Abstract. Frederica de Laguna’s archaeological, ethnographical, and ethnographic research has provided us a rich record of the importance of metal, especially copper, to Native Alaskans. This paper provides a brief review of some of de Laguna’s thoughts on metal, its use and time of appearance in far northwestern North America. Additionally, this paper provides a discussion of the relationship between copper and Ahtna Athapaskan social complexity. This discussion builds on relevant anthropological work in the region by de Laguna and others and examines this information in conjunction with a more general discussion within archaeology about the relationship between metals and social complexity.

Introduction

Several scholars have discussed the use and first appearance of metals (namely copper and iron) in northwestern North America (e.g., Franklin et al. 1981a; McCartney 1988) and especially the Northwest Coast (e.g., Acheson 2003; Jopling 1989; Keddie 1989; Keithahn 1964; Rickard 1939; Wayman, King, and Craddock 1992). Though metallurgy may not have been a focus of Frederica de Laguna’s research, the use of iron and copper by indigenous groups in Alaska was a topic she addressed periodically over her career. As a result, much of what is known about the prehistoric, proto-historic, and early historic use of copper and iron in the region is due to her prolific research (Birks-Smith and de Laguna 1938; de Laguna 1934, 1956, 1960, 1972; de Laguna and McClellan 1981; de Laguna et al. 1964, Emmons 1991[edited by de Laguna]).

Prior to the arrival of explorers and fur traders in far northwestern North America in the eighteenth century, copper and iron were both highly prized among indigenous groups. Much of the copper used by the indigenous peoples of northwestern North America is believed to have originated from the copper-rich region of the Wrangell and Saint Elias Mountain ranges, which includes the Chitina and White Rivers. This vast region contains many localized sources of native copper (i.e., metallic, 99+ % pure) used by resident Athapascan groups such as the Ahtna, Tutcheone, and Tanana (de Laguna 1972; de Laguna and McClellan 1981; de Laguna et al. 1964; Emmons 1991; Grinev 1993; Keithahn 1964; McClellan 1975; McKennan 1959; Rickard 1939; Shinkwin 1979; Townsend 1980). Native copper from this region, obtained primarily as nuggets from streambeds, was traded to groups on the northern Northwest Coast such as the Yakutat and Chilkat Tlingit (de Laguna 1972; de Laguna et al. 1964; Emmons 1991; Legros 1984; McClellan 1975) and reportedly was traded as far as the Queen Charlotte Islands (Brooks 1900).
This paper is a brief review of de Laguna’s archaeological fieldwork in Alaska relevant to the topic of metal and a discussion of the relationship between copper as a prestige good and social complexity (specifically the development of hereditary rank) that makes use of information gathered by many researchers, especially de Laguna. This discussion focuses on the potential use of copper to not only demonstrate, but also to create, differences in individual prestige and its potential role in the development of hereditary rank among the Ahtna Athapaskans. However, the relevance of this discussion is not limited to Ahtna ranking but has wider application within anthropology and archaeology as a connection between metal prestige goods and social complexity has been proposed in a variety of forms (Budd and Taylor 1995; Childe 1942; Nakou 1995; Renfrew 1972; Sherratt 1994). Additionally, archaeologists have considered metal from archaeological contexts as a suitable vehicle for examining notions such as value, prestige, and power (Pydyn 1998; Voutsaki 1997).

**de Laguna’s Research**

Early in de Laguna’s Alaskan research she recovered metal (both native copper and iron) from archaeological contexts in south-central Alaska and commented on the potential source of this material. Fieldwork performed in 1931 and 1932 recovered five copper artifacts from the Yukon Island site (Alaska Heritage Resources Survey # SEL-001) in Kachemak Bay (de Laguna 1934), and in 1933 five more were recovered from the site of Palugvik (COR-001) and one from a site on Montague Island (SEW-081), both in Prince William Sound (de Laguna 1956). Additionally, de Laguna learned of copper artifacts from two additional sites (SEW-072 and SEW-077) in Prince William Sound from Mr. H. J. Lutz of the U.S. Forest Service (Fig. 1). Fieldwork near Angoon in southeastern Alaska in 1950 recovered two artifacts of copper, one each from the sites of Daxatkanada (SIT-244) and Ganax Women’s Fort (SIT-135) (de Laguna 1960) (Fig. 1). During archaeological fieldwork in Yakutat Bay in 1952–1953, one copper artifact was found during testing at the site of Little Fort (YAK-009) and 48 specimens were recovered during excavations at the site of Old Town (YAK-007) on Knight Island (de Laguna et al. 1964) (Fig. 1). All of the copper artifacts recovered by de Laguna from these sites were considered by her to be native copper from late prehistoric or proto-historic contexts. Both Prince William Sound and the Copper River region were discussed as potential sources (de Laguna 1934, 1956, 1960; de Laguna et al. 1964).
Figure 2. Northwest Coast showing sites mentioned in text.
Key: 1) Little Fort Island YAK-009, 2) Old Town YAK-007, 3) Daxatkanada SIT-244, 4) Ganax Women's Fort SIT-135, 5) Sitka, 6) Prince Rupert Harbor, 7) Victoria.
It should be noted that the extent to which the copper-rich region of southeastern interior Alaska and southwestern Yukon has been credited as the source for copper found in archaeological contexts throughout the Northwest Coast may be an exaggeration as native copper is present further south on the Northwest Coast (e.g., sources cited in Acheson 2003; Hayden and Schulting 1997; Sanger 1970; Wilson and Carlson 1980). Additionally, the use of native copper further south on the Northwest Coast at Prince Rupert Harbour (Ames 2005:234) predates the appearance of native copper at the Old Town site (YAK-007) in Yukutat Bay by more than 2,000 years (de Laguna et al. 1964:202–206) and in the source area of south-central Alaska and southwestern Yukon by as much as 2,000 years (Hanson 1999; Workman 1976:142–145, 1977, 1978) (Fig. 2). This difference in the timing of the appearance of copper in the northern and southern portions of the Northwest Coast was noted by de Laguna et al. (1964:204) stating, “...there is no necessary connection between the copper work in these areas.”

Nineteen pieces of iron were also recovered during excavations at Old Town (YAK-007). De Laguna’s examination of historical accounts, which make note of the abundance of both copper and iron among groups living in Prince William Sound and Yukutat Bay in the latter part of the eighteenth century, combined with Native oral history, led her to propose three possibilities for how iron became available to Alaska Natives prior to Bering’s voyage in 1741 and the ensuing fur trade: 1) trade with Siberia via Bering Strait; 2) trade directly between Russian, Chinese, or Japanese ships and Aleut or Pacific Eskimo people; and 3) the “most likely” source according to de Laguna (de Laguna et al. 1964:203) drift iron, that is, iron obtained from the washed up remains of wrecked sailing vessels, presumably Russian, Chinese, or Japanese in origin (de Laguna 1956, 1972; de Laguna et al. 1964). In addition to her archaeological fieldwork, de Laguna’s ethnographic work in Alaska added a great deal to our understanding of the use, importance, and value of metal to indigenous groups and its association with ranking.

**Ahtna Rank and Social Complexity**

Use of the term *social complexity* and the archaeological identification of rank suffer from problems of definition. Chapman (2003) provides an excellent synopsis of the poor definition of social complexity by archaeologists in his review of relevant literature from the Mediterranean, especially Spain. When social complexity is defined at all, it is often described in dichotomous terms (unequal vs. equal, egalitarian vs. non-egalitarian) that fail to describe accurately not only the range of human societies, but variability within a society (Chapman 2003). Social complexity is restricted in this discussion to the development of hereditary rank. According to Fried (1967:109) “a rank society is one in which positions of valued status are somehow limited, so that not all those of sufficient talent to occupy such statuses actually achieve them.”

Ahtna society has been characterized as highly stratified (de Laguna and McClellan 1981; Reckord 1983), especially among the Lower Ahtna, who occupied the lower portion of the Copper River valley north of the Chugach Mountain range, and the area drained by the Chitina River. The stratified character of Ahtna society was attested to by early travelers to the Copper River region (Allen 1884:52; Grinev 1997:14). The Ahtna situation is remarkable in comparison to other northern Athapaskan groups, who are generally characterized as less socially complex (i.e., more egalitarian) than neighboring groups on the Northwest Coast. However, there is great variability among northern Athapaskan groups (Ives 1990) and the emphasis on ranking among the Ahtna is not entirely unique as it has been noted for other groups (cf., Fall 1987 and Townsend 1980 for the Dena’ina; Legros 1985 and McClellan 1975, 1981 for the Tutchone; Bishop 1987 for the Carrier).

A useful term for examining rank among the Lower Ahtna is “transegalitarian.” Hayden (2001) defines this as a society that has significant ownership of private property, minimal sharing, and a wealth-based hierarchy that has become institutionalized, though kinship is still an important factor in the establishment of hierarchy. Thus, transegalitarian societies differ from egalitarian societies mainly in the extent of sharing and the ownership of private property. What differences there are in social standing in an egalitarian society are a result of age, sex, personality, and perhaps birth order. Though, as Chapman (2003:76) stresses, inequalities do exist in societies categorized as egalitarian with the result that it is crucial “to make distinctions between egalitarian relations, societies, and ideologies, and to recognize that all societies may exhibit tensions between egalitarian and hierarchical relations.” Though non-food resources may or may not have been shared, food sharing within Athapaskan society can be characterized as pervasive (e.g., McKennan 1959:50–51; McClellan 1975:114; Savishinsky and Hara 1981:320) and would have likely been an obligation for someone in a position of leadership (Fall 1987:40, 46). With this qualification, the picture of Lower Ahtna society obtained from historic and ethnographic sources fits the definition of a transegalitarian society making it a useful concept for discussing the emphasis on, and development of, ranking and hereditary leadership.
Metals as Prestige Goods

A key indicator used by archaeologists to identify socioeconomic inequality, and by extension rank, is the presence of prestige goods. According to Hayden (1998:11) the purpose of prestige technology “is not to perform a practical task, but to display wealth, success, and power.” The main motivation for the manipulation of prestige technologies and goods is the achievement of social goals. An important focus for Hayden is the notion of an “aggrandizer,” someone who attempts to acquire power in a society. An aggrandizer uses prestige goods not merely as a sign of wealth, but to create situations of indebtedness and obligation and to support economic and subsequently political inequality (i.e., power) (Hayden 1998). As Pidyn (1998) stresses, prestige goods must be not only recognized by everyone in society, but also associated with a specific individual owner.

In discussing the gold artifacts from the Balkan Chalcolithic cemetery at Varna, Renfrew (1986) points out that, although they may have been valued for their association with specific individuals, the fact that many of these artifacts were made of gold is significant. Gold is often found to have prime value in a number of cultural contexts, as does silver, copper, shell, jade, and various refractive stones. Renfrew notes that these materials are rare, durable, and somehow satisfying to view. Like Renfrew, Hayden discusses the qualities of prestige goods as those having wide appeal and uses the phrase “pan-human aesthetic responses” in describing their effect. He points out the use of “shiny or bright” (Hayden 1998:13) materials such as metals, shells, and certain minerals for prestige goods. Since prestige goods are to be shown in community contexts, they must have striking visual qualities. It can be argued that part of the value of metal, and more specifically copper, is a result of its durability, rarity, and visual appeal. The question of how an object or material acquires value within a society, however, is still open.

The Value of Prestige Goods

Pydyn (1998:97) states “value, like prestige and power, belongs to those categories which are very difficult to define but which at the same time all of us recognize.” The determination of what has value is subjective, though some values may have “absolute or universal character and very often they form the basis for social communications and social relations” (1998:97).

For Marx (in Voutsaki 1997), value was closely bound to labor. An object’s value was formed during production. In societies without market or monetary economies where labor cannot be bought and sold, this definition is deficient since labor is not itself a commodity. This being the case, the concept of value as defined by economic exchange involving cost and price has limited validity when looking at these societies. Unlike cost, value is dependent on cultural and symbolic factors (Voutsaki 1997). Building on Marx (1970 [1867]), Renfrew discusses different aspects of value. First of all, value is a property of an item that is ascribed arbitrarily by an individual or a society and is dependent on the social context. The ascribed value can be a result of the future usefulness of the object (use value), or the amount of effort required for its production (labor value). In examining prestige goods Renfrew highlights an additional kind of value. Following Appadurai (1986) he uses the term prime value for “those materials that in a given culture are regarded as having intrinsic value” (i.e., prestige goods) (Renfrew 1986:159). Renfrew points out that “no materials have a universal intrinsic value...prime value is thus the equivalent of ascribed intrinsic value” (Renfrew 1986:159).

The circumstances under which an object or material comes to have prime value has been addressed in anthropology within the context of gift exchange. The work of Mauss (1990) was crucial in examining the role of gift exchange in the foundation of both prestige and power. Gift exchange differs from exchange in a monetary or market economy in that it is driven by reciprocity. This reciprocal exchange of gifts does not take place within a single trading event, but, instead, on a regular and uninterrupted basis over time. Within a system of gift exchange, access to prestige goods is limited by the coexistence of multiple ranked and exclusive categories of exchange items. Flexibility is introduced by the ability of individual participants in a transaction to be successful with the result that a prestige good is dependent on personal competency in exchange. Within a system of gift exchange the exchange of goods, though delayed, must be of equal or higher value. Goods, therefore, have an “exchange order” (Voutsaki 1997:36) instead of a strict value. Since direct equivalence is not a factor, as in a monetary economy, the value of an object is less restricted. The history of an object is part of what makes it valuable. It then follows that value can continue to accrue for an object long after it was produced. The value of an object is formed during the actual process of exchange. Voutsaki (1997) points out that this value cannot be divorced from the context of the exchange of gifts. The social status of participants is what is crucial in gift exchange, not just the value of the object. In this way prestige goods and elites, individuals of high rank, are created and defined in a mutual and simultaneous fashion (Voutsaki 1997). The preceding ideas regarding value, especially the emphasis on an ob-
ject’s history and association with an individual, are relevant for a discussion of Northwest Coast Coppers.

Northwest Coast Coppers

Though this discussion has been primarily concerned with native copper, a review of the data concerning Northwest Coast Coppers is useful for discussing both the value of copper and the relationship between copper and high status or prestige in northwestern North America. Though variable in size these shield-like objects could be as large as 36 in. × 24 in and were found among the Tlingit, Haida, Tsimshian, and Kwakiutl groups of the Northwest Coast (Duff 1981). Coppers were the most highly valued form of material culture and were considered to be the most desired object of exchange (de Laguna 1972; Emmons 1991).

De Laguna notes that there are 135 Coppers known from museums (Emmons 1991). At least 125 of these have been subjected to metallographic examination confirming that they were made of non-native commercially produced industrial metal (Couture and Edwards 1962, 1963; Jopling 1989; Wayman, King, and Craddock 1992). Despite the lack of examples made of native copper, the owners of these objects often referred to the Chitina and White River region as the source of the copper. When the use of trade metal was acknowledged by Natives, it was emphasized that those made of native copper were more valuable (de Laguna 1972; Emmons 1991). Such statements regarding the authenticity and relative value of Coppers may have more to do with their use and validation through exchange and display rather than with the fact of their actual composition being made of native copper (de Widerspach-Thor 1981).

Initially, copper traded to Natives via Russian posts and vessels of various nations came in the form of kettles, pots, and smaller objects (Jopling 1989). By the mid-eighteenth century copper sheathing began to be applied to the hulls of British ships in order to prevent sea worm boring and to keep them smooth to promote greater speed (Knight 1973). As a result, there was an increase in the amount of sheet copper already carried by ships for repair purposes. When fur traders arrived on the Northwest Coast in the late eighteenth century and discovered that the value accorded copper by indigenous groups was much greater than that warranted based simply on the weight of the metal, copper became important for trade. Eventually, Coppers were manufactured using sheet copper (Emmons 1991; Jopling 1989). Beginning in the 1770s sheet copper, initially from vessels involved in the maritime fur trade, flooded the Northwest Coast. Early in the nineteenth century sheet copper was available from the Russians at Sitka, and by the mid-nineteenth century was also obtained from the English at Victoria (Jopling 1989; Keithahn 1964; Mackenzie 1891; Rickard 1939). Due to the availability of large quantities of sheet copper from multiple sources, demand for it had dropped significantly as early as the 1790s (Keithahn 1964). Eventually, perhaps not until the mid or latter part of the nineteenth century, the value accorded Coppers decreased (Mackenzie 1891; Rickard 1939).

Coppers were first noted in 1787 by Colnett in the southern Queen Charlotte Islands and then in 1793 by Mackenzie in Bella Coola villages. The earliest published account of a Copper is from Lisiantsky who was in Sitka, Alaska in 1804 (Emmons 1991). According to Rickard (1939), Coppers were never made of native copper and appear only after 1774 when the Northwest Coast became inundated with trade copper. While acknowledging that Coppers were largely a post-contact phenomenon, based on descriptions provided by informants in Yakutat Bay, de Laguna (1972) suggests that smaller forms actually made of native copper could have preceded them.

The Value of Coppers

The value of a Copper increased every time it was displayed, given, traded, or sold, and they generally were moved from north to south along the Northwest Coast. Their value increased during a potlatch in proportion to the value of goods distributed to guests. The inscription of totemic designs, most often lineage or house crests, also contributed to their value. Indeed, although only chiefs are supposed to have owned Coppers, they were considered to be lineage property (Emmons 1991). In 1804 Lisiantsky gives the value of a Copper as 20–30 sea otter skins, which may have been a common way of figuring value within the context of the Russian fur trade (Emmons 1991). In the late nineteenth century a Copper was worth 10 slaves or 1000 blankets (Mackenzie in de Widerspach-Thor 1981) suggesting that some particular Coppers may have retained their value even after the region was flooded with trade copper.

There are two instances of copper (or Coppers, depending on the interpretation) being used to purchase territory. An Ahtna sib from the Chitina area (ancestors of the Kwackwan) purchased the Humpback Salmon Stream in Yakutat Bay with either a Copper or possibly a large nugget (worth ten slaves) that required six men to carry it from the Tana River (Keithahn 1964; Swanton 1909). In another version of this transaction the stream was purchased with either sea otter furs and Coppers, or with a large canoe hung with seven Coppers on each side, each Copper worth 10 slaves (de Laguna...
1972), In a separate transaction the Drum House of the Teqwedi purchased their lands at Ahrnklin River with a single Copper measuring the length of an arm from finger tips to the chin, which was worth 10 slaves (de Laguna 1972). According to information provided to Harrington by Jack Ellis and quoted by de Laguna, “the southern Indians did not have copper... when they came to Cordova region [eastern Prince William Sound] they bought it... just a little flat piece six inches long and wide was worth a slave” (1972:354), suggesting that the high value accorded native copper pre-dates the existence of Coppers.

**Conspicuous Consumption**

Prestige technology frequently produces items that are destined to be destroyed through a sacrificial offering or buried during a high status funeral, both community events (Hayden 1998). It is within these contexts that aggrandizers seek to show their economic and political achievements. According to Hayden (1998:15), in a transegalitarian society a great deal of “social information symbolized in material culture may be prestige related.”

Voutsaki (1997) also concentrates on the relationship between the value of metals and their use, not only in demonstrating, but also in creating social complexity. She approaches the socially constructed notions of “value, power and prestige” (Voutsaki 1997:34) through an examination of archaeological metal. For her, power is tied to the concept of value. Specifically Voutsaki asks what gives an object or material value and attempts to determine the relationship between the value of material things and the prestige of people. Though the value of an object may be related to the labor of production, value also accrues to an object as it moves through a gift exchange system and again when it is consumed. Consumption can take one of two forms, either destruction or deposition during a ritual event such as a funeral or sacrificial offering. Consumption dramatically changes the value of an object by removing it from the system of gift exchange. Destruction and deposition fixes the value of an object and turns it into social value. Removing prestige goods from the gift exchange system may balance economic inequality but creates social inequality, i.e., prestige. Consumption can be seen as a symbolic accumulation (Voutsaki 1997). Furthermore, conspicuous consumption must be viewed by the community in order to be effective. According to Pydyn (1998:100), “a value is not created by a secret accumulation of goods but by public consumption and use (or even waste in the modern sense).” He finds that in the Baltic Bronze Age the greatest value of a bronze object may only have been attained when it was symbolically destroyed during burial at a funeral or sacrifice. Conspicuous consumption is not an expression of social inequality but is instead a tactic used to create it (Voutsaki 1997).

The preceding discussion is fitting for an examination of Coppers that could be consumed in a number of ways. A Copper could be thrown into the ocean (Duff 1981), or broken at a potlatch with the detached pieces given to the higher status guests. It could be completely destroyed or removed from circulation by placement on a mortuary pole or grave house (Emmons 1991). Coppers were used to accrue prestige at public events in the same manner as slaves and, like slaves, could be freed (removed from the trade circuit) or destroyed/killed. In fact, within the context of a potlatch, the gift-giving that is most directly related to personal prestige is the freeing (or killing) of slaves, and, one could add the destruction of Coppers (Tybjerg 1977).

**Geography and Value**

In Tybjerg’s (1977) discussion of the Tlingit potlatch he points out that the greater the distance traveled by the guests to attend the event, the greater the prestige conferred upon the host. Similarly, objects procured from greater distances were seen to be more prestigious than those locally obtainable (cf., Helms 1988 for a general discussion of the relationship between distance, knowledge, and power using ethnographic and historic sources). Though the value accorded objects during a potlatch was often tied to their display of clan symbols, it was also related to their status as an imported object. Access to materials only obtainable through trade was a prerequisite for occupying a prestigious position. According to Euroamerican fur traders, Northwest Coast Natives insisted on lengthy ceremonies prior to the actual trading of goods. These ceremonies included the display of ceremonial gear, often with clan symbols, by Chiefs—individuals occupying hereditary positions of high status. Copper was often used in the manufacture of ceremonial objects such as masks and headpieces. The ownership of ceremonial gear was a prerequisite for managing intra-group trade and trade was a prerequisite for obtaining the goods that gave prestige. This cycle allowed high status groups and individuals to maintain their monopoly on prestige goods (Tybjerg 1977).

Referring to Bronze Age northern Europe, Pydyn (1998) stresses that objects only became valuable when they were removed from their area of origin during long-distance trade. Thus, he echoes Tybjerg in the belief that the control of trade is crucial in obtaining prestige goods and prestige would come to rest with the office of chief rather than in a specific individual (Pydyn 1998).
Coast-Interior Trade

The body of literature dealing with social complexity (i.e., the development of rank) in northwestern North America, especially the Northwest Coast is extensive. Some of these ideas, though not concerned with metal specifically, are particularly relevant for discussing the relationship between copper and ranking. Similar to Tybjerg (1977) and Pydyn (1998), Bishop’s (1987) discussion of rank on the Northwest Coast of North America emphasizes geography and trade. During the protohistoric period ranking developed among groups living in the interior of British Columbia as a result of their interaction with coastal groups within the context of the fur trade. Using the protohistoric Carrier Athapaskans for his discussion, he argues that the inter- and intra-group exchange of prestige goods involving a system of trading partners, created rank. Because the coastal trading partners of the Carrier (Tsimshian and Gitksan) already had hereditary positions of high rank, similar positions developed among the Carrier, creating equals for the purpose of facilitating trade in the form of reciprocal exchange (Bishop 1987). In an analogous situation, the higher ranking individuals among the Chilkat Tlingit—geographically in a position to monopolize the southern movement of copper from both the Copper and White River regions—established trade relationships with Athapaskans through marriage (Tybjerg 1977).

Bishop proposes that inherited positions of rank among coastal groups were a result of the monopoly on prestige goods by individuals who managed to transfer those monopolies across time, bestowing them on succeeding generations. The Carrier had beaver skins, which the coastal groups desired for exchange directly with Euroamerican fur traders. As a result of the importance of beaver skins, access to beaver hunting grounds became restricted among the Carrier. The public potlatch was used by the Carrier to validate claims to the hereditary positions of rank that made coast-interior exchange possible. The existence of coast-interior exchange prior to the fur trade means that the mechanism for the development of rank in the interior was in place prior to the development of the Euroamerican fur trade (Bishop 1987).

Bishop’s analysis seems particularly relevant when looking at the Ahtna (and Tutchone) who, like the Carrier, were interior Athapaskans trading with coastal groups. The Ahtna and Tutchone are both known for their emphasis on rank and their participation in the practice of slavery and, for both groups, the control of copper has been associated with this dual emphasis (de Laguna 1964; Grinev 1993; Legros 1985; McClellan 1975, 1981; Townsend 1980). The exchange of copper from the interior to the coast predates the contact period fur trade as witnessed by the archaeological and oral history evidence from Yakutat (de Laguna 1964). Though the fur trade may have accelerated the development of ranking among the Ahtna (and Tutchone), the mechanism for it—coast-interior trade, was already well established.

The Importance of Place

Ives’ (1990) discussion of Athapaskan social organization sheds light on not only the development of ranking among interior Athapaskans but also on the existence of rank among coastal groups such as the Tsimshian and Tlingit. Whether the society in question is thought of as ranked or stratified, discussions of social complexity, including that found on the Northwest Coast, point to one or several of the following causal factors: sedentism (or increasing sedentism), population growth (sometimes associated with circumscription), warfare, and the availability of marine/riverine resources (richness, regularity/availability, storability). Ives places focus on the importance of place in the development of ranking and points out the presence of aspects of sedentism combined with resource regularity and richness in the form of salmon fishing. The places that became important were those areas where many salmon could be caught with relatively ease and that became “susceptible to political control” (Ives 1990:334). Though this is an oversimplification of Ives’ ideas on the development of ranking, his emphasis on “place” lends support to Bishop’s (1987) discussion wherein rank is tied to restricting access to productive land.

A discussion of “place” has important implications for the potential role of copper in the development of rank. Native place names incorporating terminology for copper are abundant in southeastern interior Alaska (Coulls 1980; Kari et al. 1990; Kari [ed.] 1983, 1990) and provide evidence of the importance of native copper, not only to the Ahtna, but also to the Tanana and Southern Tutchone. Tsedi means literally “that which is hammered” and was the term used for copper in the Central, Lower, and Western Ahtna dialect. The words “Chitina” [tsedi na] and “Chitiu” [tsedi tu’] are both derived from this root and mean “copper river” and “copper water,” respectively. Nine other place names that make use of the tsedi root have been recorded in Ahtna territory (Kari et al. 1990; Kari [ed.] 1983.). Among the Mentasta Ahtna and other northern Athapaskans the term “tsetsaani’” was used and means, literally, “rock excrement” (Kari 1990). The name “Chisana” is derived from tsetsaan’ (Kari 1990) as is the name “Klet-san Creek,” formerly Klet-san-dek, on the Alaska-Yukon border (Coulls 1980). Naming places could be interpreted as acknowledging the presence of
copper as well as making claims to that copper, since both Ahtna chiefs, and one lineage in particular, were known for their control over copper resources (McClellan 1971; Shinkwin 1979). Like salmon, another localized resource credited with the appearance and/or intensification of ranking, copper may have been highly susceptible to political control. The Lower Ahtna, whose territory provides the densest concentration of copper place names, not only occupied a copper-rich region, but would have been in a geographical position to prevent more inland groups (but not the Southern Tutchone) from trading copper to the coast.

Archaeological Interpretations of Metallurgy

The discussion of copper and ranking and, more generally, metallurgy and social complexity, now turns to archaeology and the way in which archaeologists have interpreted metal from archaeological contexts. Childe (1942:338) drew attention to the fact that metals allowed for “accumulation and convertibility.” The ability of metals to be melted or otherwise manipulated to create large objects from small, allowed for the expression of different values in an accumulative manner, thus metal was easily converted into other things of value and forms of payment. As later summed up by Sherratt (1994), individuals who could control metallurgy would have power over its convertibility, so that the control of access to both metal ores and the knowledge of metallurgy could help to maintain socioeconomic inequality and political power.

Binford’s (1962) seminal article “Archaeology as Anthropology” focused on the changing utilization of copper among prehistoric societies of eastern North America to demonstrate how material culture can be used to address the existence and communication of status. Based on the distribution and context of artifact types found in the Great Lakes region, Binford argued that copper was initially a sociotechnic item, referring to “material elements having their primary functional context in the social subsystems of the total cultural system” (1962:24), and was used to signify achieved status in an egalitarian society. Such an interpretation is open to criticism today due largely to the fact that much more has been learned about the use of copper in the Great Lakes Region in the last 40 years. For instance, Leader (1988) finds no evidence in the core area of copper sources around the upper Great Lakes for copper being used substantially differently than any other desirable lithic material. Not surprisingly, it does seem to take on special significance as the distance increases from the source areas. Despite the appropriateness of Binford’s initial working assumptions about the use of copper, his early Processual argument highlighted copper as a multifaceted material having functional, social, and symbolic utility.

Renfrew (1972) postulated a relationship between the exchange of metals and the appearance of high status elites in Bronze Age Europe. Whether metallurgy is viewed strictly within technological terms or as the means to acquire and display wealth, the desire to control material sources and production was considered sufficient to explain the emergence of elites. Nakou (1995) however, emphasizes that the importance of metal to an emerging elite came about because of its ability to carry social information. Beginning in the Early Bronze Age, “the appropriation of production and symbolic use of metal represents its active use as an element of formalized display, identifying emergent social groups of exclusive membership” (Nakou 1995:23).

According to Nakou (1995), the control of metal production fostered differential power relationships between the makers and users of metal objects. Early Bronze Age metalworking activities in the Aegean, while arranged to some degree near ore sources, were often located so as to monopolize the technical knowledge of metallurgy. This physical separation of metalworking activities from communities served to maintain the importance of metal goods as something mysterious while simultaneously strengthening power relationships. Metals were valued not only because of the scarcity of raw materials, but also because of the scarcity of knowledge concerning production. This intellectual monopoly would have allowed for the creation of differential power between groups in a lineage-based society (Nakou 1995).

Budd and Taylor (1995) suggest that metallurgy was a function of Bronze Age chiefs, arguing for a close association between it and political power. According to Budd and Taylor (1995:139), “complex procedures are necessarily ritualized” amongst non-literate peoples. This process of ritualization could lead to the combination of early metal production and working with religious and political power.

Far Northwestern North America

There is no evidence that Native people in northwestern North America (or anywhere north of Mexico) melted native copper or smelted copper metal from ores in prehistoric times. Nevertheless, the manufacture of objects from native copper is, by definition, metallurgy. Athapaskan native copper metallurgy was characterized by the hammering of nuggets into thin sheets and, when desired, building up bulk by folding these sheets. An important technique used during this process was annealing (Franklin et al. 1981a, 1981b; Work-
When native copper is cold-worked the crystal structure becomes distorted making it harder (a phenomenon called work-hardening) and more resistant to further working, so that eventually it starts to develop cracks. The way to avoid this is to anneal the copper periodically during working (by heating to a temperature above about 300 degrees Celsius for a few minutes); this procedure causes the individual copper grains to recrystallize, softening the work-hardened copper and restoring its malleability (Wayman 1989).

The review of ideas in the preceding section emphasizes the control not only of raw material, but also of technical expertise and the role of these factors in creating differential status among members of a society. Ethnohistoric information on metalworking in northwestern North America supports this idea. Among the Chilkat Tlingit copper-working knowledge was kept secret (McClellan 1975). A Chilkat woman was credited with the invention of forging and according to Holmberg (1985:16), commenting on the situation in the late nineteenth century, “even now many conserve this art as a secret and it is passed on in certain families as an inheritance.” Forging can refer to either the hot or cold-working of metal and Holmberg does not specify whether the Chilkat were annealing metal but, given the context, his statement on forging does seem to refer to the working of native copper (as opposed to iron or trade copper).

According to de Laguna and McClellan (1981:645) copper “demanded religious precautions to secure the nuggets and specialized knowledge to shape.” The term “c’etseden,” meaning literally “one who hammers” was used by the Ahtna to refer to someone who worked copper (Kari 1990). This suggestion that copper-working was accomplished by specialized craftsmen is further noted among the Dena’ina Athapaskans, neighbors of the Ahtna, who occupied upper Cook Inlet. Though there are reportedly sources of copper within Dena’ina territory (Kari et al. 2003), they did receive copper from the Ahtna. The Dena’ina recognized some individuals as being especially adept at working copper. Such an individual was referred to as nuk’qetset, “they pound it” and was considered “very valuable.” A skilled copper worker reportedly stayed in the woods, presumably at a distance from a settlement, in order to avoid being killed if there was an attack (Kari et al. 2003:111).

Franklin et al. (1981b) noted that unlike the technology associated with other materials used by indigenous people, such as stone, bone, and wood, the use of native copper is not a reductive technology. Native copper was shaped by plastic deformation rather than removing pieces of the original raw material. In fact, considering that at least some native copper objects were made by building up objects through the consolidation of multiple sheets, it could be considered an additive technology. Despite this difference, the technology used to work native copper is essentially lithic, including the use of heat to improve the workability of raw material. Though many individuals in Athapaskan society would have been familiar with the basic skills required to work native copper, as acknowledged by Native people themselves, some probably excelled at it. Such individuals could potentially increase their own prestige by keeping some of the details of their skilled knowledge secret, such as when to anneal and for how long. Thus, as postulated by archaeologists dealing with Bronze Age societies in the Old World (e.g., Budd and Taylor 1995; Nakou 1995; Renfrew 1972), the secreting away of metallurgical knowledge among Native groups in northwestern North America could have contributed to a monopolization of technology that, given time, might have translated into a chiefly prerogative.

The rest of this section focuses on the larger collections of native copper recovered from archaeological sites in south-central Alaska and southwestern Yukon Territory. At GUL-077, also known as the Ringling or Gulkan site (Fig. 1), 170 copper artifacts have been recovered, making it the largest collection of archaeological native copper in the region (Hanson 1999; Holmes and McMahan 1986; Workman 1976). Sixty-six pieces are considered to be debris related to manufacturing. Only three would fall into a “non-utilitarian” category, a ring, a spiral, and a small perforated disk. However, 14 cones were recovered and there have been several suggestions concerning their possible use, including: as toggling points for spearing fish (Hanson 1999:73), as a stage in the manufacture of projectile points (Workman 1976:58), or as beads or tinklers to be attached to clothes (de Laguna and McClellan 1981:658; Shinkwin 1979:26; Workman 1976:64). The site sits above the confluence of the Gakona and Copper Rivers and though there is evidence of historic activity within the site, the majority of occupation and activity spans the period from A.D. 935 to 1485 based on radiocarbon dating (Hanson 1999; Workman 1976, 1977).

Another Ahtna site, Dakah De’nim’s Village (VAL-065) (Fig. 1), at the confluence of the Chitina and Copper Rivers, has produced the second largest number of native copper artifacts in the region, 138. Shinkwin (1979) excavated two houses and trenches through a portion of a third at this site. Based on dendrochronology, the two excavated houses were dated to A.D. 1836–1838 (House 9) and A.D. 1816–1822 (House 2), though the use period of the houses most likely would have overlapped. Unlike the house numbers 2 and 9, house number 1 contained no non-native materials and may represent an earlier occupation during the
late prehistoric. Of the native copper artifacts, 114 were recovered from House 2 and 24 from House 1. Two trade metal artifacts, a copper alloy bell and an iron spike, were recovered from House 9, but no native copper. House 2 also had iron (10 specimens) and glass trade beads were recovered from both House 2 and House 9. Though the distribution of copper at this site shows a pattern not seen at GUL-077, there is a similarity in the small number of decorative items. Only two such items were recovered, both beads, and both from House 2 (Shinkwin 1979).

At the Dikhada site (TNX-004) (Fig. 1), in traditional Tanana territory, copper was found in a Late Prehistoric to Historic context (C14 dates of A.D. 1560 ± 50 and A.D. 1180 ± 40 were obtained from the base of a midden containing native copper, iron, and glass trade beads) (Shinkwin 1979). Of the 44 copper artifacts from this site, 15 are considered debris while four (a bead, nose-ring, and two coiled objects—one of which looks like a pin) are thought to be decorative (Shinkwin 1979; Rainey 1939). At the Rat Indian Creek Site (MjVg-1) in the northern Yukon Territory 14 copper artifacts were recovered (Le Blanc 1984). Twelve of these were from a level dated to between 340±90 (NYRP 77–3) and 1180±80 B.P. (NYRP 78–1), one from a level dated to 1510±80 (NYRP 78–7) to 2010±70 B.P. (NYRP 78–3), and the other from the cobble beach in front of the site. Of these 14 artifacts, none have an obviously decorative or non-utilitarian form. Workman (1978) recovered 21 copper artifacts (15 of which were from the Chimi Site) from three sites in the southwestern Yukon Territory (JIVVs-1, JIVVF-4, JIVVi-7), only two of which, both rolled beads, are likely to be decorative.

Moving to a site on the coast, de Laguna (1964) recovered 48 copper artifacts from Late Prehistoric and Protohistoric levels at the site of Old Town (YAK-007) (Fig. 1) in Yakutat Bay. Included in the inventory of copper artifacts were four rings, six bracelets, three rolled sheet beads (or danglers), two coiled copper wire beads, and a bone bodkin with a piece of copper wire coiled around one end. This amounts to 16 objects of a decorative nature from the site. Compared to GUL-077, this represents a greater number of items of obvious personal adornment. A major difference between the copper artifact assemblages of GUL-077 and YAK-007 lies in the fact that copper was undoubtedly being worked at the former whereas, the material from YAK-007 points to consumption, with little evidence of manufacture. Beyond the producer/consumer dichotomy represented by the two sites, the YAK-007 assemblage indicates that copper was being used differently, that is, for the display of personal prestige or rank. De Laguna’s informants in Yakutat Bay told her that the people there (descended from Ahtna, Eyak, and Tlingit groups) had formerly obtained copper in trade from the Ahtna and that it was only worn by the wealthy people of high status.

Though VAL-065 has few objects of personal adornment, similar to GUL-077, the pattern of distribution of copper artifacts at the two sites is quite different. At GUL-077 copper artifacts are widely scattered throughout the extensive site and often associated with hearth features, which could have been the loci of copper working, but without evidence of caching or hoarding. At VAL-065 copper artifacts are concentrated in and associated with the interior space of rectangular semi-subterranean house pits. The large difference in the amount of copper between the two houses excavated at the site, 114 versus 24, was considered by Shinkwin (1979) to be related to differential access to copper, and therefore power. The difference between these two Ahtna sites, separated in time by at least 300 and as much as 900 years, suggests that copper became more highly controlled, and by extension, more highly valued over time. At present, the distribution of copper at GUL-077 does not provide unambiguous support for or against the notion of individual specialists or individual ownership.

Similar to the general pattern of distribution of copper artifact types in the Great Lakes region as discussed by Leader (1988), sites in northwestern North America nearer copper sources are less likely to have decorative, non-utilitarian artifacts. There are few obvious examples of copper being used for items of personal adornment from Athapaskan sites in Alaska (TNX-004, GUL-077, and VAL-065) and the Yukon Territory (JIVVs-1, JIVVs-2, JIVVs-3, and MjVg1) as compared to the site of YAK-007 on the coast. This difference is not strictly a function of distance as the site of YAK-007 is no further from copper sources than MjVg1.

The use of copper by Athapaskan groups seems to be in large part an extension of pre-existing lithic technologies for utilitarian objects. Even though native copper was associated with high status among Native groups in northwestern North America, for those living near sources it was also a ubiquitous material for making tools.

Copper and Ranking

Among the Ahtna

Though archaeological evidence may be ambiguous regarding the association of copper with individual status among the Ahtna, historic and ethnographic information contributes to our understanding of this issue. Property-based social
status was well developed among the Ahtna, and as with stratified coastal groups, chiefs possessed slaves (Townsend 1980). Among the Ahtna copper was an important source of wealth and it has been suggested that the emphasis on ranking was a result of the control of copper sources by individual headmen (Grinev 1993; Kari 1985; Pratt 1998). Though Pratt acknowledges, “the role of copper in the development of the highly non-egalitarian structure of Lower Ahtna society deserves consideration,” he accurately points out that the state of our understanding regarding both the value of copper and the appearance of ranking falls short of what is necessary to confidently make this connection (1998:94).

It was Wrangell, the Russian American Company manager in 1839, who first suggested a link between the Ahtna’s copper monopoly and their emphasis on rank. He noted that, “differentiation of the Ahtna by wealth and class was no doubt favored by the copper trade which they carried on with other tribes. The Ahtna not only sold raw native copper but knew how to work it, in contrast to other Athapaskans” (Grinev 1993:56). Ahtna chiefs may have claimed ownership of specific locations for collecting copper and it has been suggested that copper became a more restricted commodity from prehistoric to historic times due to the intensification of exchange associated with the Euroamerican fur trade (Shinkwin 1979). However, the process by which this hypothesized change occurred has not been adequately explained. Perhaps the introduction of Euroamerican trade metal into northwestern North America resulted in the intensified use of a pre-existing source of wealth, i.e., native copper, in order to compete with the newly introduced wealth, as suggested by Hickey (1984) for the Copper Inuit. Alternatively, even if demand for native copper on the coast decreased as the maritime fur trade progressed, it may have continued to be traded inland in exchange for furs that were eventually destined for the coast.

An Ahtna man told Shinkwin that all men had collected copper “but it all belonged to the chief” (Shinkwin 1979:27). Though individual chiefs were well known for their association with and control over copper, it also provided group prestige. The Nizina area was claimed by the Wudjicyu sib, which may have resulted in the Lower Ahtna specifically having a monopoly on the copper trade with the coast (McClellan 1971). Kari (1985) suggested that the system of inherited chiefly names attached to major villages found among the Ahtna, but especially the Lower Ahtna, may have been related in part to the location of copper sources and manufacturing sites. Kari (2005) later noted that the villages associated with chiefly names were concentrated in areas of productive salmon fisheries and were also found at strategic points along trail systems utilized to access hunting territories and for trade. Nevertheless, the evidence for the control of copper sources by Ahtna leaders at the time of contact supports a relationship between ranking and copper.

**Discussion**

This paper does not claim that copper created ranking among the Ahtna or any other indigenous group. Doing so would require one to ignore other factors such as increasing population, increasing sedentism, and the development of storable food surplus, all of which have been hypothesized as prerequisites for the development of rank on the Northwest Coast. Indeed, searching for a single material cause or mechanism that explains why an egalitarian society becomes ranked is problematic. As Coupland, Martindale, and Marsden (2001:243) concluded in their investigation of resource abundance and rank among the Tsimshian, “human agency, specifically, the strategic use of social mechanisms...” not resource abundance, was the “primary factor determining Tsimshian local group rank.” Humans are capable of responding to new circumstances (e.g., resource abundance) in a variety of ways that may not require the introduction of new cultural mechanisms such as the development of hereditary rank, which has at times been presented as a natural, evolutionary response to specific, though variable, circumstances (Chapman 2003). Evidence for the control of copper sources obtained by looking at material from archaeological contexts, when combined with ethnohistoric information, provides fertile ground for discussing the relationship between copper and individual prestige, and, by extension, the development of hereditary ranking within Ahtna society.

Native copper is a raw material used in functional, social, economic, and symbolic contexts. The status of copper as a prestige good among the rank-conscious indigenous groups of northwestern North America makes it an ideal aspect of material culture for not only investigating trade, but also value and ranking. Though some specific collecting localities used by indigenous groups are well known, there are still unresolved issues regarding the indigenous use of native copper in northwestern North America including: the time and place of its initial use, the relationship between native copper working found on southern and northern Northwest Coast, the degree to which the value of copper changed over time, and the extent to which the control of sources led to, or helped facilitate, the development of ranking. The ability to determine which native copper sources were exploited by indigenous groups would allow for a more detailed discussion of the native copper trade and this work is ongoing (Cooper and Duke 2005). Finally, the ability to carry on such theoretical dis-
course today is only possible because of the efforts of many anthropologists in attempting to understand and describe the lives of the Native inhabitants of northwestern North America, both past and present. Frederica de Laguna, whose archaeological, ethnographic, and ethnographic work in Alaska spans seven decades, represents the apex of achievement in this endeavor.

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