Bioarchaeological Evidence for Social Maturation in the Mortuary Ritual of Ipiutak and Tigara Hunter-Gatherers: Lifespan Perspectives on the Emergence of Personhood at Point Hope, Alaska

Lauryn C. Justice and Daniel H. Temple

Identity is a concept that shifts over the lifespan in association with relational interactions. This study documents and interprets the cultural systems influencing shifts in identity during maturation in hunter-gatherers from Point Hope, Alaska through archaeological mortuary practices. Grave goods, body position, body orientation, and burial depth (underground versus surface) were recorded for Ipiutak (1500–1100 BP) and Tigara (800–400 BP) cultures. Age was estimated using tooth formation. No age differences in burial depth were found, likely reflecting environmental constraints. Changes in body orientation, body position, and grave-good allocation were found between three and four years with another increase in grave-good allocation after age six. A larger age range of individuals without grave goods was found at Tigara. Changes in bodily orientation and position likely reflect beliefs surrounding the soul. The initial presence of animal implements may represent gifting of amulets, while increases in these items at later ages indicate continued maturation. Differences in the age ranges of individuals without animal implements between the two sites may reflect stronger delineations of social prestige at Ipiutak. These findings hint at the complex relational pathways associated with the formation of identity in prehistoric hunter-gatherer communities.

Keywords: ontology, mortuary practices, Iñupiat, bioarchaeology, Point Hope, life course

El objetivo de este estudio es documentar e interpretar los sistemas culturales que influyeron en las prácticas mortuorias durante el desarrollo en Point Hope, Alaska. Se registraron ofrendas funerarias, orientación de los cuerpos y profundidad de los entierros de las culturas Ipiutak (1500-1100 aP) y Tigara (800-400 aP). La orientación del cuerpo se definió con base en la dirección de la cabeza en la tumba. Las ofrendas funerarias incluyen implementos animales (i.e., restos de animales y materiales elaborados para parecerse a animales). Las designaciones de arriba (menor de 50 cm) e abajo (mayor de 50 cm) indican la profundidad del enterramiento. Las edades se estimaron analizando la formación de los dientes. No se encontraron diferencias de edad en los entierros con base en la profundidad, lo que posiblemente refleja limitaciones medioambientales. Se observaron cambios específicos relacionados con la edad en la posición y orientación del cuerpo y la presencia de implementos animales. Los cambios son discernibles entre los 3 y 4 años de edad, con otro aumento en la presencia de implementos animales entre los 6 y 7 años. Los cambios en la orientación del cuerpo probablemente reflejan creencias relacionadas con la vulnerabilidad y la reencarnación. La presencia inicial de implementos animales puede representar el obsequio de amuletos ligados con el surgimiento de la personalidad, mientras que el aumento en estos artículos en edades posteriores puede reflejar maduración creciente. Las prácticas mortuorias cambiantes en relación con el desarrollo son consistentes con los aspectos filosófico-religiosos y ontológicos de la identidad reflejados en el ritual de la muerte.

Palabras clave: ontología, prácticas mortuorias, Iñupiat, bioarqueología, Point Hope, trayectoria vital

Archaeological mortuary practices reflect social complexity, symbols, agency, and cosmologies of past populations (Binford 1971; Brown 1995; Cannon 2002; Carr 1995; Rakita and Buikstra 2008; Shanks and Tilley 1982). In an often-cited contribution, Binford (1971) argued that the number of dimensions observed in treatment of the dead are associated with social complexity. Here, settled agriculturalists were differentiated from incipient

Lauryn C. Justice ■ Department of Sociology and Anthropology, George Mason University, Robinson B Hall Room 305, 444 University Blvd, Fairfax, VA 22030-4444 USA
Daniel H. Temple ■ Department of Sociology and Anthropology, George Mason University, Robinson B Hall Room 305, 444 University Blvd, Fairfax, VA 22030-4444 USA (dtemple3@gmu.edu, corresponding author)

American Antiquity 84(2), 2019, pp. 234–251

doi:10.1017/aaq.2018.91

agriculturalists, pastoralists, and hunter-gatherers by a significantly larger number of dimensions reflecting the social persona (sensu Goodenough 1965) in death. The work acted as a model for later archaeological research to identify social complexity and even categorize population structure (e.g., chiefdoms) according to the visible dimensions of mortuary ritual (Brown 1981; Peebles and Kus 1977; Rothschild 1979; Tainter 1978). Predictably, these models were critiqued for an overreliance on assumptions that mortuary treatment did not reflect symbolic, philosophical, religious, or sociostrategic alignments of the living (Carr 1995; Hodder 1982; Parker-Pearson 1982; Shanks and Tilley 1982). These critiques were warranted because the work (i.e., Binford 1971) repeatedly discounted the symbolic elements of death and burial despite repeated references to the symbolism encapsulated in Frazer's *Golden Bough* (1890). The seemingly contradictory nature of these references is discussed by Carr (1995): on one hand, Binford (1971) appears to argue that mortuary practices are guided by ideology and symbolism, but on the other, the work cautions against the incorporation of these interpretations in archaeological research. This caution may have been due to an overreliance on work by Kroeber (1927) that found little symbolic behavior in mortuary practices among California American Indians.

However, the interpretation of mortuary practices as symbolic and strategic behavior does have a persistent history in anthropological research. For example, Bendann (1930) presented ethnographic evidence for associations between the philosophical-religious beliefs of a population and its mortuary practices, categorizing these observations as part of a "psychological" approach. Archaeological and ethnoarchaeological research has also provided evidence that mortuary practices are territorial behaviors that draw on memory and perception (Renfrew 1976; Saxe 1970). Even early adherents to the Saxe-Binford program now acknowledge the ceremonial and symbolic components of mortuary practices (Brown 1995; Chapman 2005).

Surveys of human relations area files document relationships between mortuary practices and religious-philosophical beliefs regarding the nature of the soul, social strategies on the part of the living, and social complexity (Carr 1995). Importantly, Cannon (2002, 2011) argues that the tension between the two paradigms is resolvable by evaluating populations in terms of cosmologies, belief structures, and social memory using the material remains of these communities. In this sense, archaeological studies of mortuary practices may piece together the remains of communal interactions in ways that transform how the past is perceived in contemporary scholarship.

The relationship between age and mortuary ritual has long acted as a dimension to reconstruct social organization (Binford 1971; Brown 1981; Peebles and Kus 1977; Rothschild 1979; Saxe 1970). Recent researchers advocate for a deeper interrogation of social age, which is defined as a culturally constructed understanding of age-appropriate attitudes and behaviors (Gowland 2006; Halcrow and Tayles 2008, 2011; Perry 2006; Sofaer 2011). In failing to understand age as a social event, studies of previous lifeways often dilute age to a simple passing of time. With this in mind, social age illustrates a conscious move away from biological or cultural determinism and aims to bridge cultural and biological aspects of the body (Gowland 2006; Halcrow and Tayles 2008, 2011; Perry 2006; Sofaer 2006, 2011; Yamada 1997). Bioarchaeological evidence for social maturation is documented by a variety of studies (Gowland 2006; Halcrow and Tayles 2008, 2011; Perry 2006; Sofaer 2006, 2011; Sofaer-Derevenski 2000; Yamada 1997), and while biology remains integral, maturation must be considered in a broader context of human development, including social relations, culturally specific life experiences, and local attitudes on age and aging (e.g., Schillaci et al. 2011).

In this study, burial treatment of preadults is used to contextualize the process of social maturity in two samples of hunter-gatherers from Point Hope, Alaska. The goal of this work is to evaluate the ways in which mortuary practices may reflect deeply held beliefs regarding the nature of the soul in hunter-gatherers from this region while exploring the ontology of identities surrounding these belief systems. This study relies on the use of preadult burial practices to understand 1) how preadult treatment in death is

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

associated with social maturation and 2) how social maturation reflects deeper communal ideologies.

Point Hope: Archaeological Setting

Point Hope, Alaska, is situated on a narrow strip of land that juts westward into the Chukchi Sea (Figure 1). Locals refer to this landscape as *Tikiġaq* or *Tiagara*, which translates to "finger" in the native Iñupiaq language. Located nearly 150 miles south of the Arctic Circle, Point Hope marks the westernmost point north of the Bering Strait. Point Hope was excavated by Helge Larsen and Froelich Rainey from 1939 to 1941 and yielded nearly 10,000 artifacts, 500 individual skeletons, and remnants of 575 houses (Larsen and Rainey 1948; Rainey 1941a, 1941b). Based on differences observed between artifacts found in houses and burials, Rainey (1941a, 1941b) and Larsen and Rainey (1948) believed two cultural occupations were represented at Point Hope. The first occupation was named Ipiutak, after the native term for a narrow sand bar that separates two lagoons (Larsen and Rainey 1948:14–15). The second site and cultural occupation, Tigara, is named for the adjacent village (Larsen and Rainey 1948:5)

Ipiutak Culture

It is likely that Ipiutak culture developed in situ at Point Hope from nearby Norton cultural occupations at Kotzebue and Norton Sound, as both cultures produced similar artifacts such as blade insets, discoidal scrapers, and bifacial knives (Larsen and Rainey 1948; Jensen 2014; Mason 2014). The lack of pottery, rubbed slate, oil lamps, and whale-hunting accoutrements and a preponderance of projectile points distinguish Ipiutak culture from other North Alaskan cultural traditions (Rainey 1941a, 1941b). Radiocarbon dates place Ipiutak cultural occupations at Point Hope between 1,400 and 1,100 BP (Gerlach and Mason 1992; Giddings 1964).

Ipiutak and earlier Norton communities primarily hunted caribou, seal, and walrus but did not hunt whale (Dumond 2014; Gerlach and Mason 1992; Larsen and Rainey 1948; Mason 1998). At Point Hope, seal, walrus, and caribou constitute approximately 98% of the faunal bones recovered from each household while birds, freshwater fish, bear, whale, and wolf round out the additional species (Larsen and Rainey 1948:68). Other contemporaneous sites have since been discovered along the Kotzebue Sound, such as at Deering (Bowers 2009) and Cape Krusenstern (Giddings and Anderson 1986). These settlements also lacked pottery, whale-hunting equipment, rubbed slate, and oil lamps (Bowers 2009; Giddings and Anderson 1986). Excavation of an Ipiutak house at the Deering site revealed marine and terrestrial mammals such as ringed seal, bearded seal, arctic fox, caribou, brown bear, geese, and murre (Saleeby et al. 2009). Whale bones were also identified (NISP = 4) at Deering, though it is unknown whether these remains were directly associated with the Ipiutak occupation of the site. Similar results are reported from Cape Krusenstern, where seal and caribou constituted the majority of faunal specimens (Giddings and Anderson 1986). At present, Ipiutak burials date between 1,600 and 1,100 BP in this region of Northwest Alaska (Gerlach and Mason 1992). Increasing storminess between 1,200 and 600 BP may have depleted natural resources through coastal erosion and caused the Ipiutak population of Point Hope to migrate inland in search of land mammals (D'Arrigo et al. 2005; Mason 1998, 2014; Mason and Barber 2003; Mason and Gerlach 1995; Mason and Jordan 1993).

Tigara Culture

Larsen and Rainey (1948) also recognized the presence of a whale-hunting occupation, possibly affiliated with Thule culture, at a second site along Point Hope. Thule culture was first described by Mathiassen (1927) and characterized by whale hunting, permanent settlements, and advanced harpoon technology. Larsen and Rainey (1948:37–39) surmised that the more recent occupation at Point Hope was associated with Thule, owing to the discovery of harpoon heads, whale-hunting equipment, and evidence for similar dwelling structures. In this work, Larsen and Rainey (1948) continually referred to this occupation as the Tigara phase. Birnirk and Thule cultural phases are also identified among the burials at this locale (Larsen and Rainey 1948), but the much larger cultural imprint

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

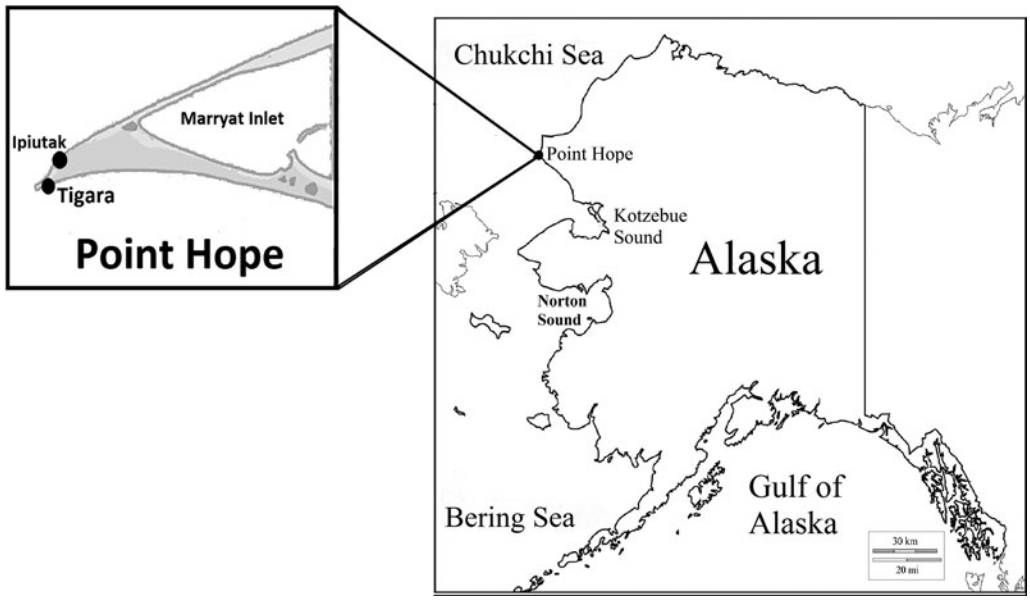

Figure 1. Map depicting the location of the Point Hope site in the Chukchi Sea region of Alaska.

associated with the Tigara occupation dates between 900 and 400 BP (Gerlach and Mason 1992; Hilton et al. 2014; Mason and Gerlach 1995).

Larsen and Rainey (1948) assert that Tigara, along with Thule culture, was subsumed within the Arctic whale-hunting culture, noting tool technology, whale remains found at the site, and permanent occupation of the site (see below). In addition, dental microwear analysis of the Tigara sample is consistent with a population heavily reliant on maritime mammals, specifically whale (El Zaatari 2014; Krueger 2014). This group is now considered under the regionally specific moniker of Late Western Thule (LWT; Jensen 2014, 2016). At present, six geographic points of origin for LWT culture are proposed, ranging from the Aleutian Islands to the Chukchi Sea coast (Mason 2016). Elevated residual phenotypic variance in Tigara samples, when compared to other Thule groups, supports that these populations were structured through long-range gene flow, while biodistance analysis of the Tigara sample suggests close relationships with Point Hope Ipiutak and Point Barrow Birnirk (Maley 2014).

Although it is seven decades old, Larsen and Rainey's monograph remains an invaluable source of information concerning aspects of Ipiutak and Tigara hunter-gatherer lifeways. As permafrost continues to thaw because of human-induced climate change, coastal areas are eroding, placing villages and communities at risk of complete loss (Melvin et al. 2017). Given Point Hope's location on the Alaska coast, the extensive data provided by the initial excavators allows modern-day researchers to investigate the lifeways of peoples from an area that is deteriorating.

Mortuary Ritual at Point Hope

Archaeologists have long been fascinated by the complex mortuary practices at Point Hope, particularly at the Ipiutak site (Larsen and Rainey 1948; Mason 2014; Rainey 1941b). This section outlines mortuary practices observed among adults and highlights some of the more elaborate practices in this region. Approximately 74% of adult Ipiutak burials for which burial positions were reported ($n = 65$) were supine. In terms of directional orientation, 78% of adult Ipiutak burials ($n = 68$) were oriented with heads toward the west (Larsen and Rainey 1948: Appendix 2). Mason (1998, 2006, 2009, 2014) has extensively discussed Ipiutak and Tigara

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

burial practices with a focus on grave goods. These studies highlight Burials 51, 61a, 64, and 77 due to the presence of conical, jet-inlaid ivory eyes and prophylactic facemasks that are often attributed to shamanic practices (Auger 2005; Eliade 2004; Fitzhugh and Kaplan 1982; Hilton et al. 2014; Larsen and Rainey 1948; Morrow and Volkman 1975; Sloan 2014; Sutherland 2001).[1] In addition, this work also highlights the lavish nature of Ipiutak burial on a comparative scale, including contrasts between surface (burial depth < 50 cm) and underground (burial depth > 50 cm) burials, arguing that the more frequent inclusion of ritual items in surface burials suggests differentiation in prestige (Mason 1998).

Arrowheads, arrow points, swivels, openwork carvings, ivory carvings depicting humans and animals, swivel implements, ornamental chain-linked objects, and various loon implements make up the majority of grave goods discovered at Point Hope (Larsen and Rainey 1948). Approximately 64% of all Ipiutak burials ($n = 112$) feature arrowheads, arrow points, or side blades (Larsen and Rainey 1948:63). The prominence of bow-and-arrow-related grave goods is undoubtedly due to Ipiutak hunting strategies that exploit terrestrial mammals, such as caribou. Swivel implements are made from antlers and have shaft-like openings that typically resemble an animal's open mouth and have jet-inlaid ivory eyes; it is unknown how or why swivels were used in Ipiutak culture, though Larsen and Rainey (1948:80, 114–115) surmise that these items served some ceremonial purpose.

Openwork carvings are similar to swivels, but these items lack a shaft-like opening. Made from bone, antler, or ivory, these carvings are intricately designed. Some appear to spirally twist while others are made to resemble humans or birds. The use for openwork carvings is not definitively known, though they may have been used as jewelry or coat adornments (Larsen and Rainey 1948:112). Ivory carvings depicting humans and animals are the quintessential Ipiutak and Tigara artifacts. These carvings depict animals with external skeletons and human faces with tattoos and labrets, and these designs may have roots in shamanic belief systems (Auger 2005; Hill 2011; Hilton et al. 2014). Ornamental chain-linked objects, also abundant in Point Hope burials, are segments of chain links made from ivory. Larsen and Rainey (1948:131–132) theorize that these chains may have been used to suspend swivels or openwork carvings and were worn by shamans.

Ipiutak and Tigara graves also exhibit an affinity for loon-related grave goods. These items include needles made from bird bones and mouth covers that resemble beaks. Additional burial implements include openwork carvings, ivory carvings, harpoon sockets, harpoon heads, and ivory nose plugs, all of which are carved to resemble arctic loons. One burial even includes a loon skull with jet-inlaid ivory eyes (Larsen and Rainey 1948).

A recent study incorporated ontology and perspectivism into evaluations of grave goods associated with Burial 21, focusing on the loon skull mentioned above (Hill 2018). The burial included an adult and a child in an underground interment supported by a roofed log tomb. Additional grave goods included an ivory rod and five large antler tubes. The loon skull was fit with ivory eyeballs and jet inlay, appearing similar to the eyes of sentient beings. Hill (2018) argues that the burial may be associated with a shaman and that the loon skull symbolizes a *tuunġat*, or a helping spirit. The eyes are thought to symbolize the shift in perspective undertaken by a shaman when transforming into an animal spirit.

Less common grave goods featured in Ipiutak and Tigara burials include face masks, ivory eyes, and mouth covers. The masks unearthed at Point Hope are classified as either antler death masks or ivory masks. Antler death masks feature cyclical carvings and are placed over the deceased at the time of interment (Hilton et al. 2014; Larsen and Rainey 1948:123). The ivory masks, however, have received more attention due to associations with preadult and (purportedly) shamanic burials (Auger 2005; Mason 2014). Burial 64 is one of the most often-referenced interments from the Ipiutak cemetery (Fitzhugh 2014; Hilton et al. 2014; Larsen and Rainey 1948; Mason 1998, 2006, 2009, 2014). It is recognized by a large ivory mask that features carvings of multiple animal faces, two botfly larvae carvings, one on each side of the mouth cover, as well as four carved eyelets that included jet inlays at the time of interment. This mask also

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

features a nose cover as well as perforations around the mouth that suggest pendants were attached at some point. It is unknown whether these masks were intended only for funerary rituals or shamanic ceremonies (Larsen and Rainey 1948:123–125). A smaller ivory mask is featured in Burial 77, where it was interred on top of the chest of a preadult aged approximately seven years. This child was buried between the knees of an adult male, and an adult female was interred adjacent to and facing the adult male (Larsen and Rainey 1948:124, 240–241).

More recent studies have evaluated amulet usage in the funerary ceremonies at the Ipiutak component of Point Hope. Hill (2011) demonstrates the wide distribution of amulets in burials across a broader segment of the Ipiutak sample. The importance here is the idea that amulet use provides evidence for the ontology of ritual agency in individuals, where these items represented a constantly unfolding relationship between the Ipiutak inhabitants of Point Hope and the natural environment. Given the ontological nature of relationships between these animal spirits and human owners, it would be interesting to explore how these relationships were expressed over the course of development in the mortuary archaeological record.

Few archaeological references to mortuary practices and social maturation in these or other prehistoric Arctic samples are published. There are, however, a few studies that may help form the basis for expectations in this work. Merbs (1969, 2007) found that among Sadlermiut samples from Southampton Island, preadult burials were oriented to the axial north, possibly to ensure an expeditious reincarnation. In addition, archaeological explorations of miniaturized adult artifacts suggest that children begin practicing for adult routines at an early age with fluid gender boundaries, consistent with the idea that these individuals are reincarnated versions of ancestral community members and that differentiation in identity begins early in the life cycle (Park 1998). As a whole, these findings suggest that the process of maturation in Iñupiaq society has deep-rooted, relational structures and that a detailed exploration of the mortuary archaeological record may inform how these identities were expressed in the past. Furthermore, these studies point toward ritual agency in the daily lives of individuals from these sites, suggesting that preadult burials may elicit evidence for the earliest stages of these interactions.

Materials and Methods

This study uses mortuary practices in relation to age at death as an index of social maturation. Mortuary practices evaluated for this study include grave-good type and occurrence, directional orientation of the head, burial position within the grave, and surface versus underground (see definition below) interment. These data were extrapolated from the Bureau of Land Management Report on Point Hope that is on file with the American Museum of Natural History. In addition, the Larsen and Rainey (1948) monograph includes information for a few of these burials. The data were tabulated in an Excel spreadsheet and are included here as Supplementary Table 1.

The distribution of grave goods across different phases of the lifespan may help reveal changes in identity associated with social maturation (Ekengren 2013; Gowland 2006; Halcrow and Tayles 2008, 2011; Kamp 2001). Grave goods reflect the ways in which past societies symbolically constructed, negotiated, or reinforced social identities. When examined in conjunction with skeletal evidence, these items provide an important way of accessing social identities of past communities. The grave goods surveyed among preadult burials from Point Hope include animal implements. This paper defines animal implements as any grave good that is fashioned to emulate an animal or any residual element from an animal, such as bone, hide, antler, or tusk (sensu Justice 2017). Earlier studies divide these implements into two categories: one category included animal remains, and a second category included objects carved into shapes that resemble animals (Hill 2011). In addition, the ethnographic record points out that toys were frequently included in the grave (Birket-Smith 1929; Boas 1888). It is important to explain how animal implements were differentiated from toys and whether this category of grave good appropriately differentiates classes of amulets. Condensing remains and animistic

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

objects into one category is necessary to maintain sample sizes adequate for study. The sample sizes included here are small (see below), and dividing animal implements into carved objects versus residual elements further reduces the efficacy of analysis. In addition, animal implements closely resemble amulets or charms (see below) that reflect how humans interact with the natural environment (Rainey 1947:273). Animal implements were further differentiated from toys based on size and function (Park 1998, 2005; Park and Mousseau 2003). The items identified as animal implements by this study are not miniaturized material objects and are instead the remains of animals or items crafted to resemble animals that are part of the deeper ethnographically documented spirit-scape (see below).

Body positioning and directional orientation within the grave are of additional interest to this study, as these features reflect factors that include the organizational principles of a population, such as ancestral affiliations, social memories, and deeper cosmologies regarding the nature of the soul (Cannon 2002; Carr 1995; Goldstein 1981). According to the original site report, individuals were buried with heads oriented toward the cardinal directions of east, west, and south. Burial position within the grave was recorded as prone versus supine, and the position of hands in relation to the body was noted.

Burials at Point Hope also vary in terms of depth. Larsen and Rainey (1948:58) describe surface burials resting just beneath or within the sod and immediately above the gravel layer that likely acted as the original surface for the Ipiutak site. Underground burials are found beneath the occupational surface of the site. Surface burials are categorized as those buried between 0 and 50 cm beneath the excavation surface, whereas underground burials are more than 50 cm below this locale (Larsen and Rainey 1948:58). Age at death was estimated using radiographs of the mandibular dentition. Radiographs were produced using a portable digital Nomad Pro hand-held X-ray device (Aribex, Provo, Utah), which transmitted radiographic images directly to a laptop via the Dr. Suni Plus digital light sensor (Suni, San Jose, California). Developmental phases for the deciduous and permanent dentition were recorded according to standard protocols, and age was estimated using reference standards of tooth formation (AlQhatani et al. 2010; Liversidge and Molleson 2004).

Evidence for social maturity in the archaeological mortuary record was evaluated using box plots of estimated age at death and funerary treatment. Differences in mortuary treatment according to age at death were assigned where overlap between interquartile ranges is absent or minimal. "Interquartile range" refers to a measure of statistical dispersion between the seventy-fifth and twenty-fifth percentiles. Since the sample sizes included in this study are relatively small, the comparison of box plots is a useful method that helps identify the emergence of different mortuary treatments over the lifespan without making assumptions about differences in averages or distributions. Tables 1–4 report specific sample sizes, the average age for each type of mortuary treatment, standard errors, and standard deviation for interested parties.

Results

Burial position was compared by age group for the Ipiutak and Tigara samples. Ipiutak and Tigara preadults in the perinatal to 3 years cohort were buried prone, while Ipiutak and Tigara preadults within the 4 to 12 years cohort are interred supine (Figure 2; Table 1). Among Ipiutak preadults, there is a clear delineation among supine interments with the youngest individual interred at 1 year; however, the interquartile range suggests the majority of Ipiutak supine interments span 5 to 10 years. Among Tigara preadults, the majority of supine interments span 7 to 9 years in age, with the youngest individual interred at approximately 4 years and the oldest individual interred around 12 years. Data concerning the orientation of the head within the grave (Figure 3; Table 2) indicate that Ipiutak preadults in the 2- to 3-years cohort and Tigara preadults in the 1- to 2-years cohort are buried with their heads oriented south. Ipiutak preadults aged 5 to 10 years are buried with heads oriented west. Older Tigara preadults mirror this pattern in that there is a clear shift in orientation toward the west from 4 to 12 years.

Clear distinctions between age and animal implements are also observed in the data

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

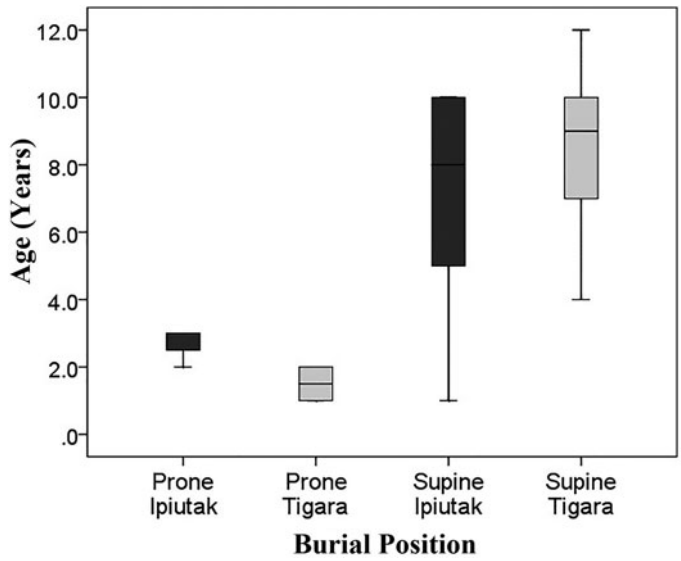

Figure 2. Box plots demonstrating the structure of age and burial position in the Ipiutak and Tigara samples.

Table 1. Summary Statistics for Burial Position.*

Burial Position by Culture	Number of Burials	Mean Age	Standard Deviation	Standard Error
Prone				
Ipiutak	4	2.8	0.5	0.3
Tigara	4	1.5	0.6	0.3
Supine				
Ipiutak	9	7.2	3.1	1.0
Tigara	15	8.5	2.2	0.6
Total	32	6.5	3.4	0.6

*All statistics are listed in years.

presented in Figure 4 and Table 3. Interquartile ranges indicate that Ipiutak preadults who received one animal implement were between the ages of 3 and 6 years. Interquartile ranges suggest that Ipiutak preadults aged 7 to 10 years were interred with two or more animal implements. There is a range of data, however, that suggests some Ipiutak preadults aged 2 to 10 years did not receive any animal implements at the time of burial. Tigara preadults ranging from 6 to 9 years received only one animal implement, whereas the delineation between Tigara individuals who receive two or more animal implements is less defined with the group consisting of Tigara preadults aged 7 to 11 years. There is a clear outline of Tigara preadults who did not receive animal implements, aged 1 to 2 years; however, there is an individual aged 9 years who is an outlier within this group.

The data in Figure 5 and Table 4 indicate that there is no clear differentiation between age and surface or underground burials. Ipiutak preadults that received surface burials range from 1 to 10 years, with the majority ranging from 5 to 10 years. Ipiutak preadults that received underground burials range from 2 to 10 years with the majority of preadults in this particular group spanning 3 to 8 years. Tigara preadults who received surface burials span ages 4 to 12 years. The interquartile range does, however, place the majority of individuals in this group between 6 and 10 years. Tigara preadults that received underground burials represent a wider breadth of ages, from 1 to 12 years.

To summarize, these results indicate Ipiutak and Tigara pre-adults in the perinatal to 3 years cohort were buried prone, with heads spatially oriented south. Between Ipiutak and Tigara preadults, individuals within the 4 to 12 years cohort were interred supine, heads spatially oriented west, with animal implements such as walrus tusks or ivory animal carvings. Among Ipiutak preadults, there is also a clear distinction in grave-good allocation. For example, individuals

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

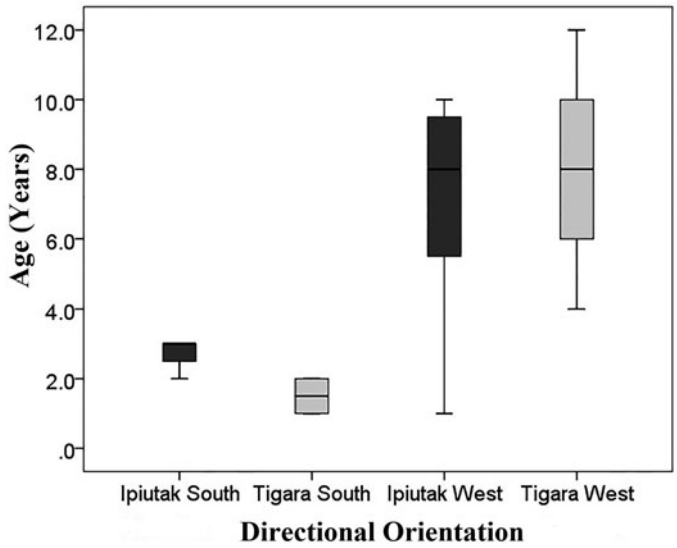

Figure 3. Box plots demonstrating the structure of age and orientation of the head within the grave in the Ipiutak and Tigara samples.

Table 2. Summary Statistics for Directional Orientation of the Head.*

Orientation by Culture	Number of Burials	Mean Age	Standard Deviation	Standard Error
South				
Ipiutak	4	2.8	0.5	0.2
Tigara	4	1.5	0.6	0.3
West				
Ipiutak	11	7.3	2.8	0.9
Tigara	16	8.0	2.5	0.6
Total	35	6.4	3.3	0.6

*All statistics are listed in years.

ranging from 1 to 6 years are interred with only one animal implement, whereas individuals aged 7 to 10 years receive two animal implements. Among Tigara preadults, individuals are not interred with grave goods until 4 years of age. Tigara preadults within the 4 to 12 years cohort may be interred with one or two animal implements.

Discussion

Body Position

Ipiutak and Tigara individuals were buried prone until approximately three years of age, with supine burial beginning between four and five years. Prone burial obscures the eyes, mouth, and nose. Larsen and Rainey (1948:120–121, 149) repeatedly intimate that eye, mouth, and nose coverings found in these samples may be associated with Iñupiat ghost cults. In so doing, these scholars cite the work of Uno Holmberg (1927:20–21) which reports that covering the eyes, mouth, and nose of the deceased is performed in an effort to prevent the dead from doing harm to the living.

Larsen and Rainey (1948:120–121, 149) suggest that this practice may have been rooted in protecting the soul of the deceased from corruption in the afterlife. Infants and young children exist prior to an "age of awareness," when the developing mind is incapable of forming complete memories (Fienup-Riordan 1994:143; Sprott 2002:46). This period is considered one of great vulnerability for the mind and soul. Parents do not yell at infants or children for fear of disturbing the developing mind and spirit that inhabits the body, and corporeal punishment is rare (Burch 2006:59; Murdoch 1892:417; Rainey 1947:243; Rasmussen 1931:191). In addition, the souls of individuals in this age group are vulnerable to contamination (Birket-Smith 1929:288–289). Larsen and Rainey (1948:120–121, 149) repeatedly reference burial customs

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

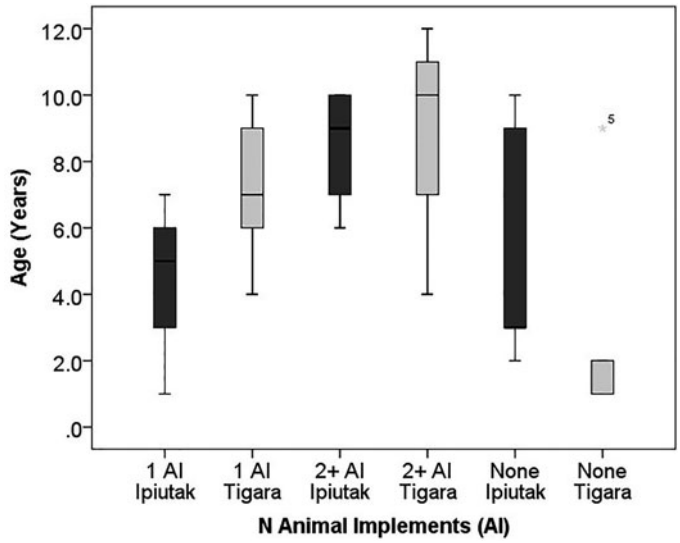

Figure 4. Box plots demonstrating the structure of age and inclusion of animal implements in the grave of Ipiutak and Tigara samples.

Table 3. Summary Statistics for Number of Animal Implements.*

Number of Animal Implements in Graves (by Culture)	Number of Burials	Mean Age	Standard Deviation	Standard Error
1 Ipiutak	6	4.5	2.2	0.9
1 Tigara	9	7.3	1.9	0.6
2+ Ipiutak	4	8.5	1.9	1.0
2+ Tigara	7	8.9	3.0	1.1
0 Ipiutak	5	5.4	3.8	1.7
0 Tigara	5	3.0	3.4	1.5
Total	36	6.4	3.3	0.5

*All statistics are listed in years.

geared toward blocking the eyes, nose, and mouth of individuals and suggest that these locations may be susceptible to spiritual contamination. This has some ethnographic support. For example, Murdoch (1892:425) reports Inuit funerary customs near Greenland that include plugging the noses of funeral attendants with hay. Alternately, Rasmussen (1929:58) documents the *tarniq* as the spiritual essence of an organism that rests in the groin, and this essence may be transformed into an evil soul if harmed. Prone burial may prevent the vulnerable souls of children from contamination by protecting these physical points. These results hint that burial orientation shifts in relation to the unfolding of new identities over the lifespan.

Directional Orientation

Ipiutak and Tigara burials are oriented with heads toward the south and feet toward the north until approximately four years of age (Figure 3). These results are consistent with studies that find the directional orientation of Inuit and Thule burials change over the life course. For example, Inuit mortuary practices on Baffin Island place the feet of preadults toward the southeast in the direction of the rising sun (Boas 1888:613). Preadult burial orientation also differed from male and female adults in samples excavated on Southampton Island (Merbs 1969, 2007). In these samples, the heads of infants were oriented north, a direction with no known afterlife. At Point Hope, there exist scant references to reincarnation associated with orienting the body in a southerly direction. In one instance, it was reported that the southerly wind directs the souls of caribou to the mountains to rejoin the herd during the summer migration (Turner 1994:71). Additional references to the south as a repository for souls are not found. One possibility for this includes the desire

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

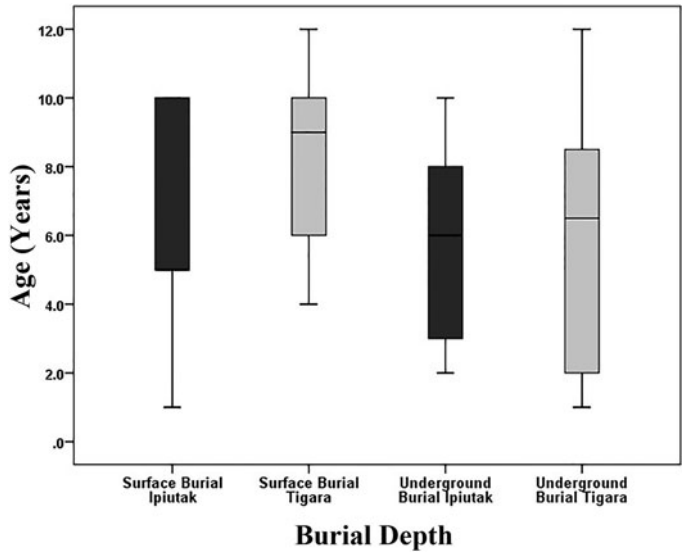

Figure 5. Box plots demonstrating the age structure of burial depth for the Ipiutak and Tigara sample.

Table 4. Summary Statistics for Burial Depth.*

Burial Depth (by Culture)	Number of Burials	Mean Age	Standard Deviation	Standard Error
Surface Burials				
Ipiutak	5	6.2	3.8	1.7
Tigara	9	8.2	2.6	0.8
Underground Burial				
Ipiutak	9	5.7	3.0	1.0
Tigara	12	5.8	3.7	1.1
Total	35	6.4	3.3	0.6

*All statistics are listed in years.

for faster reincarnation in infants and young children (Merbs 1969, 2007). Because no afterlife is found in the southern direction, this orientation may reflect efforts to recapture the soul in a living person as quickly as possible. Inuit, Iñupiat, and Yupiit people name infants after recently deceased community members (Boas 1888:612; Burch 2006:58–59; Fienup-Riordan 1994:243–247; Nelson 1899:289). In the cases of infant and child deaths, great emotional intensity is attached to the event. *Angerlartoqut* is a term used in Kangersuatsiaq communities to reference the soul of a deceased child that is reincarnated in a younger sibling (Nutall 1994:131–132). In these cases, deceased infants are reborn to parents, and the identity of the lost offspring persists in these individuals. Bodily orientation among the infants and young children at Point Hope, may, therefore, act as a strategy aimed to guide the souls of infants away from the afterlife and expedite rebirth.

The directional orientation of older children, adolescents, and adults differs from infants and young children. Older children, adolescents, and adults were buried with heads oriented west and feet oriented east in the Ipiutak and Tigara samples. Indigenous residents of Baffin Island and Point Barrow direct the feet of adults toward the west and heads toward the east, referencing both the setting sun and Chukchi Sea as points of interest (Boas 1888:613; Murdoch 1892:425; Stefánsson 1914:187, 193–195). In the Southampton Island region of Hudson Bay, the heads of male adults were oriented along easterly coordinates, whereas the heads of female adults were oriented along westerly coordinates (Merbs 1969, 2007). These directional coordinates correspond to differing afterlives and are symbolized by the rising and setting sun, respectively. Ethnographic interviews provide some information regarding the directional orientation of adult burials at Point Hope: individuals were oriented with heads west and feet east, which directs the soul to a location beyond the Kuukpak

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

River where there is always good weather (Lowenstein 2008:154). In this sense, directional coordinates in Ipiutak and Tigara older children, adolescents, and adults may be consistent with burial customs around the Point Hope area that reflect perceptions of the soul's journey to the afterlife. Findings from this study emphasize that inclusion in this group corresponds with transformative events in the social lives of the Ipiutak and Tigara people beginning around three to four years of age. This suggests that burial orientation included a philosophical-religious *and* ontological component (sensu Hill 2011).

Animal Implements

The number of animal implements included in graves increases with age in both Ipiutak and Tigara cemeteries (Figure 4). At Ipiutak, animal implements appear in burials at around three years of age, and the presence of two or more animal implements begins around seven years. Among the Tigara sample, individuals without animal implements are differentiated from those with one animal implement around six years of age, while those with two animal implements are differentiated from those with one animal implement around seven years. Ethnohistoric studies of Iñupiat and Yupiit populations document funerary rituals where possessions of the deceased are included in the grave (Fienup-Riordan 1994:213–214; Lantis 1947:9–11; Murdoch 1892:424–425; Nelson 1899:311–313; Rasmussen 1931:264; Stefánsson 1914:315). In this sense, the increasing number of animal implements with age is consistent with an identity that was achieved over the life course (ala Brown 1981; Tainter 1978). A closer look at the nature of these grave goods, however, suggests a greater role for these items as symbols reflecting the ontology of personhood within the boundaries of communal ideologies.

Charms or amulets were personal possessions made from skin, claws, beaks, skulls, teeth, tails, and other residual elements as well as implements fashioned into the shape of an animal (Lantis 1947:96; Murdoch 1892:434–435; Rainey 1947:272; Stefánsson 1914:121). Amulets were devices used to communicate with animal spirits, to achieve similar characteristics as the animals, to forecast future hunting success, to draw on the spirit for help in times of turmoil, or to enact revenge (Burch 2006:368–369; Murdoch 1892:434–440; Rainey 1947:272; Rasmussen 1931). Amulets were also used as grave goods (Lantis 1947:10). Among the Tigara of Point Hope, amulets were fashioned from the remains or residual elements of animals (Rainey 1947:272). Interactions with various animal spirits were initiated through the use of amulets, and these items were gifted during childhood when the "age of discretion" was reached (Rainey 1947:273). Instruction in the use of amulets was provided to each child and obligated the child to observe taboos surrounding interactions with animals, the dead, or bodily residues. Recent studies argue that these amulets demonstrate ritual agency for individuals within the community by permitting direct communication between the owner of the amulet and animal spirit (Hill 2011). Though such practices are philosophical-religious in nature, Hill (2011:420–421) argues that these interactions represent ontological relationships drawing on the perceptions of hunter-gatherers and constantly unfolding relationships between humans and the natural world. Taken together, these studies suggest that the animal implements found in the Ipiutak and Tigara graves likely functioned as amulets and represent the capacity for individuals to interact with the supernatural. Animal implements were included in graves at three years of age among the Ipiutak and six years of age among the Tigara. Such findings seemingly reveal the earliest point in the ontology of personhood when amulets were gifted to children. Thus, the appearance of these symbolic items in burial intimates the initial emergence of a complete person capable of communicating with spirit worlds and other-than-human individuals. Persistence in this behavior between the Ipiutak and Tigara cemeteries suggests that this gifting practice had deep roots in the early occupation of Point Hope and may exemplify resilience in the sociosymbolic realm of these populations (Justice and Temple 2018).

Ethnohistoric accounts of adolescence suggest continued emergence of personhood through participation in the socioecological system during adolescence among boys and girls.[2] For boys, this emergence is reported between 8 and 11 years of age, when instruction in hunting,

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

first hunting kills, and invitation to the *qargi* occur (Fienup-Riordan 1994:145; Honigmann and Honigmann 1953:39–40; Lantis 1947:5–8; Rainey 1947:243–244). For girls, this time is marked by entrance into puberty through menarche, first gathering of food, and closer apprenticeship with adult women when skills are commonly developed in prey and hide preparation (Fienup-Riordan 1994:145, 160–163; Hill 2016; Honigmann and Honigmann 1953:40; Lantis 1947:5–8; Nelson 1899:291).

Animals such as birds (owls, ravens, and water fowl), marine mammals (seals, walruses, and whales), and terrestrial mammals (caribou) were hunted or treated as important spirits by the Ipiutak and Tigara people (Fitzhugh and Kaplan 1982; Larsen and Rainey 1948; Rainey 1947). The spirits of these animals have great connections to the Iñupiat world at Point Hope, including ensuring successful hunts and guarding against illness (Rainey 1947:272–273). When these animals are killed, great care is taken in the postmortem processing of the remains (Burch 2006:134–200; Fienup-Riordan 1994:51; Hill 2016; Laugrand and Oosten 2014). Examples of this care include returning the souls of deceased seals to the bladder so that these animals may be reincarnated (Lantis 1947:59; Nelson 1899:437) or the postmortem return of whale skulls to the ocean so that the soul can be free (Rainey 1947:261). Animal spirits are so pervasive that daily practices and thoughts are modified to appease these entities (Fienup-Riordan 1994:53–62; Laugrand and Oosten 2014:64–68).

Both hunters and those individuals who process the remains of animals abide by rules regarding the appropriate treatment of prey and carry amulets that are specialized to these practices (Fitzhugh and Kaplan 1982; Laugrand and Oosten 2014:59; Rainey 1947:272–273). Thus, animal implements included in this study represent items that had unique ontological properties, and these properties were likely associated with the deeper interactions between living humans and animal spirits. Importantly, individuals gained greater access to these interactions through social maturation. For instance, individuals continually received amulets at later developmental phases (Rainey 1947:274). Results from this study demonstrate that individuals receiving two or more animal implements in burial were at least eight years of age. It is likely that this result tracks increasing social maturity of individuals, often reflected by interactions with particular animals either through hunting or processing the remains. In these cases, it is interesting to consider the possibility that the unique ontological properties of these implements may portend spiritual relationships with deceased adolescents, specifically those who consistently interacted with these animals through daily practice.

The age distribution of Tigara individuals without animal implements ranges from one to three years of age, while the Ipiutak sample ranges between 2 and 12 years. Ethnographic observations of individuals living in the Tigara village (Rainey 1947:273–275) suggest several reasons for this: 1) Many amulets are made from the skin or hide of animals and are susceptible to deterioration over time. It is possible that taphonomic factors contributed to poor preservation in these instances. 2) Amulets in one subclass were kept in special places (e.g., the bow of a boat) and not worn as charms. It is possible that these amulets were not recovered for inclusion in funerary ceremonies. 3) There were many cases when amulets were simply not gifted because some individuals were not associated with identities that called for amulet use. However, it is interesting that the group of individuals without amulets was largest in the Ipiutak sample. Evidence for social differentiation in burial is reported at this site in association with the allocation of grave goods (Fitzhugh 2014; Fitzhugh and Kaplan 1982; Mason 1998, 2014). Therefore, it is possible that amulet gifting was restricted to individuals with greater social prestige, and individuals who lacked amulets had less prestigious social affiliations.

Surface and Underground Burial

There is no distinction concerning preadult age among surface or underground burial methods. This result is somewhat surprising, as all other categories reflect age-based distinctions in mortuary ritual. One possible explanation is that this group represents a segment of society in which mortuary treatment cross-cut age and was associated with ascribed social identity (Brown

https://doi.org/10.1017/aaq.2018.91 Published online by Cambridge University Press

1981, 1995; Peebles and Kus 1977). Mason (1998:275) cites Larsen and Rainey in arguing that surface burials are dominated by ritual goods, whereas underground burials are associated with household or utilitarian items. The lack of age structure found in these burials may reflect identities that were consistently affixed to these individuals rather than one that emerged over the life course. Alternatively, because Point Hope is situated upon thick layers of permafrost, it may be that individuals were afforded burials centered on the season of death. Binford (1971) notes that local environments constrain disposal practices for the dead. Arctic populations frequently built rock cairns along the surface as burial facilities owing to the difficulty in penetrating frozen ground, and those in Tibet leave human bodies to naturally decompose on mountain peaks (Hrdlička 1930; Wylie 1965). The ethnohistoric record documents numerous instances when individuals were placed on the surface after being transported by sled to the location of burial at Point Barrow (Murdoch 1892:424; Stefánsson 1914:193). At Point Hope, winter permafrost layers are thick and difficult to penetrate. Thus, surface burials might indicate a communal solution to adverse weather conditions, further explaining why burial depths are not age structured.

Conclusions

This study finds evidence for shifts in mortuary treatment over the life cycle in the Ipiutak and Tigara samples from Point Hope, Alaska. These changes are associated with increasing social maturity. Such differences may be attributable to philosophical-religious beliefs about the soul and the vulnerable nature of infants and young children. These practices also appear tethered to increasing social awareness, the onset of maturity during late childhood, and further social maturation in adolescence. The overall findings reported here suggest a strong symbolic component to mortuary practices in the Point Hope populations and demonstrate vast relational complexities in hunter-gatherer lifeways. In particular, age-based delineations in mortuary practices suggest an ontological component to the ways in which these populations interacted with and conceived of the natural world, as well as how these interactions and conceptions changed over the life course.

Notes

1. This point must be interpreted carefully, as the ethnographic record reports instances of individuals other than shaman using masks during a wide variety of rituals, including funerals, feasts, festivals, and religious ceremonies (Lantis 1947), while archaeological research finds evidence for individual involvement in spiritual interactions (Hill 2011).

2. These gendered identities are fluid rather than binary. Historic accounts of gender transformation during fetal development, birth, and over the lifespan through social or supernatural experience, naming practices, and personal style are numerous and in accord with the disposition of the individual (Saladin d'Anglure, 1994). Children's play also appears largely gender-neutral, including participation in some hunting games (Park 1998).

Acknowledgements. We thank Giselle Garcia and Paul Beelitz for access to the Point Hope skeletal collection and associated documents at the American Museum of Natural History. This work benefited from comments by Haagen Klaus and Nawa Sugiyama. Christopher Carr, Erica Hill, and Charles Merbs kindly shared manuscripts that proved impossible to find through interlibrary loans. Comments from Lynn Gamble and three anonymous reviewers greatly improved this manuscript. Haagen Klaus provided Spanish translation of the abstract.

Data Availability Statement. The data used in this study were made available by the American Museum of Natural History.

Supplemental Materials. For supplementary material accompanying this paper, visit https://doi.org/10.1017/aaq.2018.91.

Supplementary Table 1. Database of Burials from the Ipiutak and Tigara Components of Point Hope, Alaska.

References Cited

AlQhatani, S. J., M. P. Hector, and H. M. Liversidge
2010 Brief Communication: The London Atlas of Human Tooth Development and Eruption. *American Journal of Physical Anthropology* 142:481–490.

Auger, Emily E.
2005 *The Way of Inupiat Art: Aesthetics and History in and Beyond the Arctic*. McFarland, Jefferson, North Carolina.

Bendann, Effie
1930 *Death Customs: An Analytical Study of Burial Rites*. Keegan, Paul, Trench, Trubner, London.

Binford, Lewis R.
1971 Mortuary Practices: Their Study and Their Potential. *Memoirs of the Society of American Archaeology* 25:6–29.

Birket-Smith, Kaj
1929 *The Caribou Eskimo: Descriptive Part*. Report of the Fifth Thule Expedition 1921–24 5(1). Gyldendalske Boghandel, Nordisk Forlag, Copenhagen.

Boas, Franz
1888 *The Central Eskimo*. 6th Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution. Government Printing Office, Washington, DC.
Bowers, Peter M.
2009 *The Archaeology of Deering, Alaska: Final Report on the Village Safe Water Archaeological Program*. Northern Land Use Research, Fairbanks, Alaska.
Brown, James A.
1981 The Search for Rank in Prehistoric Burials. In *The Archaeology of Death*, edited by Robert Chapman, Ian Kinnes, and Klavs Randsborg, pp. 25–38. Cambridge University Press, Cambridge.
1995 On Mortuary Analysis—With Special Reference to the Saxe-Binford Research Program. In *Regional Approaches to Mortuary Analysis*, edited by Lane Anderson Beck, pp. 3–26. Plenum Press, New York.
Burch Jr., Ernest S.
2006 *Social Life in Northwest Alaska: The Structure of Inupiaq Eskimo Nations*. University of Alaska Press, Fairbanks.
Cannon, Aubrey S.
2002 Spatial Narratives of Death, Memory, and Transcendence. *Archaeological Papers of the American Anthropological Association* 11:191–199.
2011 Introduction. In *Structured Worlds: The Archaeology of Hunter-Gatherer Thought and Action*, edited by Aubrey S. Cannon, pp. 1–10. Routledge, London.
Carr, Christopher
1995 Mortuary Practices: Their Social, Philosophical-Religious, Circumstantial, and Physical Determinants. *Journal of Archaeological Method and Theory* 2:105–200.
Chapman, Robert
2005 Mortuary Practices: A Matter of Time? In *Interacting with the Dead: Perspectives on Mortuary Archaeology for the New Millennium*, edited by Gordon Rakita, Jane E. Buikstra, Lane A. Beck, and Sloan R. Williams, pp. 25–40. University Press of Florida, Gainesville.
D'Arrigo, Roseanne, Erika Mashig, David Frank, Rob John Sinclair Wilson, and Gordon Jacoby
2005 Temperature Variability over the Last Millennium Inferred from Northwestern Alaskan Tree Rings. *Climate Dynamics* 24:227–236
Dumond, Don E.
2014 Point Hope in Certain Contexts: A Comment. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auercbach, and Libby W. Cowgill, pp. 291–307. Cambridge University Press, Cambridge.
Ekengren, Fredrik
2013 Contextualizing Grave Goods: Theoretical Perspectives and Methodological Implications. In *The Oxford Handbook of The Archaeology of Death and Burial*, edited by Sarah Tarlow and Liv Nillson Stutz, pp. 173–194. Oxford University Press, Oxford.
El Zaatari, Sireen
2014 The Diets of the Ipiutak and Tigara (Point Hope, Alaska): Evidence from Occlusal Microwear Texture Analysis. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auercbach, and Libby W. Cowgill, pp. 120–137. Cambridge University Press, Cambridge.
Eliade, Mircea
2004 *Shamanism: Archaic Techniques of Ecstasy*. Princeton University Press, Princeton, New Jersey.
Fienup-Riordan, Ann
1994 *Boundaries and Passages: Rule and Ritual in Yup'ik Eskimo Oral Tradition*. University of Oklahoma Press, Norman.
Fitzhugh, William W.
2014 The Ipiutak Spirit-Scape: An Archaeological Phenomenon. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auercbach, and Libby W. Cowgill, pp. 266–290. Cambridge University Press, Cambridge.
Fitzhugh, William, and Susan Kaplan
1982 *Inua: Spirit World of the Bering Sea Eskimo*. Smithsonian Institution Press, Washington, DC.
Frazer, James G.
1890. *The Golden Bough*. MacMillan, London.
Gerlach, Craig, and Owen K. Mason
1992 Calibrated Radiocarbon Dates and Cultural Interaction in the Western Arctic. *Arctic Anthropology* 29:54–81.
Giddings, J. Louis.
1964 *The Archaeology of Cape Denbigh*. Brown University Press, Providence, Rhode Island.
Giddings, J. Louis, and Douglas D. Anderson
1986 *Beach Ridge Archaeology of Cape Krusenstern: Eskimo and Pre-Eskimo Settlements around Kotzebue Sound*. Publications in Archaeology 20. National Park Service, United States Department of Interior, Washington, DC.
Goldstein, Lynn S.
1981 One-Dimensional Archaeology and Multidimensional People: Spatial Organization and Mortuary Analysis. In *The Archaeology of Death*, edited by Robert Chapman, Ian Kinnes, and Klav Randsborg, pp. 53–69. Cambridge University Press, Cambridge.
Goodenough, Ward H.
1965 Rethinking "Status" and "Role": Toward a General Model of the Cultural Organization of Social Relationships. In *The Relevance of Models for Social Anthropology*, edited by Michael Banton, pp. 1–24. Tavistock Publications, London.
Gowland, Rebecca
2006 Aging the Past: Examining Age Identity from Funerary Evidence. In *Social Archaeology of Funerary Remains*, edited by Rebecca Gowland and Christopher J. Knüsel, pp. 143–155. Oxbow Books, Oxford.
Halcrow, Sian E., and Nancy Tayles
2008 The Bioarchaeological Investigation of Childhood and Social Age: Problems and Prospects. *Journal of Archaeological Method and Theory* 15:190–215.
2011 The Bioarchaeological Investigation of Children and Childhood. In *Social Bioarchaeology*, edited by Sabrina C. Agarwal and Bonnie Glencross, pp. 333–360. Wiley Blackwell, Chichester, United Kingdom.
Hill, Erica
2011 Animals as Agents: Hunting Ritual and Relational Ontologies in Prehistoric Alaska and Chukotka. *Cambridge Archaeological Journal* 21:407–426.
2016 Men, Women, and Shamans: Daily Ritual Practice in the Supernatural North. In *Imagining the Supernatural North*, edited by Eleanor Rosamund Barraclaugh, Danielle Marie Cudmore, and Stefan Donecker, pp. 275–291. University of Alberta Press, Edmonton.

2018 Humans, Birds, and Burial Practices at Ipiutak, Alaska: Perspectivism in the Western Arctic. *Environmental Archaeology*, DOI: 10.1080/14614103.2018.1460031.

Hilton, Charles E., Benjamin M. Auerbach, and Libby W. Cowgill
2014 Introduction: Humans on the Edge of the Alaskan Arctic. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles E. Hilton, Benjamin M. Auerbach, and Libby W. Cowgill, pp. 1–10. Cambridge University Press, Cambridge.

Honigmann, Irma, and John Honigmann
1953 Child Rearing Patterns among the Great Whale River Eskimo. *Anthropological Papers of the University of Alaska* 2:31–50.

Hodder, Ian
1982 The Identification and Interpretation of Ranking in Prehistory: A Contextual Perspective. In *Ranking, Resource, and Exchange*, edited by Colin Renfrew and Stephan Shennan, pp. 150–154. Cambridge University Press, Cambridge.

Holmberg, Uno
1927 *The Mythology of all Races, Volume 4. Finno-Urgic Mythology and Siberian Mythology*. Archaeological Institute of America, Marshall Jones Company, Boston.

Hrdlicĥka, Ales
1930 *Anthropological Survey in Alaska*. 46th Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution. Government Printing Office, Washington, DC.

Jensen, Anne M.
2014 The Archaeology of North Alaska: Point Hope in Context. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auerbach, and Libby W. Cowgill, pp. 11–34. Cambridge University Press, Cambridge.
2016 Archaeology of the Late Western Thule/Iñupiat in North Alaska (A.D. 1300–1750). In *The Oxford Handbook of the Prehistoric Arctic*, edited by T. Max Friesen and Owen K. Mason, pp. 513–536. Oxford University Press, Oxford.

Justice, Lauryn C.
2017 Biological and Cultural Evidence for Social Maturation at Point Hope, Alaska: Integrating Data from Archaeological Mortuary Practices and Human Skeletal Biology. MA thesis, Department of Sociology and Anthropology, George Mason University, Fairfax, Virginia.

Justice, Lauryn C., and Daniel H. Temple
2018 Bioarchaeological Evidence for Cultural Resilience at Point Hope, Alaska: Persistence and Memory in the Ontology of Personhood in Northern Hunter-Gatherers. In *Hunter-Gatherer Resilience and Adaptation: A Bioarchaeological Perspective*, edited by Daniel H. Temple and Christopher M. Stojanowski, pp. 273–293. Cambridge University Press, Cambridge.

Kamp, Kathryn A.
2001 Where Have All the Children Gone? The Archaeology of Childhood. *Journal of Archaeological Method and Theory* 8:1–34.

Kroeber, Alfred L.
1927 Disposal of the Dead. *American Anthropologist* 29:308–315.

Krueger, Kristin L.
2014 Contrasting the Ipiutak and Tigara: Evidence from Incisor Microwear Texture Analysis. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auercbach, and Libby W. Cowgill, pp. 99–119. Cambridge University Press, Cambridge.

Lantis, Margaret
1947 *Alaskan Eskimo Ceremonialism*. JJ Augustin, New York.

Larsen, Helge, and Froelich Rainey
1948 *Ipiutak and the Arctic Whale Hunting Culture*. Anthropological Papers of the American Museum of Natural History, 42. American Museum of Natural History, New York.

Laugrand, Frédérick, and Jarich Oosten
2014 *Hunters, Predators, and Prey: Inuit Perceptions of Animals*. Berghahn Books, New York.

Liversidge, H.M., and T. Molleson
2004 Variation in Crown and Root Formation and Eruption of Human Deciduous Teeth. *American Journal of Physical Anthropology* 134:329–339.

Lowenstein, Tom
2008 *Ultimate Americans: Point Hope, Alaska: 1826–1909*. University of Alaska Press, Fairbanks.

Maley, Blaine
2014 Ancestor-Descendant Affinities between the Ipiutak and Tigara. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auerbach, and Libby W. Cowgill, pp. 71–95. Cambridge University Press, Cambridge.

Mason, Owen K.
1998 The Contest Between Ipiutak, Old Bering Sea, and Birnirk Polities and the Origin of Whaling During the First Millenium A.D. *along Bering Strait. Journal of Anthropological Archaeology* 17:240–325.
2006 Ipiutak Remains Mysterious: A Focal Place Still out of Focus. In *Dynamics of Northern Societies: Proceedings of the SILA/NBAO Conference on Arctic and North Atlantic Archaeology*, edited by Jette Arneborg and Bjarne Gønnow, pp. 103–120. Studies in Archaeology and History No. 10. Greenland Research Centre, Danish National Museum, Copenhagen.
2009 Art, Power, and Cosmos in Bering Strait Prehistory. In *Gifts from the Ancestors: Ancient Ivories on the Bering Strait*, edited by William W. Fitzhugh, Julie Hallowell, and Aron Cromwell, pp. 112–125. Yale University Press, New Haven, Connecticut.
2014 The Ipiutak Cult of Shamans and Its Warrior Protectors. In *The Foragers of Point Hope: The Biology and Archaeology of Humans on the Edge of the Alaskan Arctic*, edited by Charles Hilton, Benjamin M. Auerbach, and Libby W. Cowgill, pp. 35–70. Cambridge University Press, Cambridge.
2016 Thule Origins in the Old Bering Sea Culture: The Interrelationship of Punuk and Birnirk Cultures. In *The Oxford Handbook of the Prehistoric Arctic*, edited by T. Max Friesen, Owen K. Mason, pp. 489–512. Oxford University Press, Oxford.

Mason, Owen K., and Valerie Barber
2003 A Paleogeographic Preface to the Origins of Whaling: Cold is Better. In *Indigenous Ways to the Present: Native Whaling in the Western Arctic*, edited by Allen P. McCartney, pp. 69–108. Canadian Circumpolar Institute, Edmonton, and University of Utah Press, Salt Lake City.

Mason, Owen K., and S. Craig Gerlach
1995 Chukchi Sea Hotspots, Paleo-polynas and Caribou Crashes: Climatic and Ecological Constraints on Northern Alaska Prehistory. *Arctic Anthropology* 32: 101–130.
Mason, Owen K., and James Jordan
1993 Heightened North Pacific Storminess and Synchronous Late Holocene Erosion in Northwest Alaska Beach Ridge Complexes. *Quaternary Research* 40:55–69.
Mathiassen, Therkel
1927 *Archaeology of the Central Eskimos Part I: Descriptive Part*. Report of the Fifth Thule Expedition 1921–1924, Volume 4. Reitzels, Copenhagen.
Melvin, April M., Peter Larsen, Brent Boehlert, James E. Neumann, Paul Chinkowsky, Xavier Espinet, Jeremy Martinich, Matthew S. Baumann, Lisa Rennels, Alexandra Bothner, Dmitry J. Nicolsky, and Sergey S. Marchenko
2017 Climate Change Damages to Alaska Public Infrastructure and the Economics of Proactive Adaptation. *Proceedings of the National Academy of Sciences of the United States of America*. 114:E122-E131.
Merbs, Charles F.
1969 The Significance of Age, Sex, and the Time of Burial in the Interpretation of Thule Eskimo Burial Patterns. Paper presented at the 34th Annual Meeting of the Society for American Archaeology, Milwaukee, Wisconsin.
2007 Who Were the Sadlermiut? A Study in Bioarchaeology. Paper presented at the 40th Annual Meeting of the Canadian Archaeological Association, St. Johns, Newfoundland.
Morrow, Phyllis, and T.A. Volkman
1975 The Loon with the Ivory Eyes—A Study in Symbolic Archaeology. *Journal of American Folklore* 88:143–150.
Murdoch, John
1892 *Ethnological Results of the Point Barrow Expedition*. Ninth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution. Government Printing Office, Washington, DC.
Nelson, Edward W.
1899 *Eskimo about the Bering Strait*. 18th Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, Washington, DC.
Nutall, Mark
1994 The Name Never Dies: Greenland Inuit Ideas of the Person. In *Amerindian Rebirth: Reincarnation Belief Among North American Indians and Inuit*, edited by Antonia Mills and Richard Sloboddin, pp. 123–135. University of Toronto Press, Toronto.
Park, Robert W.
1998 Size Counts: The Miniature Archaeology of Childhood in Inuit Societies. *Antiquity* 72:269–281.
2005 Growing up North: Exploring the Archaeology of Childhood in the Thule and Dorset Cultures of Arctic Canada. *Archaeological Papers of the American Anthropological Association* 15:53–64.
Park, Robert W., and Paul M. Mousseau
2003 How Small Is Too Small? Dorset Culture "Miniature" Harpoon Heads. *Canadian Journal of Archaeology* 27:258–272.
Parker-Pearson, Michael
1982 Mortuary Practices, Society, and Ideology. In *Symbolic and Structural Archaeology*, edited by Ian Hodder, pp. 99–113. Cambridge University Press, Cambridge.
Perry, Megan.
2006 Redefining Childhood through Bioarchaeology: Toward an Archaeological and Biological Understanding of Children in Antiquity. *Archaeological Papers of the American Anthropological Association* 15:89–111.
Peebles, Christopher S., and Susan M. Kus
1977 Some Archaeological Correlates of Ranked Societies. *American Antiquity* 42:421–448.
Rainey, Froelich.
1941a A New Form of Culture on the Arctic Coast. *Proceedings of the National Academy of Sciences of the United States of America*. 27:141–144.
1941b The Ipiutak Culture at Point Hope, Alaska. *American Anthropologist* 43:364–375.
1947 *The Whale Hunters of Tigara*. Anthropological Papers of the American Museum of Natural History, New York.
Rakita, Gordon F.M., and Jane E. Buikstra
2008 Introduction. In *Interacting with the Dead: Perspectives on Mortuary Archaeology for the New Millennium*, edited by Gordon F.M. Rakita, Jane E. Buikstra, Lane A. Beck, and Sloan R. Williams, pp. 1–11. University Press of Florida, Gainesville.
Rasmussen, Knud
1929 *Intellectual Culture of the Iglulik Eskimos*. Report of the Fifth Thule Expedition 1921–24, Volume 7. Gyldendalske Boghandel, Nordisk Forlag, Copenhagen.
1931 *The Netsilik Eskimos: Social and Spiritual Culture*. AMS Press, New York.
Renfrew, Colin
1976 Megaliths, Territories, and Populations. In *Acculturation and Continuity in Atlantic Europe*, edited by Sigfried J. de Laet, pp. 198–220. DeTempel, Brugee.
Rothschild, Nan A.
1979 Mortuary Behavior and Social Organization at Indian Knoll and Dickson Mounds. *American Antiquity* 44:658–675.
Saladin d'Anglure, Bernard
1994 From Foetus to Shaman: The Construction of an Inuit Third Sex. In *Amerindian Rebirth: Reincarnation Belief Among North American Indians and Inuit*, edited by Antonia Mills and Richard Sloboddin, pp. 82–106. University of Toronto Press. Toronto.
Saleeby, Becky, Madonna O. Moss, Justin M. Hays, Cody Strathe, and Dawn L. Laybolt
2009 Faunal Analysis. In *The Archaeology of Deering, Alaska: Final Report on the Village Safewater Archaeology Program*, edited by Peter Bowers, pp. 175–200. Northern Land Use Research, Fairbanks, Alaska.
Saxe, Arthur A.
1970 The Social Dimensions of Mortuary Practices. PhD dissertation, Department of Anthropology, University of Michigan, Ann Arbor.
Schillaci Michael A., Dejena Nikitovic, Nancy J. Akins, Lianne Tripp, and Ann M. Palkovich
2011 Infant and Juvenile Growth in Ancestral Pueblo Indians. *American Journal of Physical Anthropology* 145:318–326.
Shanks, Michael, and Christopher Tilley
1982 Ideology, Symbolic Power, and Ritual Communication: A Reinterpretation of Neolithic Mortuary Practices. In *Symbolic and Structural Archaeology*, edited by Ian Hodder, pp. 129–154. Cambridge University Press, Cambridge.

Sloan, Anna C.
2014 Spirituality and the Seamstress: Birds in Ipiutak and Western Thule Lifeways at Deering, Alaska. *Arctic Anthropology* 51:35–59.
Sofaer, Joanna
2006 Gender, Bioarchaeology, and Human Ontogeny. In *Social Archaeology of Funerary Remains*, edited by Rebecca Gowland and Chrishtopher J. Knüsel, pp. 155–167. Oxbow, Oxford.
2011 Towards a Social Bioarchaeology of Age. In *Social Bioarchaeology*, edited by Sabrina C. Agarwal and Bonnie Glencross, pp. 285–311. Wiley-Blackwell, Chichester, United Kingdom.
Sofaer-Derevenski, Joanna
2000 Rings of Life: The Role of Early Metalwork in Mediating the Gendered Life Course. *World Archaeology* 31:389–406.
Sprott, Julie W.
2002 *Raising Young Children in an Alaskan Inupiaq Village: The Family, Cultural, and Village Environment of Rearing*. Bergen and Garvey, Westport, Connecticut.
Stefánsson, Vihjálmur
1914 *The Stefánsson-Anderson Arctic Expedition of the American Museum*: *Preliminary Ethnological Report*. Anthropological Papers of the American Museum of Natural History, New York.
Sutherland, Patricia D.
2001 Shamanism and the Iconography of Paleo-Eskimo Art. In *The Archaeology of Shamanism*, edited by Neil Price, pp. 135–145. Routledge, London.
Tainter, Joseph A.
1978 Mortuary Practices and the Study of Prehistoric Social Systems. *Advances in Archaeological Method and Theory* 1:105–141.
Turner, Edith
1994 Behind Inupiaq Reincarnation: Cosmological Cycling. In *Amerindian Rebirth: Reincarnation Belief Among North American Indians and Inuit*, edited by Antonia Mills and Richard Sloboddin, pp. 67–81. University of Toronto Press, Toronto.
Wylie, Turrell
1965 Mortuary Customs at Sa-Skya, Tibet. *Harvard Journal of Asiatic Studies* 25:229–242.
Yamada, Yasuhiro
1997 Mortuary Practices for Children in Jomon Japan: An approach to Jomon Life History. *Journal of the Japanese Archaeological Association* 4:1–39.

Submitted February 11, 2018; Revised November 16, 2018; Accepted November 19, 2018