



THE RISE OF HUNTER-GATHERER COMPLEXITY

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Background of Hunter-Gatherer Complexity

Archaeologists separate hunter-gatherers into two camps "simple" and "complex." Recently there has been heated discourse as to the "nature" of complex hunter-gatherer societies. While some say it is a transitional phase between foragers and agriculturist, others argue it is an independent phenomenon. Likewise there has been some argument as to the catalyst of social complexity. Some argue that it is environmental factors while others argue it is internal ones. Yet, maybe the best possible answer is a blending of the two. Through two case studies it may be demonstrated that it could be a fallacy to elevate one factor while ignoring another.

The classic view of hunter-gatherers is that they are small, mobile, and egalitarian. In general hunter-gatherer societies are described as having a high level of individual autonomy in which every individual has equal access to resources. Richard Lee popularized this view with his work on the San (1993).

Many have taken exception with this view and have argued that anthropologists depend too heavily on peripheral groups whose survival is based on the grace of living on marginal lands. Although in the ethnographic present most hunter-gatherers, with the exception of some northwest coast Native American groups, tend to fit the picture that Lee describes, it would be suspect to assume that this is because it is an inherent tendency and not an affect of environmental conditions.

Archaeology is an important tool in that it allows us a glimpse of the wide diversity of hunter-gatherer societies across space and time. Insights into ancient hunter-gatherer societies show that the prevalent hunter-gatherer societies in the past may not fit the mold of a nomadic, egalitarian society. These societies have often been termed "complex hunter-gatherers" marked by formal leadership, reorganization of labor, and a more sedentary lifestyle (Price and Brown 1985). One of the most significant aspects of complex hunter-gatherers is their increase in intensification of foodstuffs, meaning an increase in productivity and production due to technological advances, food storage, and the diversification of resources exploited (Kelly 1995 :303).

The definition of cultural complexity generally refers to aspects of a culture that have the greatest effects on material or archaeological remains. These include prestige items, monumental construction, and larger settlements, which suggest social and economic inequalities, and a centralization of political power (Hayden 1997:8). Increasing complexity has been associated with a variety of factors including, environment, resource availability, subsistence, sedentism, technology, storage, population, exchange, conflict, and cooperation (Price and Brown 1985). Price and Brown (1985) separate these factors into three categories: the preconditions that foster complex hunter-gatherer societies, the consequences and characteristics of greater complexity, and the causes of this complexity. Placing these factors into distinct categories is not as easy as one would expect. One archaeologist's conditional factor is another's consequential factor. Perhaps by focusing on two hunter-gatherer societies living in two distinct environments and studied by different archaeologists it will be possible to determine a more congruent explanation of hunter-gatherer complexity.

Preconditions of Hunter-Gatherer Complexity

The preconditions for hunter-gatherer complexity suggested by Price and Brown focus on environmental and demographic factors. One of these is an environment where population movement is limited due to natural barriers (e.g. mountain ranges, bodies of water), or social barriers, such as neighboring groups. Price and Brown contend that because limited mobility, significant stress, such as times of food scarcity, cannot be handled by emigration, and therefore, means of solving stress must be developed internally (Price and Brown, 1985:8).

Resource abundance is also given as a condition of complexity in hunter-gatherers. This abundance can take on various forms such as richness, stability, diversity, or seasonality (Price and Brown 1985:10). In fact, Hayden argues that hierarchical groups are rarely tolerated when resources are stable but limited, fluctuating, or vulnerable to overexploitation (Hayden 1994:226).

Likewise, population growth has often been given as a conditional factor in that it causes a resource imbalance forcing societies into greater intensification. One supporter of population growth as a conditional factor is Cohen, who argues that there is an inherent characteristic of populations to grow exponentially (Price and Brown 1985:13). When considering this argument it is important to note that simple hunter-gatherers have been able to keep population low. It can also be argued that only after hunter-gatherers begin to intensify are they able to support a greater population, and therefore, population

growth would be a consequence rather than a precondition of hunter-gather complexity.

Consequences and Characteristics of Hunter-Gatherer Complexity

As for characteristics of complex hunter-gatherer, archaeologists point to evidence of growing intensification in the archaeological record. Subsistence equipment becomes more diverse in form, more specialized, and more abundant. Analysis of flora and fauna suggests that the food quest becomes more diversified and specialized. Certain resources become more important to the diet particularly nuts and shellfish. Likewise, resources that would have been previously avoided become incorporated into the diet. Some archaeological sites have even shown the occurrence of occupational specialization (Price and Brown, 1985: 11).

This could possibly be the first step in the emergence of social differentiation (Price and Brown 1985: 11). Increased territorial behavior was identified by increased boundary defense. Warfare may have become a consequence of this boundary defense. Finally, there was also the rise of a hierarchical system that was often denoted by wealth and dietary differences (Price and Brown 1985: 12).

Causes of Hunter-Gatherer Complexity

Causal analysis poses the most difficult of all questions. Marquardt distinguishes between two camps with which archaeologists usually align themselves. First is the evolutionary-ecological approach to cultural change, which was heavily influenced by Julian Steward, who wrote that agricultural proficiency, population density, settlement patterns, social complexity, and technology were all interrelated (Marquardt 1985:63). With this argument a new crop of archaeologists in the '60's and '70's attempted to explain cultural processes in adaptive and evolutionary terms with the goal of making law like generalizations (Marquardt 1985:63). Archaeologists who use this approach generally refer to major environmental shifts that led to new resources that are assumed to require greater intensification of procurement. For example, environmental causality is frequently discussed in terms of the end of the Pleistocene and its associated climatic changes (Price and Brown 1985:13, Marquardt 1985:63, and Henry 1985:378).

Likewise, Marvin Harris discusses the importance of demography in causal analysis, which he describes as the general evolutionary process of "settling down". He argues that a shift in resource base, especially the disappearance of large ungulate herds at the end of the Pleistocene, lessened the

need for high mobility. He suggests that increased sedentism and population led to a shift from a dependence on a broad spectrum of resources to a more specialized one (Price and Brown 1985:14). The problem with Harris' argument is that a change in food resources does not occur in all areas. Also, archaeological evidence points to a broader resource base not merely dependent on a few specialized re-sources (Price and Brown 1985:15).

The second line of argument comes from historical materialism, which is influenced heavily by Marxist concepts. Many archaeologists have extended the concept of class exploitation to noncapitalist societies (Marquardt 1985:65). Causes of change are argued to come from internal changes rather than external changes. They argue that, although environment and demography may play a role in "kicking the system into operation," food surplus carries with it an inherent potential for manipulation for certain people to gain a higher status. Production of surplus and competition feasts served to perpetuate these inequalities (Kelly 1995:306). Some archaeologists such as Bender argue that the switch to a society based on a hierarchical system is inevitable and abundance only serves to accelerate this process (Bender 1985).

Hayden writes that unlike animals, humans have the technology, culture, etc. that enables us to convert excess resources into other desirable goods and services. He contends that abundance of resources leads to potential competition to try and monopolize new resources. Hayden (1994:227), however, puts a sociobiological spin on his explanation for he explains that those who are most able to successfully exploit resources will have better genetic success. He contends that individuals may be willing to relinquish their autonomy if there is the potential to provide the society with a larger and more secure support group and with greater resources in times of stress.

Many, such as Price and Brown disagree with these explanations, citing that they are not well rounded nor do they necessarily reflect the archaeological record. They also call for a more systematic way of collecting data. Price and Brown (1985:15) write, "Current perspectives lack both the theoretical robustness to encompass the examples of increasing complexity among foragers and the data adequate to properly evaluate hypotheses." In response to this argument, Marquardt calls for a blending of both theoretical approaches in which researchers draw from scientific data and empirical historic based data, an approach he calls synthetic processism (1985:70). He writes, "Humans respond not only to physical environmental determinates but also to sociohistorical structures, values, myths, class relations, and so forth that are as real to them as air, gravity, heat, and water, are to rational scientific analyst (1985:67)." Marquardt's argument for a need to find a middle ground may be just what we need in establishing a more sound explanation in the causal analysis of complex hunter-gatherer societies. However,

as will be demonstrated in the following two examples, this may not be accomplished with ease.

Hunter-Gatherer Complexity at Keatley Creek

Hayden conducted an excavation in the Middle Fraser Canyon in western Canada, which is adjacent to one of the greatest remaining salmon river runs in the world. In this area a number of large prehistoric housepit villages are located in the Lilloet region. The largest is Keatley creek, dated at approximately 3,500 -- 1,000 years ago, about 25km upstream from Lilloet, British Columbia. Keatley Creek is a large seasonally reoccupied semi-sedentary community. The housepit structures are semi-subterranean houses with timber roofs covered with earth and sod. The village contains a wide range of house sizes, from ones barely 5m in diameter to houses almost 22m in diameter (Hayden 1997:6). Like most complex hunter-gatherer societies, population size was estimated to be relatively high. Hayden estimates that the 25 to 50 individuals associated with simple forager bands would equal the number of residents in a single medium sized housepit at Keatley Creek. The community of Keatley Creek at its height could have been sixty times larger than a simple hunter-gatherer band (Hayden 1997:13).

Hayden suggests most of the evidence for social stratification is in the form of two distinct types of housepits and their specific layout. Large housepits as a group separate from the others, which indicates the presence of inequality (1997:49). The occurrence of large storage pits in some houses but not others provides an important clue as to the nature of past social and economic organizations at the site. This seems to indicate the residents of larger houses had a great deal more surplus food than residents of smaller houses (Hayden 1997:53).

Hayden, also, found the presence of roasting pits marked by shallow depressions usually filled with charcoal or ashy material, as well as fire cracked rock. He suggests that these pits may represent large-scale food preparation for unusually large gatherings of people at feasts. He speculates that most if not all the roasting pits are associated with feasting activities (Hayden 1997:54).

Another example of social complexity is the presence of what he considers prestige type items that seems to suggest some level of private ownership. He does admit, however, that there was not a large amount of evidence to this effect, but there were a few items made of precious stones. One such example is nephrite that has the look and feel of jade and happens to be one of the toughest stones to cut. It takes about an hour to cut a groove in nephrite only 1-2 millimeters deep, and would require hundreds of hours for a simple adze.

Hayden writes, "The unusual effort involved in procuring or manufacturing these items makes sense only in a society where these items are privately owned" (Hayden 1997:74).

Archaeological evidence from Keatley Creek suggests that the inhabitants exploited a wide range of resources (Hayden 1997:94). It also suggests that there were differential eating patterns dependent on status. The relative diversity of plant remains in various houses demonstrates that occupants of smaller houses used a far narrower range of plants than the occupants of larger house (Hayden 1997:100). Moreover, whereas small housepits used exclusively pink salmon, which is the smallest, weakest and easiest to procure, larger housepits had a mix of salmon types. They had pink salmon but they also had a substantial amounts of the more desired and highly valued sockeye and spring salmon (Hayden 1997:104).

As for the cause of social complexity at Keatley Creek, Hayden describes machiavellian type of individuals, who he calls "aggrandizers," who used food for their own personal gain and who excelled at developing schemes to use other people's surplus to increase their own wealth. He writes that these schemes could take the form of contractual agreements of debts (Hayden 1997:113). He argues the although these "aggrandizers" existed throughout human behavior, it wasn't until resources became abundant, and the means to store these resources developed, that allowed for the essential condition for complexity (Hayden 1997:111). Hayden contends that evidence of this comes from the indication of large feasts having taken place at Keatley Creek that suggests control of surplus food or wealth could be demanded under the guise of needing them for special events such as these feasts (1997:117). Also he writes that evidence of prestige like items "make sense in terms of feasting activities meant to lure others into debt". He argues that at the beginning there was a high instance of "transegalitarian" elite, yet as time progressed those who were more "genetically" adept at manipulation were able to gain more power until those who had power were only a few individuals (1997:116). In his words, "oo.it appears that elites became established by creating a broadly based privileged group with benefits wildly shared. Only after such groups were created could "aggrandizers" then progressively let go of less useful or productive families with out significant repercussion" (Hayden 1997:117).

Hunter-Gatherer Complexity at Levant

In the Natufian example archaeologist, Donald O. Henry focuses these complex hunter-gathers as a transitory step between simple foraging and agriculture. Whereas Hayden focuses on a single occupation of Keatley Creek,

Henry explains change through time from the simpler hunter-gatherer groups the Kebaran and Mushabian to the more complex Natufians. Likewise, as opposed to Hayden who focused on the sociopolitical struggle that manifested from the abundance of resources, Henry solely focuses on environmental changes and their impact.

About 14,000-10,000 years ago, in Levant, near the Jordan valley in modern day Israel, simple hunter-gatherers, gave way to complex hunter-gatherers. Simpler groups of the area display relatively thin cultural horizons, low artifact density, and occupy a wide range of areas. On the other hand Natufian sites are often quite large with thick, rich cultural deposits with evidence of semi-subterranean houses and storage pits (1985:372).

Henry compares the complexity of the Natufians and in particular the site of Lavant to their simpler foraging predecessors the Kebaran and the Mushabian. Henry writes that this growing complexity appears to have been related to the intensive exploitation wild cereals (emmer, wheat, and barley), and nuts (acorns, almonds, and pistachios). This reliance on storable resource is thought to have led to a more sedentary life (1985:371).

Artifact analysis suggests a greater intensification of food procurement. For example, tool analysis show that the Natufians become increasingly dependent on plant processing. Querns, grinding slabs, mullers, pestles, and mortars all found at the sites have been shown through ethnographic study have been shown to be used as implements of grain and nut processing. In fact, a study of dental diseases and attrition suggest a greater reliance on these processed plant foods (Henry 1985:372).

Demographic analysis suggests that although the Natufian's transitory sites contained thirteen to twenty six occupants, the larger sites could have contained upwards of one hundred and fifty individuals. There is also evidence of the Natufian moving into less productive, marginal, Mediterranean environments. Henry writes that this suggests an internal growth in the core Mediterranean zone (Henry 1985:374).

Although Henry does not go into detail about social organization he does write that analysis of burial patterns such as position, orientation, and context of burial within the site, identified a number of attributes that are commonly related to nonegalitarian societies. Burial paraphernalia, such as the presence of grave furniture that crosscuts sex, specific symbolic artifacts, and the association of elaborate grave goods with children, may give evidence of inherited status and perhaps subgroup differentiation (Henry 1985:375).

As for casual analysis, Henry takes his cue from the ecological approach to change. Henry argues that the most satisfying explanation is dependent on climatic and environmental changes at the end of the Pleistocene and its impact on the distribution of cereals and nuts. He writes that it was only when

cereals and nut bearing trees colonized the Mediterranean hill zone that they could achieve the density and predictability to allow for a more sedentary lifestyle. Henry suggests that the development of an intensive procurement strategy and sedentary settlement pattern would have resulted in rapid community expansion (Henry 1985:378).

Analysis of Two Case Studies

Although the Natufians and the people of Keatley Creek cover different time periods and environments, they have much in common. Both areas are abundant in their resources. Both show evidence of storage facilities, but it is unclear, whether it was a way of producing surplus for the purpose of ensuring inequalities, as Hayden contends. Evidence from Keatley Creek that storage pits were centered around larger housepits would suggest the latter. Likewise, both show evidence of at least semi-sedentary occupation. Although both show evidence of higher populations neither discuss evidence that would support nor refute Cohen's argument.

Henry's conclusion that hunter-gatherer complexity was an outcome of change in the environment due to the end of the Pleistocene ignores the fact that hunter-gatherer complexity crosses temporal and spatial boundaries. For example, evidence of hunter-gatherer complexity at Keatley Creek occurs some 7,000-9,000 years after the close of the Pleistocene. Likewise, hunter-gatherer complexity crosses environmental zones from the temperate zone of the Natufians to the semi-arctic conditions at Keatley Creek. Furthermore, recently there has been discussion as to whether the change in environment was that substantial at the end of the Pleistocene. Braidwood studied the identification of the physical effects of plants and animals and the documentation of the environmental events between 10,000b.c. (the close of the Pleistocene) and the appearance of "settled village life." This Study allowed Braidwood to conclude, "It seems most unlikely that there was any significant differences between then and now in general land-forms and rainfall patterns" (Binford and Binford 320).

Also, Henry's almost random explanation as to the rise of complexity seems simplistic. Even if abundance becomes available, it does not necessarily mean that social stratification will suddenly arise; after all, although the establishment of a hierarchical system has certain benefits it also has costs, such as loss of autonomy. Henry does not address why egalitarian societies would be willing to relinquish their autonomy. In fact, Henry seems to skirt the issue of the rise of inequality completely. Henry makes no claims of evidence of feasting or of differential access to resources. Nor, does he mention evidence of an increase in boundary defense, as some have argued is instru-

mental in growing complexity in hunter-gatherer societies. It is not clear, however, whether this is because of lack of evidence or mere oversight.

If Henry ignores issues of internal sociopolitical factors, Hayden can be faulted for ignoring environmental considerations. He does not go in depth as to the environmental factors that would foster a complex society. Although he does say the rise of a hierarchical system is dependent on food abundance, the only abundance of resources he mentions is the proximate location of the salmon runs. Yet, salmon is a seasonal abundance and not a year round one. Of the two, however, Hayden's explanation seems more convincing, if not for the sheer fact that it can be applicable to any time period and environment. Furthermore, he explains why social stratified systems develop even if it is at a cost. Kelly writes, "People do not acquire prestige, they are given it by others" (306). This may be true, but it is more likely that, given the cost, individuals would only surrender their autonomy by lure or coercion, and not simply by a random act. Hayden explains how this can occur through cultural practices such as feasting.

Henry (1985) is on the right track, however, in that he looks at change through time. If we are to better understand cultural complexity it is imperative that we understand the progression of social complexity. Clearly, if there is going to be a unification of theories as Marquadt has called for; there must be better recovery techniques. It seems that both archaeologists were looking for evidence that would support their own theoretical approach. Archaeologists must look for both environmental and internal factors as well. If we are able to rectify these gaps in the archaeological record, it may be demonstrated that Marquadt's idea of synthesis of sociohistorical and environmental factors, is the best explanation in that it covers all aspects of the human condition.

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