
1971 Discussion. In A. Stryd and R. Smith (Eds.), *Aboriginal man and environments on the plateau of northwest America*, pp. 255–6. University of Calgary Archaeological Association, Calgary.
- Schalk, Randall  
1981 Land use and organizational complexity among foragers of Northwestern North America. In S. Koyama and D. Thomas (Eds.), *Affluent foragers*, pp. 53–75. National Museum of Ethnology, Senri Ethnological Studies 9, Osaka.
- Schulting, Rick  
1995 *Mortuary variability and status differentiation on the Columbia-Fraser Plateau*. Archaeology Press, Simon Fraser University, Burnaby, British Columbia.
- Shnirelman, Victor  
1992 Complex hunter-gatherers: Exception or common phenomenon? *Dialectical Anthropology* 17:183–96.
- Smith, Eric  
1981 The application of optimal foraging theory to the analysis of hunter-gatherer group size. In B. Winterhalder and E. Smith (Eds.), *Hunter-gatherer foraging strategies*, pp. 36–65. University of Chicago Press, Chicago.
- Smith, Harlan  
1900 Archaeology of the Thompson River Region, British Columbia. *Memoirs of the American Museum of Natural History* 1:6.
- Smith, Harlan  
1910 The archaeology of the Yakima Valley. *Anthropological Papers of the American Museum of Natural History* 6(1).
- Song, C.  
1964 Mortuary practices among the Naxi minority groups of Yunnan province (in Chinese). *Kaogu* no 4:200–4.
- Spier, Leslie, and Edward Sapir  
1930 *Wishram ethnography*. University of Washington Publications in Anthropology 3.
- Sproat, Gilbert  
1987 *The Nootka*. Sono Nis Press, Victoria, B.C.
- Stryd, Arnoud  
1971 Field notes: EeRk 4 (The Bell site). Notes on file at the Royal British Columbia Museum, Victoria, B.C.
- Stryd, Arnoud  
1973 *The later prehistory of the Lillooet area, British Columbia*. Ph.D. dissertation, Department of Archaeology, University of Calgary, Calgary.
- Suttles, Wayne  
1981 Plateau pacifism reconsidered. *Northwest Anthropological Research Notes* 15(2):180.
- Swanton, John  
1975 Contributions to the ethnology of the Haida. *Memoirs of the American Museum of Natural History* 5.
- Teit, James  
1898 *Traditions of the Thompson River Indians of British Columbia*. American Folk-lore Society & Houghton Mifflin & Co., New York.
- Teit, James  
1900 The Thompson Indians of British Columbia. *Memoirs of the American Museum of Natural History* 2(4).
- Teit, James  
1906 The Lillooet Indians. *Memoirs of the American Museum of Natural History* 2(5).
- Teit, James  
1909 The Shuswap. *Memoirs of the American Museum of Natural History* 2(7):447–789.
- Teit, James  
1912a Mythology of the Thompson Indians. *Memoirs of the American Museum of Natural History* 8: 199–416.
- Teit, James  
1912b Traditions of the Lillooet Indians of British Columbia. *Journal of American Folk-Lore* 25:287–371.
- Teit, James  
1917 *Folk-tales of Salishan and Sahaptin tribes*. American Folk-lore Society, New York.
- Teit, James  
1930 *The Salishan tribes of the Western Plateaus*. Forty-fifth Annual Report, Bureau of American Ethnology, Washington, D.C.
- Testart, Alain  
1982 The significance of food storage among hunter-gatherers. *Current Anthropology* 23:523–37.
- Tremaine, Kim  
1997 Social incentives: Explaining subsistence intensification in prehistoric central California. Dissertation Proposal, Anthropology Department, University of California, Davis.
- Tyhurst, Robert  
1992 Traditional and contemporary land and resource use by Ts'kw'aylaxw and Xaxli'p bands. In B. Hayden (Ed.), *A complex culture of the British Columbia Plateau*, pp. 355–404. University of British Columbia Press, Vancouver.

- Urry, Katherine  
1993 *Te Hakari: Feasting in Maori society and its archaeological implications*. M.A. Thesis, Anthropology Department, University of Auckland, New Zealand.
- Vogel, Joseph  
1990 The cultural basis, development, and consequences of a socially mediated trading corporation in southern Zambezia. *Journal of Anthropological Archaeology* 9:105-47.
- Walker, Alexander  
1982 *An account of a voyage to the North West Coast of America in 1785 & 1786*. Douglas and McIntyre, Vancouver.
- Walters, L.  
1938 Social structure. In L. Spier (Ed.), *The Sinkaietk or Southern Oakangan of Washington*, pp. 71-101. General Series in Anthropology, No. 6. George Banta Publishing, Menasha, Washington.
- Wesson, Gary  
1988 The use of shellfish resources on the Northwest Coast: The view from Ozette. In Barry Isaac (Ed.), *Prehistoric economies of the Pacific Northwest Coast*, pp. 179-210. JAI Press, Greenwich, Conn.
- Wesson, Gary  
1994 Subsistence patterns as reflected by invertebrate remains recovered at the Ozette site. In Stephan Samuels (Ed.) *Ozette Archaeological Project Research Reports, Vol. 2: Fauna*, pp. 93-196. Washington State University Department of Anthropology Reports of Investigations 66, Pullman, and National Park Service, Seattle.
- Wheeler, Polly  
1990 *Land and property ownership: Changing perspectives*. Paper presented at the 6th International Conference on Hunting and Gathering Societies, Fairbanks, Alaska.
- White, Douglas  
1990 On the explanation of polygyny. *Current Anthropology* 31:313.
- Widmer, Randolph  
1988 *The evolution of the Calusa: A nonagricultural chiefdom on the southwest Florida coast*. University of Alabama Press, Tuscaloosa.
- Wills, W.H. and Thomas Windes  
1989 Evidence for population aggregation and dispersal during the Basketmaker III period in Chaco Canyon, New Mexico. *American Antiquity* 54:347-69.
- Wilson, Gilbert  
1934 *The Hidatsa earthlodge*. Anthropological Papers, American Museum of Natural History, Vol. 33, pt. 5, pp. 339-420.
- Wood, W. Raymond  
1980 Plains trade in protohistoric intertribal relations. In W. Wood and M. Liberty (Eds.), *Anthropology on the Great Plains*, pp. 98-109. University of Nebraska Press, Lincoln.
- Wright, Henry  
1977 Recent research on the origin of the state. *Annual Review of Anthropology* 6:379-97.
- Wyatt, David  
1972 *The Indian history of the Nicola Valley, British Columbia*. Ph.D. dissertation, Anthropology Department, Brown University, Providence, Rhode Island.