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Technological Introductions and Social Change: European Technology on the Great Plains

Andrew LaBounty

Abstract: This paper will explore the changing structure of American Indian society with the introduction of Euro-American technology and practices on the Plains. I intend to compare and contrast social aspects of Indian culture before and after contact, including the presence and intensity of marriage exchanges, levels of exogamy, the intensity of polygyny, and degree of stratification among native groups. These comparisons will shed light on the mechanisms of culture change, showing the entire process to be gradual and often due to conscious, immediately beneficial decisions.

Introduction

Technological introductions and innovations are a key aspect of cultural change, as technology tends to evolve according to cultural needs. In some cases however, technology has also been a primary *cause* of culture change. This has been especially evident in the Great Plains among the American Indians in the 17th and 18th centuries, as European explorers and traders introduced new technologies. These new tools, specifically the horse and the gun, wrought a series of changes that ultimately altered the social structure of all Plains Indians. What were these basic social changes, and how did they come to pass? What parts of Plains Indian society were actually affected by tools ostensibly used for hunting? This paper will examine both subtle changes and radical shifts in all aspects of society, and attempt to provide an overview of the changes in Plains Indian culture due to Euro-American technology. Armed with answers to these questions, anthropologists can begin to glimpse mechanisms behind culture change, and understand the myriad of effects that introduction and innovation can have on society.

To begin, the origins of the horse and gun in North America must be understood. According to Haines' extensive 1938 research regarding the horse's origins, many Indian tribes in the Western Plains

had access to Spanish horses by 1650 (in Ewers 1955). Diffusion took place from that point on, until the horse was nearly ubiquitous on the Plains, although not evenly distributed. The Apaches and the Utes in the west, for example, were among the first to obtain horses, but the Comanches and Kiowas further east were renowned for their skill with horses (Ewers 1955; Denhardt 1951). In those same areas of the Great Plains, firearms arrived much later primarily due to Spanish policy against trading guns, while the French to the east willingly traded firearms with Indians (Ewers 1992; Schilz and Worcester 1987). Thus, tribes near French and American colonial powers to the northeast could obtain guns, but horses were not available. In the west, Spanish traders refused to trade guns, but horses were plentiful. Although Secoy (1953) places the approximate date of gun introduction in the 1730s, it was not until the 1850s that supplies of horses from the west and guns from the east overlapped and equalized. Furthermore, as the two technologies diffused from opposite ends of North America, Indians who were able to obtain guns often traded them with other tribes for horses, in spite of the tactical potential of guns and the expense of obtaining one. Hence, guns were only the second most popular European item on the Great Plains at this time.

In keeping with its popularity, the horse also had a greater impact than the gun on Plains Indian social structure. It is true that firearms were the preferred weapons of hunters for their range and power; early in their history, ownership of only a few guns was enough to change the tide of battles between tribes. However, during battles between tribes with only horses and tribes with only guns, the horse was the deciding factor in that it created extremely mobile targets that few guns were able to hit (Secoy 1953). The horse was also a catalyst for the development of social classes on the Northern Plains, as well as increased levels of polygyny and bride price. As a hunting tool, horses allowed for a greater range in hunting area and superior speed during a chase. Hunters who could afford such a tool were substantially more successful than those who could not, leading to a situation in which the "rich" (i.e. the more talented hunters who have gathered prestige and wealth for use in trade) get richer (Hämäläinen 2003). Horses also shifted the focus of leadership, leading to changes in endogamy patterns and clan structure (Hämäläinen 2003; Ewers 1955).

In spite of being secondary to the horse, the introduction of the gun caused its own set of social changes along different lines. Warfare increased, and some tribes were forced into a nomadic lifestyle. Trade for firearms and other goods became an important aspect of tribal

economies, and in some cases took over entirely (Carlson 1992; Holder 1970; White 1978).

Putting the horse and the gun together, Indians found that hunting bison was easier with European technologies. Even agricultural societies, such as the Caddoans, Arikara, Mandan, and Hidatsa on the Northern Plains, kept horses to trade with nomads, and many even shifted to nomadism themselves if they could obtain a surplus of horses (Hämäläinen 2003). As these technologies became more widespread, definite culture change in many areas of society began to take shape.

The Horse and Culture Change

When the horse entered Blackfoot society in the Northwest, it replaced the dog as the primary domestic animal. Besides hunting, the horse was used for transportation and warfare, and like the dog, aided in moving camp (Ewers 1943, 1955). As it became more important to every facet of Blackfoot culture and surpassed the dog in usefulness, the horse ultimately became the single most valuable asset to a member of the Blackfoot tribe. In the early 19th century, Buffalo Back Fat warned his people,

Don't put all your wealth in horses. If all your horses are taken from you one night by the enemy, they won't come back to you. You will be destitute. So be prepared. Build up supplies of fine, clean clothing, good weapons, sacred bundles and other valuable goods. Then, if some enemy takes all your horses, you can use your other possessions to obtain the horses you need [quoted in Ewers 1955, 241; Hämäläinen 2003, 850].

This quote shows that there was, in fact, the temptation to place all of one's wealth in horses, and traditionally valuable goods were now being thought of as merely insurance against the loss of horses. This was for good reason: horses were valued on a practical level as a hunting tool, and one that ultimately became necessary in competition for game. To be "rich in horses" required at least 40 head in Blackfoot culture, and more generally, being rich required any number in excess of those required for subsistence (Ewers 1943, 1955). Among the Comanches and Kiowas further south, people who were considered rich owned "dozens or even hundreds of surplus horses" and were known as "*óngop*, the fine, distinguished, perfect, or best" (Hämäläinen 2003).

The Horse: Social Stratification

This major shift in the focus of wealth was a new cultural trait caused by the introduction of horses. Since it was a new method of transporting goods and a superior method of hunting, it became practically the sole measure of a man's wealth. Prior to the horse, during what Ewers (1955) calls the "Pedestrian Culture," the Blackfoot tribe did not have social classes per se. They hunted as a group, on foot, and shared the spoils equally. Men who were seen as supernaturally powerful, who could cure the sick for example, or those who were exceptional hunters probably had higher prestige and Greater political power. On the whole, however, the Blackfoot were a primarily egalitarian society (Ewers 1955).

After the introduction of the horse, social classes emerged. With the horse's ability to transport many more possessions between campsites, the Blackfeet were able to simply replace their dog-travois with an animal that fit the role even better. Because amassed fortunes could be easily moved with the camp, wealthy families with many horses could hunt more successfully and accumulate more goods with which to support their family (Ewers 1955). Wealthy men with valuable goods were able to pay for improved healthcare for their family from the medicine men, their wives could be medicine women in the Sun Dance, they could purchase membership in a men's society, and they could essentially buy traditional prestige in the form of ceremonial medicine bundles (Ewers 1955). A wealthy man could also loan one of his extra horses to a poor man, who would then hunt and share the spoils. Thus, in lean periods and in cases of illness or infirmity, a man with many horses would be able to supply his household with meat even without hunting (Ewers 1943).

This kind of social security did not exist pre-horse when a man had to hunt to be fed, so a new structure based on horse-wealth directly increased a rich man's fitness and that of his family. This trend was not limited to Blackfeet, as Comanche and Kiowa people to the south developed the same class system, in which rich individuals gave away goods and horses to obtain wives, slaves, prestige, political support, and ultimately become leaders of their band (Hämäläinen 2003).

While an emergent system of class distinction characterizes the post-horse culture of the Northern Plains, it was less pronounced in the Southern Plains due to a custom of reciprocity. While both the north and south did have similar reciprocity traditions prior to the horse, Hämäläinen (2003) points out that the horse was often not included in the circulation of food and trade goods among people in the

Northern Plains, but were only exchanged among kin, leading to wealthy families and an elite class. In the Southern Plains, where horses were initially introduced and were relatively abundant, they became just another part of the economy and were exchanged like other goods, such as food, between households. This flow of horses prevented the rich from controlling access to them, and thus prevented the adoption of rigid social classes (Hämäläinen 2003). In the Southern Plains then, horses had a less drastic effect on society in general because they did not spur sharp class distinctions.

Of course, the development of an upper class implies a lower class. In Blackfoot society, the poor became those who owned fewer than five horses. In fact, the overall wealth of the poor did not necessarily drop after the introduction of horses, but the gap between rich and poor widened abruptly and quickly became rigid (Ewers 1955). The rich loaned horses to the poor to increase their own prestige through generosity, and to receive payment via food sharing and gifts, but they also controlled the redistribution of horses captured during raids, and were able to defend their own herds from raids (Hämäläinen 2003). In this way, the rich were able to remain rich and force the poor to remain horseless, essentially making class distinctions permanent. The new rigid class system did leave room for those in the middle class, but they too were often stuck there permanently, again because they were forced to borrow the best and fastest buffalo horses from the wealthy in order to hunt successfully (Hämäläinen 2003).

The Horse: Polygyny

This new class system also afforded the wealthy several new options regarding marriage. Among the Blackfeet, a low sex ratio caused by warfare and dangerous hunts did allow for polygyny in the pedestrian culture, but it was enhanced drastically by the advent of horses (Ewers 1955). Wealthy men were suddenly able to support more than three wives if they had a large enough horse empire, an unprecedented situation in pedestrian culture. Any excess wives (more than three) were called “slave wives” by the Blackfeet (Hämäläinen 2003). Slave wives took care of the horses, tanned bison hides, prepared meat, and had unusually low status in the household (Hämäläinen 2003). This situation is mirrored by the Comanche as evidenced by Post Oak Jim, a Comanche informant who once remarked, “some men loved their horses more than they loved their wives”(quoted in Hämäläinen 2003, 841).

Polygyny also increased among agricultural groups like the Caddoans, who acted as middlemen in nomadic trade agreements. Women gained prestige not through cultivating their gardens, but through tanning and finishing hides for trade (Carlson 1992). Wealthy men were then compelled to take extra wives for access to more finished trade goods, spurring an increase in polygyny designed to increase the wealth of the husband. Furthermore, as men hunted for hides and women worked them, the new division of labor caused gardens to go unused as more and more meat was brought to the village (Carlson 1992). These issues of labor division will be revisited below, because although the horse played a substantial role in dividing labor along new lines, guns and nomadism influenced this aspect of society more keenly.

The Horse: Bride Price

In spite of the disadvantages of polygyny and the general attitude toward "slave wives," poor families attempted to marry their daughters into wealthy in hopes that the marriage transaction would involve a gift of horses to the poorer family in exchange for their daughter (Ewers 1955). In Blackfoot marriage exchanges, it was customary for parents of either the male or female to provide gifts to the other family (Ewers 1955). It was a matter of honor for the return gift to exceed the first in value, so after European contact, horses were often part of the arrangement and poor families may have hoped to net a profit, since these exchanges often escalated to as many as 40 horses given to one family (Ewers 1955). This extreme exchange of goods may represent inflation, in that very wealthy families could afford to be generous like never before. To the poor, horse-wealth provided an incentive to demand what functionally becomes bride price, in which a groom's family provides goods or services to the bride's family before marriage, as opposed to the previously balanced and ceremonial exchanges of pre-horse Blackfoot culture (Ewers 1955). An unbalanced marriage exchange represents one of the ways a poor family could obtain horses and thus achieve a higher status, but it was not widely successful. Despite hypergamous attempts by the lower class, most marriages took place between people of the same class level (Ewers 1955).

The Horse: Endogamy

In addition to economic class endogamy, marriages after the introduction of the horse were typically formed between members of

the same clan—that is, Blackfeet began to practice clan endogamy (Ewers 1955). This represents yet another social change, in that Blackfoot pedestrian culture always stipulated marriage outside of a clan, but the use of horses, in part, reversed this (Ewers 1955). Prior to the advent of horses, exogamy was designed to maintain blood relations within a patrilineal clan. Women left home, and men stayed near their extended families after marriage. After the horse was introduced along with coincident diseases, endogamy was widely permitted by the Blackfeet to bolster the population of clans in the wake of high death rates.

After diseases had run their course, clans still remained endogamous because of new differences in leadership (Ewers 1955). As we have seen, the horse brought an increase in stratification to Indian society. With stratification of wealth came an obligation for the rich to help the poor, for the sake of their own prestige (Ewers 1943). Clan leadership, then, was based on generosity, and poor people were willing either to switch allegiances or to continue practicing endogamy depending on which leader was more able or willing to support them with horses (Ewers 1955). In short, anyone without horses was willing to break with tradition and stay a clan in which they could prosper, regardless of past exogamy rules, leading to large groups of unrelated families rather than traditional clans.

The Gun and Culture Change

The preceding discussion of changes in social complexity conspicuously avoids the gun. While firearms were an improvement in some ways over the bow for hunting and warfare, they were not as ubiquitous as the horse, and they were expensive. The Spanish aversion to selling firearms has already been cited as a reason for their scarcity (Ewers 1992; Schilz and Worcester 1987). Guns therefore diffused primarily from the northeast of the continent and were never used as the Indians' primary weapon in the southwest (Schilz and Worcester 1987). Nevertheless, Indians were very skilled in the use and maintenance of European weapons (Schilz and Worcester 1987; Bleed and Watson, 1990), and it has been said that during the fur trade, "every Indian had to have one if he could afford it" (Ewers 1971, 138).

To summarize, if horses were the greatest assets to Indians after contact with Europeans, guns were the greatest luxury. For the Blackfeet, taking an enemy's gun in battle was the new and best way to count coup for Great honor, although horses were the real determinants of a man's wealth (Ewers 1955). Even a Blackfoot with few horses

could own a gun, albeit of inferior quality, but he was still considered poor (Ewers 1955). Chiefs, on the other hand, were able to afford many guns; Sitting Bull is said to have had at least five when he was killed (Ewers 1971). Unlike the horse, the gun did not drastically improve hunting, and was certainly not necessary. It was slow to reload, difficult to repair, and was extremely noisy. Furthermore, Indians were only allowed access to the worst, least accurate weapons available at the time. For these reasons, the bow existed alongside the gun well into the 18th century (Holder 1970). Nevertheless, guns provided a hunter with superior range and firepower, even if they lacked accuracy and speed.

The Gun: Warfare and Nomadism

Despite its dubious utility in hunting, the gun had a critical impact on warfare. Its range and power, as well as its shocking noise, allowed some tribes to gain power over others, pushing them off of their land to secure hunting grounds (White 1978). This left relocated tribes to adopt horse-mounted nomadism in order to survive in their new environment (Carlson 1992). In the hands of nomads, the gun was also instrumental for stealing already domesticated horses from other tribes, and for taking hostages to trade with Europeans as slaves (Hämäläinen 2003). For the Utes, this kind of violence became a necessity as they attempted to defend themselves from mounted nomads and avoid Spanish slavery. They began to take up nomadism themselves, lived in smaller groups, and eventually made an alliance with the Comanche, forming one of the largest political units on the Plains (Blackhawk 2007).

For sedentary agricultural tribes in the Central Plains like the Caddoans, Osage, and Cheyenne, newly armed and horse-mounted nomads radically shifted not only the method, but also the aim of subsistence. For example, after the gun was introduced, Cheyenne horticultural communities were pressed westward by conflict until they finally adopted a nomadic lifeway of their own (Carlson 1992). As they made the switch to horse-mounted hunting after generations of sedentary life they were able to maintain matrilineal clans, but like the Utes, only in smaller hunting groups (Holder 1970). Furthermore, the Cheyenne began to hunt not only for food, but also for bison hides and other valuable items that they could trade either with horticultural communities, or directly with Europeans (Carlson 1992). This generated a change in the division of labor, as men did the hunting and women cured and prepared the hides for trade (Carlson 1992). As

discussed before, such a switch in the division of labor plus the development of social classes can lead to increased levels of polygyny for wealthy males.

The Gun: Trade

While some tribes became nomadic via guns and horses, others did not. The Caddoans and the Osage, for example, maintained their horticultural practices, but with some very specific and adaptive changes (Carlson 1992). Rather than the purely sedentary and horticultural practices of pre-contact society, these groups began to use horses and guns as items of trade with nomads, and to hunt for their own trade goods (Carlson 1992). In most cases, horticultural subsistence took a back seat to procuring such items for trade, and societies began to produce only enough food to get by, trading what remained for firearms and other goods (Holder 1970). The reasons for this alternative response are not clear, but it was clearly facilitated by nomadic hunters who needed these technologies. Thus, horses and guns provided an incentive to trade, and made it possible for horticultural communities to increase their commercial wealth without altering their basic subsistence structure. For groups without an excess of guns and horses, such inter-tribal trade became the primary mode of subsistence and economy.

Conclusions

When Europeans came with guns and horses to the Plains, the horse emerged as the more desirable of the two. It was a stronger and faster animal than the dog, was easily trained, and facilitated both transportation and warfare (Hämäläinen 2003). Some tribes used the horse to further their nomadic customs, and some switched to nomadism for the promise of trade goods. Still others began to develop a class system, leading to increased polygyny and bride price (Ewers 1955). In Southern Plains tribes where it was first introduced and was relatively abundant, the horse appears to have had a mitigated effect due to reciprocity traditions (Hämäläinen 2003).

On the other hand, the gun was often the aim of commercial trading, and fueled conflict on the Plains that further pressured societies to trade with Europeans, often necessitating nomadism and larger alliances, as in the Ute-Comanche Alliance (Blackhawk 2007). Simultaneously, horticulturalists like the Cheyenne and Utes were forced to live in smaller local groups to chase game, while attempting

to maintain their traditional descent groups (Blackhawk 2007, Holder 1970). Finally, the gun encouraged a sharp division of labor based on a form of commercialism (Carlson 1992).

In each case, culture change took place due to a technological innovation. Hunters in particular were pressured to use the horse as more successful individuals began to parlay their wealth into horses, leading to even greater hunting success and thus extreme wealth. Such wealthy hunters could ultimately afford guns, which represented a new and exciting way to hunt with potential benefits for the experienced user. Warriors, too, needed horses and firearms to compete in warfare with neighboring groups, owing to the combination of range, power, and speed offered by European technologies. Thus, Indians made conscious decisions regarding their use of horses and firearms, and as a result, all these myriad aspects of society began to take shape and evolve.

It is worth noting that the culture changes described here could have taken place without a physical European presence. As far as this research goes, European Americans did not actively affect Indian culture and social structure; only European technology did. Clearly, Indians did not immediately adopt European standards of wealth and stratification when they traded for horses and guns. Instead, the presence of the horse and the gun led Indians to choose new methods of hunting and warfare that benefited them immediately and individually. As a result, cultural change took place because of these apparently beneficial and often fundamentally necessary decisions. It should come as no surprise that Indian culture changed dramatically as a result of European contact, but this research shows that one primary reason for such dramatic change was the Indians' keen ability to incorporate new technologies into their own culture with such speed and success. By carefully tracking the effects of technology and other introduced cultural traits, we can see a step-by-step process of culture change that is both logical and understandable. Even so, technology is but one aspect of culture that can have far-reaching consequences over time; there are many others including biology, ecology, and ideology, all of which are applicable to Great Plains studies. In order for the mechanisms of culture change to be fully appreciated, we must examine such changes from all sides.

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