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Precontact Inuit Watercraft and the Hunter–Prey Actantial Hinge

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Watercraft are pivotal components of northern harvesting technologies, enabling the pursuit of game on, beneath, and above the surface as well as travel across watery barriers to access other shores, vastly expanding the economic possibilities and habitable range of coastal peoples. Boats insert themselves between hunters and their prey; walruses congregated at an offshore rookery or pods of bowheads cruising along the coast represent vast but inaccessible stores of resources for hunters without the watercraft, gear, logistics, and tactics to pursue them. The disentanglement of this sociotechnical dilemma is the narrative germ of Eastern Arctic prehistory, and the genius of traditional Inuit technology its solution: specialized watercraft hulled with animal skins, technical clothing and equipment to operate from them, and the organizational skills and ecological knowledge germane to collaborative maritime harvesting in a cold environment. A kayaker armed with harpoon, dart, bow, or lance is among the most iconic images of Inuit in the earliest European depictions (e.g., Sturtevant and Quinn 1989), presumably on account of the technological novelty and practical efficacy of the setup. As explored here, a kayaker pursuing game is also among the earliest motifs in Iñupiat and Inuit figurative engravings. Based on this imagery, alongside the whaling and sealing enabled by boats, certain watercraft appear to have become essential for harvesting the single most important species of terrestrial game—caribou—in at least some settings.

Groups ancestral to Inuit colonized the Western Arctic shorelines of the Bering and Chukchi Seas in the mid-first millennium CE and gradually expanded east onto the Beaufort Sea coast. Beginning around 1200 CE some of these groups rapidly pushed much further east, fanning out across more than 200,000 km of Eastern Arctic island and mainland coast within a couple of centuries and displacing the descendants of Arctic Small Tool tradition groups who

had colonized this geographic zone some 3,500 years earlier (see Friesen and Mason [2016] for recent overviews of arctic prehistory). Although a few Eastern Arctic groups eventually came to spend much of their time in the interior (notably, Kivallirmiut bands of the Barren Grounds west of Hudson Bay), the majority occupied coastal settlements during much of their annual round and devoted substantial effort to harvesting marine prey (various species of whale and pinniped) from watercraft. Small watercraft even figured prominently in economically vital caribou hunts on lakes, rivers, and coastal embayments. The patchiness of arctic resources meant that people had to seasonally reposition themselves to effectively harvest game and fish, so mobility was essential for most northern groups; this too frequently entailed the use of watercraft. Alongside breathing hole sealing that transpired on the frozen ocean surface, maritime harvesting from watercraft was central to precontact Inuit lifeways throughout the Eastern Arctic.

Boats were everywhere essential to work, travel, and trade during the open-water season and, although the material record of Inuit watercraft is relatively slim (and also largely neglected; see Anichtchenko [2016] for a comprehensive overview of the archaeological evidence of watercraft and Hill [2023, 2024] on their cultural significance), a small body of figurative art depicts boating (see Bettina Paulsson in Chapter 4 of this volume for an analogous exploration of rock art depicting maritime harvesting). In the Eastern Arctic this takes the form, predominantly, of representations on incised tool handles of crewed umiaks (*umiat*) and kayaks (*qajat*) employed on the water to harvest bowhead whales and caribou. Although various stages of the whale hunt are illustrated, from cruising in search of whales to towing a carcass to shore (preparatory and consequent steps are rarely suggested), the climax and crisis of the whaling narrative—the harpooner poised to strike a whale and then actually harpooning a whale—predominate (Whitridge 2024). Caribou hunting is usually represented as a constellation of figures a moment before a kill, including one or more kayakers, archers, or atlatl-armed hunters on foot and swimming or standing caribou. Earlier and later moments in the hunt do not appear in the precontact Eastern Arctic imagery, although stalking and butchery are depicted on north Alaskan tools (Chan 2013; Hoffman 1897). These conventional whaling and caribou hunting setups represent significant condensations of the actual breadth of activities attendant on boat use, which encompassed everything from scavenging wood for boat frames to exchanging the surplus from maritime harvesting (both activities undoubtedly employed watercraft themselves). Following brief considerations of action ontologies and Inuit–animal–thing relations, archaeological evidence bearing on Inuit understandings of watercraft in the Eastern Arctic is surveyed. Depictions

of kayaks, archers/darters, and caribou in the Inuit archaeological record are extracted from the literature, interpreted with respect to the inferred ontologies of harvesting, and similarities and differences with the pictorial whaling discourse adduced. Rather than "flat" actor-networks of equally meaningful nodes and linkages, precontact Inuit depicted, and presumably imagined, the extraordinarily complex entailments of watercraft use in terms of particularly meaningful actantial hinges—archetypically, boat-borne hunters encountering swimming prey—implying a distinct ontology premised on these repeated moments of hunter–prey encounter.

Actor-Network Theory, Ontologies, and Figurative Art

The two conceptual frameworks mentioned here—actor-network theory and ontology—have gained variable theoretical traction in archaeology. Actor-network theory imports semiotician Algirdas Greimas's account of the unfolding narrative action that underlies text to the social and material worlds, construing the arrangements and interactions among people, animals, things, and immaterial phenomena as endlessly emergent actantial structure (Greimas 1987; Latour 1993, 2005; Law and Hassard 1999). The particular composition of these arrangements—the intricate narrative symbology stitched into an Iglulingmiut angagok's parka (Boas 1907: 508–510), swarms of mask-like Dorset faces carved into living soapstone at an outcrop in arctic Quebec (Arsenault 2013)—speak to the idiosyncratic configurations of the cultural universes from which they emerged, so the actor-network is a useful way of articulating a ubiquitous and essential ontological eccentricity. Far from being opaquely inaccessible, however, archaeologists gather a wealth of contextual evidence that helps delimit and describe these historically evolving worlds, whether the social relations materialized in dwelling and settlement layout or the intricate mirroring of animal behavior in the elaborate technological setups baked into harvesting gear (Whitridge 2004).

Ontology, for its part, has become one of the theoretical metanarratives of contemporary archaeology—part of archaeology's *own* ontology. Coherent with actor-network theory, the basic premise of an archaeological ontology is that peoples in the past (as in the present) inhabited a world thoroughly configured by the ways that their precursors imagined and experienced reality; these configurations were deeply sedimented in people's memories, understandings, and bodily habitus, not to mention their material things and immaterial relations. This implies not the sort of singular, universal, realist cosmos traditionally posited by Western science but local, idiosyncratic realities inhabited by distinctive sorts of people, other living entities, physical matter, and assorted

forces, any of which might be understood to be sentient and conversant with humans and other interlocutors (Alberti 2016; Viveiros de Castro 1998). For those fully inhabiting such a world, the forms and agencies that are understood to govern everyday experience may be sufficiently dissimilar to our own that archaeologists are liable to misconstrue the resultant material record, so an ontologically attentive archaeology strives to discern, articulate, and interpret these understandings subject to the limitations of its own historically idiosyncratic situatedness as a scholarly discourse on the material traces of past lifeworlds.

Luckily, archaeologists do not have to start from scratch. People in the past reflected on their world and its historical antecedents, producing not only a durable material discourse but also often tangible metadiscursive commentaries on it in the form of vibrant bodies of ornamentation and figuration. Hence, actantially sophisticated objects like kayaks, with dozens of distinctive components and accessories and correlatively complex fields of articulation with their human users and nonhuman settings, incorporate a long-running sociotechnical history that can be divined in the niceties of their design but are also represented in figurative art, where they are meaningfully situated alongside other entities like weapons and animals. Decoration, for its part, is not merely some sort of ornamental veneer on material culture but an essential semiotic constituent of decorated things, a thick layering-on of additional meanings that helps define them and guide their interpretation and use. In the present case, I imagine how precontact Inuit in the Eastern Arctic conceptualized the world *they* inhabited by way of their representations of the activities that transpired within it, and in particular the representation of watercraft employed, iconically, in the course of harvesting animals. Watercraft were foundational to Inuit economy and, along with the dog-drawn komatik (Ameen et al. 2019; Losey et al. 2018; Whitridge 2018), were a cornerstone of the mobility tactics that allowed Inuit to rapidly colonize the vast expanse of the Eastern Arctic between about 1200 and 1450 CE. By way of these assemblies Inuit aligned themselves with animals and things to compose the idiosyncratic networks that organized their lives (Hill 2023; Whitridge 2004).

Inuit–Animal–Thing Relations

Most precontact Inuit economies in the Eastern Arctic—arctic Canada east of the Mackenzie Delta as well as Greenland—were tightly focused on maritime harvesting, especially of ringed, harp, and bearded seals; walrus; and beluga and bowhead whales (Betts 2016; Savelle and McCartney 1988). These yielded much of the food, combustible blubber, hides, ivory, baleen, and bone that fed and furnished the Inuit lifeworld. Other taxa were locally important, such as

fish, birds, and musk ox (Whitridge 2001), but only caribou was widely regarded as an essential economic complement to marine mammals as a source of food, sinew, antler, and, especially, hides for winter clothing (Stenton 1991). The habitability of the Eastern Arctic was utterly conditional on tailored hide clothing, including waterproof gear for operating boats during the open-water season (the hulls of which were themselves covered with stitched hides) and insulating clothes for winter (Issenman 1997). The gear was manufactured from different kinds of animal skin or gut for different purposes and subject to availability, but caribou hides harvested in late summer or early fall, after warble fly perforations had healed and before a thick winter coat had formed, were considered superior for winter garments and procured through concerted harvesting efforts and trade (Burch 1988).

Certain marine mammal species could be harvested without watercraft at certain times of year, principally the ringed seal in winter at its sea-ice breathing holes, but Inuit depended on large open-hulled umiaks and small closed-hull kayaks to harvest the rest. Perhaps counterintuitively, caribou were also preferentially harvested from kayaks as they crossed rivers, lakes, and channels on their annual migrations, typically in concert with terrestrial drive systems that helped hunters channel animals' movements toward tactically advantageous water crossings (Friesen 2013; Stewart et al. 2004). Watercraft were pivotal not only to Inuit economy but to sociality and belief, and, like the iconic implements used to process food and manufacture other tools—the woman's knife (*ulu*) and man's knife (*sapik*)—were characteristically gendered, as woman's boat (umiak) and man's boat (kayak). Elaborate bodies of symbolism traditionally surrounded the vessels and their uses (Arima 1991, 2004; Heath and Arima 2004; Petersen 1986) and even the parts of which they were composed (Hill 2024), understandings that have proved critical for identifying and interpreting archaeological remains of the watercraft themselves (Anichtchenko 2016, 2017).

Precontact Inuit Watercraft

In addition to boat parts and accessories (like paddles and boat racks), the equipment employed from them, the economic footprint of their use reflected in site distributions and harvesting refuse, and the paleopathological ramifications of cold-water boating, depictions of precontact Inuit watercraft in various media are essential for archaeologically situating these complex material cultural assemblies within local Inuit ontologies (Walls 2014: 46–56). Walls reviews the Eastern Arctic archaeological evidence for kayaking and further provides an extended exploration of the intricate complex of knowledge and technical skills that inform contemporary kayak production and use in Greenland Inuit soci-

ety. Substantially complete examples of a fifteenth-century umiak frame from Peary Land (Knuth 1952; Petersen 1986) and an early historic or protohistoric kayak from Morris Bay (Walls et al. 2016), both in northern Greenland, are exceptional examples of the first, given the challenges Inuit shipbuilders faced in accumulating sufficient driftwood for a boat frame and the enormous labor that then went into manufacturing one. Substantial components of repaired or dismantled craft were then liable to be rendered unidentifiable through reduction and recycling of valuable wood and hide coverings for other purposes. Isolated or fragmentary elements of recognizable ribs, stringers, seats, cockpits, and so forth have been sporadically identified in the past (e.g., Arima 2004; Mathiassen 1927a; Walls et al. 2016), but Anichtchenko's (2016) careful reanalysis of archaeological collections suggests that there is a much more extensive material record of frame parts than previously realized. Key accessories such as deck fittings (Walls et al. 2016), paddles (particularly their bone or ivory edging; Gulløv 1997), deck scrapers and amulets (Walls et al. 2016), and stone rests for elevating and protecting both umiaks and kayaks when not in use (Savelle 1987) have also been reported from a number of sites. Open-water sea mammal hunting gear (especially parts of harpoons, darts, lances, and floats) is ubiquitous in precontact Inuit assemblages, but the successful operation of watercraft is perhaps best reflected in the consistent zooarchaeological evidence for open-water hunting. Faunal refuse associated with warm-weather sites (and seasonality determinations of cached resources) points to the reliable procurement of baleen whales and other marine mammals employing watercraft (Betts 2016; Savelle and McCartney 1988, 1994) and the organization of seasonal settlement rounds (including offshore travel) to enable this (Savelle 1987).

A distinct category of evidence for watercraft is their nonfunctional (with respect to their immediate operation) depiction, at least three important genres of which have been encountered archaeologically in the Eastern Arctic: simple wooden, ivory, or baleen models of watercraft usually interpreted as toys, stone outlines of kayaks on dry land employed in games and training, and incised depictions on tool handles of various activities, typically focused on harvesting, that often include watercraft. Each of these implies a rich discourse on watercraft targeted, respectively, at children, adolescents and young men, and adult men, although all of them would have circulated to varying degrees within mixed gender and age settings. Miniature representations of watercraft in wood, ivory, and baleen were presumably usually intended for children's play. Eastern Arctic examples of wood seem large and rugged enough for active play (11 complete toy kayaks from South West Greenland range from 61 to 200 mm and average 138 mm; Gulløv 1997: 219–221) and are generally unadorned but for an occasional inserted dowel schematically representing the kayaker (e.g.,

Holtved 1944: 284–285; Mathiassen 1927a: 46, 163; McCullough 1989: 213–214; McGhee 1984: 72; Schledermann and McCullough 2003: 102). Although aesthetically spare, they are often well crafted and therefore, like the miniature wooden figurines conventionally interpreted as dolls (Whitridge 2021), were likely manufactured by adults. Baleen examples are more schematic, taking the form of simple cut-outs that resemble watercraft in plan or profile (e.g., Holtved 1944: 284; McCullough 1989: 213); if not for the complementary baleen cut-outs of double paddles, the kayaks in plan would be difficult to recognize. Western Arctic examples of ivory kayak figurines (e.g., Anichtchenko 2017: 33–36; Arima 2004: 137–141), some with integral sculpted kayakers and inflated sealskin floats, would have been substantially more time-consuming to produce than wood or baleen ones but could conceivably also have been playthings, but with the marked disadvantage (for toy boats) of not being buoyant.

Simple cobble outlines of kayaks and umiaks much smaller than the actual versions recall the dwelling outlines that are interpreted as children's playhouses (e.g., Hardenberg 2010; Holtved 1944; Schledermann 1975: 121) and may have figured in the imaginative play of younger children. However, kayak outlines have sometimes been reported in groups where, based on Inuit accounts, they were employed as part of a skilled game that trained youths and young adults in accurately throwing a dart while seated with legs straight, as if paddling the figured kayak (Walls 2012). Both the miniature kayaks and umiaks and scaled-up outlines speak to fields of enculturation of the young to the adult activities of operating a skin vessel on the water. Like the dolls and household equipment that oriented girls' play toward the management of social relationships and the operation of an arctic domicile, boys' play was analogously equipped for harvesting and traveling (although both boys and girls sometimes played with both sorts of toys; Park 1998). Perhaps because kayak hunting was such an exceptionally skilled activity, demanding both mastery of a challenging watercraft in life-threatening conditions and the proficient operation of atlatl, dart, harpoon, and lance in hunting swimming prey, the material record of training is substantial and archaeologically recognizable.

Incised depictions represent a specialized genre of script-like hunting discourse that recognizably extends over more than a thousand years of Inuit history (Chan 2013). They often occur on manufacturing equipment, such as drill bows and knife handles, and so would have been produced and observed in the intensely gregarious arena of the *qargi* or men's house, where hunters manufactured and repaired harvesting equipment, shared stories, performed, gamed, feasted, and enacted harvesting-related and other rituals (Hoffman 1897; Ray 1982; Whitridge 2024). Stick figure depictions of scenes of everyday life, with a decided emphasis on core economic activities such as whaling, cari-

bou hunting, and sealing, represent an occasional genre of figurative decoration of ivory and antler tools from at least early Western Thule times (ca. 950–1300 CE) in northern Alaska and from the Classic precontact Inuit period (ca. 1200–1450 CE) in the Eastern Arctic. These supplemented the elaborate geometric and curvilinear decoration that was so characteristic of earlier Old Bering Sea, Birnirk, and Punuk material culture but was becoming increasingly scarce by Western Thule times, and the occasional integration of three-dimensional representations of animals and humans into tool design. Engraved, figurative line art seems to have exploded in popularity in the Western Arctic in the early historic period, judging from the abundance of decorated drill bows and other tools in nineteenth- and early twentieth-century ethnographic collections (Bockstoce 1977; Chan 2013; Hoffman 1897). Together with the more occasional precontact specimens, these constitute an important window on Inuit, Iñupiat, and Yup'ik graphical discourse and everyday life.

Prominent within this genre are depictions of harvesting that typically include hunters, their watercraft and weapons, and prey. Although this seems like a straightforward artistic subject for hunting-dependent groups, it is important to recognize that harvesting involved much more than meeting prey on the tundra or ocean, weapon in hand. As the toys and gaming setups imply, years of observation and practice preceded an individual's transition to the role of successful hunter. All of the gear employed in the harvest had first to be produced from painstakingly assembled materials; the activities of other community members, and especially other hunters, had to be logistically coordinated; and communities typically engaged in a protracted cycle of rites, festivals, and observances that maintained their relations with animal prey, deities, and each other throughout the year. Out on the land, water, or sea ice, hunting entailed the correct reading and anticipation of conditions and prey behavior, operation of sophisticated equipment and facilities, and synchronization of the movements of hunters and prey. Once an animal was harvested, it frequently had to be transported to camp or shore and then processed before being consumed, often communally, and its various products stored or converted into critical items of material culture and perhaps traded. All of these would equally have been candidates for depiction, and, indeed, sometimes were (Chan 2013: 604–639 catalogs scores of such themes on Alaskan drill bows), but the moment of prey encounter on the water was a singularly popular subject of incised art. These contemporary representations of the lives of hunters and game are thus informative for what they leave out as much as for what they show, displaying a meaningfully myopic focus on a small subset of harvesting-related activities and so revealing the inner perceptions and motivations of the artist.

Archaeological Depictions of Kayak(er)s, Caribou, and Archers

Concrete representations of watercraft include incised depictions of harvesting scenarios on bone, antler, and ivory tool handles that occur at low frequencies on ancestral Iñupiat and Inuit sites throughout the North American Arctic after 1200 CE and very occasionally on earlier sites in the Western Arctic. This modest prehistoric sample is vastly enlarged from the mid-nineteenth century, when collectors began to acquire a wide range of northern material culture for museums in the United States, Canada, and Europe and a lively tourist market emerged for decorated ivory tools and figurative art (Bockstoce 1977; Chan 2013; Hoffman 1897; Ray 1982). The content of this imagery is archaeologically informative from a number of perspectives. Some tableaux consist of itemized tallies of hunted animals signified by skins or body parts, thus speaking to the interests and values of their makers as well as a maturing pictographic shorthand. Even more informatively, many seem to depict everyday events in the lives of their creators, such as scenes of village life and realistic hunting scenarios. Chan (2013) assembled an enormous sample of such figurative engravings from coastal northwest Alaska, mostly dating to the late nineteenth and early twentieth century, which provides a valuable window on the art's production context and content (as well as illustrating a substantial portion of it). Bowhead whaling and walrus hunting are particularly well represented, but all sorts of harvesting scenarios are depicted, including caribou hunting. This is a remarkable dataset in that, unlike the extensive bodies of ethnographic and photographic documentation of Yup'ik, Iñupiat, and Inuit on the eve of their absorption into the global network, it articulates their lives and interests as they perceived them, autoethnographically, in a familiar and long-standing graphical idiom (although Inuit also occasionally engaged in both ethnography and documentary photography, as exemplified by the important early twentieth-century work of the ethnographer Knud Rasmussen and photographer Peter Pitseolak). Approaching Inuit–animal–thing relations from the perspective of their local representation allows Inuit figurative art to guide the archaeological narrative.

The Alaskan record seems critical for approaching the Classic precontact and historic material from the Eastern Arctic since it was groups from northern Alaska that expanded into the Mackenzie Delta–Amundsen Gulf region at some point before 1200 CE, and then into the Eastern Arctic. The early Alaskan specimens are thus directly related to the Classic precontact examples as immediate historical precursors within the same cultural lineage. Chan reproduces two of the earliest examples of figurative engraving from northern Alaska, one on an ivory wrist guard collected by Vilhjalmur Stefansson at Birnirk (Chan 2013: 231–232) and the other an adze handle excavated at Kurigitavik by Henry

Collins (Chan 2013: 239–241; Table 10.1; Figure 10.1, designs not reproduced in the figure were either illegible or not illustrated in the original publication). Both are broadly dated to late Birnirk or early Western Thule times and both exhibit scenes with a single archer confronting a single caribou (Figure 10.1:1, 3; although watercraft figure in the elaborate whaling and bear-hunting scenarios on a Birnirk or earlier drill bow from Chukotka [Gusev 2022], neither caribou nor kayaks are present). Giddings and Anderson (1986: 85–86) illustrate the design on an early Western Thule bodkin from Cape Krusenstern that is slightly more complex than the earliest Alaskan tableaux and appears to depict two hunters armed with atlatls who have darted a caribou (Figure 10.1:2; no scale or measurement in original). Giddings and Anderson suggest a watercraft in the background is an umiak, but it equally resembles depictions of kayaks, especially given the size of the craft relative to the people and animal, the suggestion of a single paddler, and the depth of the prow suggested by hatching (as opposed to the projecting "horns" [Petersen 1986: 121] on an umiak usually represented by paired lines in the Alaskan incised art). Caribou hunting was clearly an important theme of incipient pictographic tool decoration, and watercraft came to play an important role in the former activity. While the earliest Alaskan examples are sparse and schematic, the one from Cape Krusenstern begins to evoke the size and complexity of harvesting setups as later toolmakers envisioned them.

Twenty archaeological instances of figurative line art depicting kayakers, caribou, or archers were identified in the Canadian Arctic record, ranging in age from early Classic precontact to early historic Inuit (Table 10.1). Five such scenes occur in distinct panels on a drill bow from northwest Baffin Island, two occur on opposite sides of a knife handle from southeast Somerset Island, two on opposite sides of a comb from northwest Foxe Basin, and two on opposite sides of an ivory fragment from northern Southampton Island. The rest occur individually. The fragmentary kayak images from Southampton Island are on a small portion of an object of uncertain size, the comb from Naujan is missing about one-third of the decorated panel, and portions of one of the caribou hunting panels on the Arctic Bay drill bow have been destroyed; the rest are complete, although Mathiassen's (1927a) photographs are grainy and sometimes difficult to interpret (hence, the published comb image from Kuk is largely illegible). The westernmost Eastern Arctic example is an ulu handle from Booth Island with decoration that appears to be unfinished (Figure 10.1:4); the figure identified as a caribou occurs only in partial outline, and the impaled animal may be a seal or other marine mammal (Morrison 1990: 92). Booth Island harpoon head types and attributes seem to span the entire Classic precontact period but include some traits (nippled shoulders, lashing

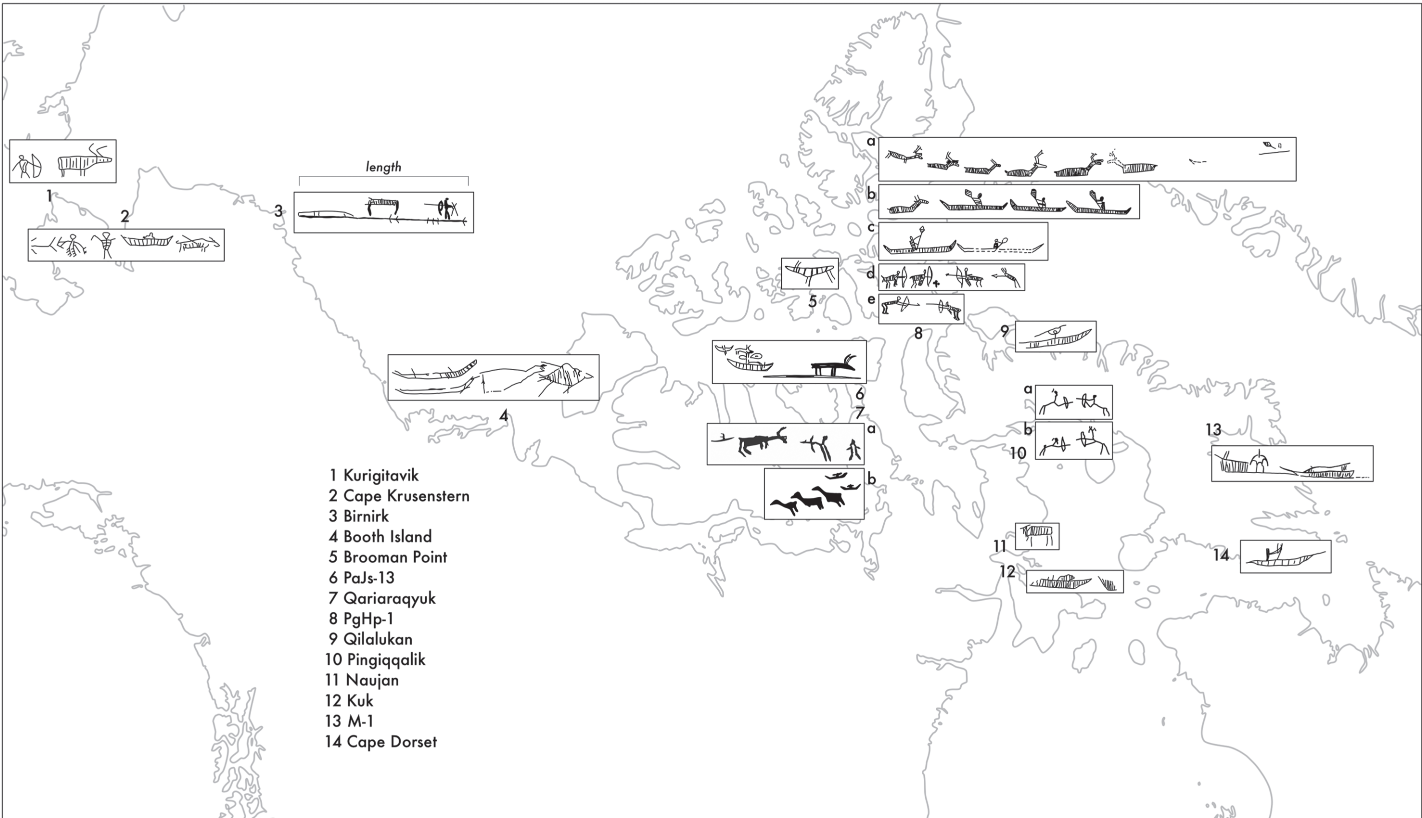

Figure 10.1. Distribution of premigration, precontact, and historic Inuit depictions of kayak(er)s, caribou, and archers.

slots, vestigial spurs) consistent with the earlier part of this range. PaJs-13 and Qariaraqyuk, on southeastern Somerset Island, are contemporaneous winter villages only 10 km apart that likewise span the Classic period. The side-slotted knife handle from PaJs-13 (Figure 10.1:6) seems to depict two kayaker–caribou pairs—a larger and more detailed one in the foreground and a smaller one in the background (Habu and Savelle 1994). The end-slotted knife handle from Qariaraqyuk (Figure 10.1:7) includes a panel on one side depicting a kayaker in the middle distance and a caribou, archer, and *inuksuk* in the foreground (Whitridge 2013). On the other side are two kayakers and three taxonomically ambiguous animals; only two posterior limbs are clearly indicated for each, and so the depictions seem consistent with a seventeenth-century engraving of a Greenland Inuit kayaker hunting waterfowl with atlatl and bird spear (Settle 1675). The zoomorphic design on an ivory comb from the contemporaneous Brooman Point site (Figure 10.1:5) is also somewhat difficult to speciate but appears to depict a lone gamboling caribou (McGhee 1984, and see below).

An ivory drill bow from PgHp-1 near Arctic Bay (Figure 10.1:8) provides the most complex example of pictographic art from the precontact Canadian Arctic (Maxwell 1983). Alongside panels depicting bowhead whaling from umiaks and kayaks with photographic verisimilitude (Whitridge 2024: Figure 3.4) are scenes of village life, feuding and warfare, and two distinct panels illustrating kayakers pursuing caribou. One of these, showing three kayakers approaching a swimming caribou, is intact and the other, which appears to depict two kayakers pursuing six caribou, is partially exfoliated. Two kayakers appear in a partially eroded scene depicting bowhead whaling, and one panel on each side of the drill bow depicts archers facing each other, either singly ("feuding") or in pairs ("warring"). Of the seven caribou, two appear to have distinctly smaller antlers (very similar to the Brooman Point comb), which may reflect the out-of-phase seasonal development and different realized sizes of male and female caribou antlers; males develop earlier and significantly larger racks (Miller et al. 2023), so a pair of delicate-looking prongs appears to have stood for developing, or simply smaller, female antlers. Not only are the individual panels on this drill bow pictorially and narratively complex (i.e., the figures well delineated and precisely equipped), but their juxtaposition on the same object seems to compose a historical mosaic: the decorative border surrounding the warfare episode is discontinuous with the adjoining scenes depicting caribou hunting (along one edge) and umiaks (along the other), which both lack this framing, suggesting that the different decoration zones were added in separate carving episodes. This record of the owner's (or owners') personal and community history may have accumulated over time. The decoration on a

Table 10.1. Incised Tool Decoration Depicting Kayak(er)s, Caribou, and Archers from Precontact and Early Historic Inuit Sites

Site	Map Key	Cultural Affiliation	Content	Length (mm)	Object	Source
Kurigitavik, NW Alaska	1	Birnirk/early Western Thule	archer, caribou	51	adze handle	Chan 2013: 241
Cape Krusenstern, NW Alaska	2	early Western Thule	dart, 2 hunters with atlatls, kayaker (?), darted caribou	—	bodkin	Giddings and Anderson 1986: 85–86
Birnirk, N Alaska	3	Birnirk/early Western Thule	unidentified object, caribou, archer	62	wrist guard	Chan 2013: 231–232
Booth Island, S Amundsen Gulf	4	Classic precontact Inuit	2 kayaks, caribou, impaled animal	73	ulu handle	Morrison 1991: 92
Brooman Point, E Bathurst Island	5	Classic precontact Inuit	caribou	18	comb	McGhee 1984: 74
PaJs-13, SE Somerset Island	6	Classic precontact Inuit	2 kayakers, 2 caribou	90	men's knife	Habu and Savelle 1994: 3
Qariaraqyuk, SE Somerset Island	7a	Classic precontact Inuit	kayaker, caribou, archer, inuksuk	65	men's knife	Whitridge 2013: 234
Qariaraqyuk, SE Somerset Island	7b	Classic precontact Inuit	3 waterfowl (?), 2 kayakers	42	men's knife	Whitridge 2013: 234
PgHp-1, NW Baffin Island	8a	Classic precontact Inuit	6 caribou, 2 kayakers (partially exfoliated)	200	drill bow	Maxwell 1983: 83
PgHp-1, NW Baffin Island	8b	Classic precontact Inuit	caribou, 3 kayakers	105	drill bow	Maxwell 1983: 84
PgHp-1, NW Baffin Island	8c	Classic precontact Inuit	2 kayakers	60	drill bow	Maxwell 1983: 84

Site	Map Key	Cultural Affiliation	Content	Length (mm)	Object	Source
PgHp-1, NW Baffin Island	8d	Classic precontact Inuit	4 warring archers	77	drill bow	Maxwell 1983: 83
PgHp-1, NW Baffin Island	8e	Classic precontact Inuit	2 feuding archers	38	drill bow	Maxwell 1983: 84
PgHp-1, NW Baffin Island	8	Classic precontact Inuit	caribou, kayaker, bird, person (not illustrated)	—	“dagger”	Maxwell 1983: 79
Qilalukan, N Baffin Island	9	Classic precontact Inuit	kayaker	33	comb	Mathiassen 1927a: 185
Pingiqqalik, NW Foxe Basin	10a	late precontact Inuit	2 feuding archers	30	comb	Desjardins 2017: 112
Pingiqqalik, NW Foxe Basin	10b	late precontact Inuit	2 feuding archers	31	comb	Desjardins 2017: 112
Naujan, NW Hudson Bay	11	Classic precontact Inuit	caribou (mostly complete)	10	comb	Mathiassen 1927a: 70
Naujan, NW Hudson Bay	11	Classic precontact Inuit	caribou (not illustrated)	—	comb	Mathiassen 1927a: 70
Kuk, N Southampton Island	12	Classic precontact Inuit	kayak, umiak (fragmentary)	44	unidentified	Mathiassen 1927a: 251–252
Kuk, N Southampton Island	12	Classic precontact Inuit	kayak, whale (fragmentary, not illustrated)	—	unidentified	Mathiassen 1927a: 251–252
Kuk, N Southampton Island	12	Classic precontact Inuit	2 caribou (not illustrated)	—	comb	Mathiassen 1927a: 260
M-1, SE Baffin Island	13	early historic Inuit	tent, person, kayak	44	drill bow	Schledermann 1975: 122
Cape Dorset, S Baffin Island	14	precontact/early historic Inuit	kayaker	17	unidentified	Arima 1994: 194

dagger-like ivory object from the same site is narratively likewise idiosyncratic (a bird sitting on the stern of a kayak while the kayaker approaches a caribou, and a figure on shore with upraised arms).

An ivory comb from Pingiqqalik in northwest Foxe Basin (Figure 10.1:10) has virtually identical scenes of archers facing each other—presumably feuding—on each side (Desjardins 2017: 113). This is the only object in the sample with no depictions of watercraft or animals, but the feuding scenes are very similar to the one on the Arctic Bay drill bow. Although sharpened and barbed arrowheads (as distinct from bird blunts) might have been used against a variety of terrestrial species, other weapons and techniques were favored for polar bear, musk ox, and small game; the principal uses of sharpened or barbed arrowheads seem to have been for caribou hunting and interpersonal conflict (as clearly depicted on the specimens from Qariaraqyuk and PgHb-1, respectively). In his original monograph defining "Thule" (precontact Inuit) culture, Mathiassen (1927a) reported kayak and caribou pictographs from northern Baffin Island (Qilalukan) and northwestern Hudson Bay (Naujan and Kuk). He illustrates a single, slightly damaged caribou on one side of a comb from Naujan (Figure 10.1:11; Mathiassen 1927a: 70) but does not provide an illustration of a comparable figure reported on the reverse. Two caribou are indicated on one side of a poorly reproduced comb from Kuk (Mathiassen 1927a: 260). A comb from Qilalukan (Figure 10.1:9) illustrates a kayaker with upraised weapon on one side and a crewed umiak with standing harpooner on the other (Mathiassen 1927a: 185). A decorated ivory fragment from Kuk (Figure 10.1:12) appears to depict portions of a kayak and an umiak on one side, and a kayak and a whale on the other (Mathiassen 1927a: 251–252). Conceivably, the latter are snippets of complex harvesting setups like the ones on the Arctic Bay drill bow. Arima (1994: 194) illustrates an object from the Cape Dorset area (Figure 10.1:14) with a lone kayaker and Schledermann (1975: 122) portions of an eroded drill bow from B-1 on Cumberland Sound (Figure 10.1:13) that include a scene of an individual standing between a tent and a beached kayak. Although additional examples undoubtedly exist, this seems to represent a reasonable sampling of known depictions of kayaks, archers, and caribou from precontact and early historic Canadian Inuit sites and premigration sites in Alaska, suggesting interesting overlaps and divergences in the way these figures are represented.

In addition to the social and semantic implications of these depictions, explored in the following section, it is noteworthy that some of them appear to illustrate meaningful technical details of ancient watercraft. For comparative purposes, individual kayaks and kayakers are extracted from the panels in Figure 10.1, rescaled to the same length (or estimated length for fragmentary images), and enlarged in Figure 10.2. Some of the images are mirrored so that

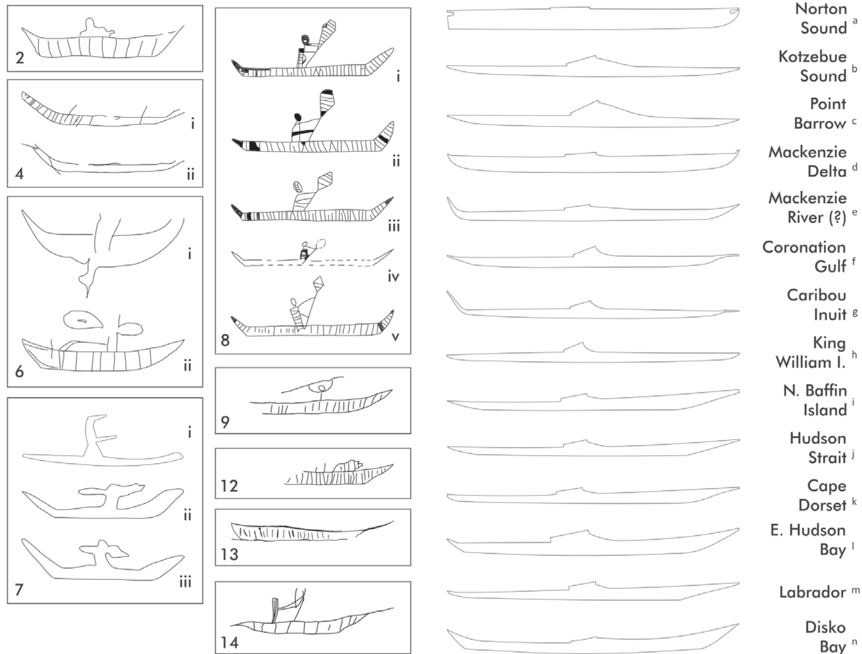

Figure 10.2. Details of archaeological kayak depictions. The images in the left two columns are rescaled to the same length (complete length estimated for 9 and 12), mirrored as necessary so that the inferred stern is at left, and numbered as in Figure 10.1. The late nineteenth- and early twentieth-century kayak profiles at right are likewise rescaled and reoriented. Notes: *a.* Chapelle 1964: 198; *b.* Chapelle 1964: 201; *c.* Chapelle 1964: 201; *d.* Chapelle 1964: 201; *e.* Chapelle 1964: 203; *f.* Chapelle 1964: 203; *g.* Chapelle 1964: 203; *h.* Chapelle 1964: 203; *i.* Arima 1990: 187; *j.* Arima 1990: 187; *k.* Chapelle 1964: 205; *l.* Arima 1990: 187; *m.* Arima 1990: 187.

all of the kayaks are depicted conventionally, with what appears to be the stern at left, and a representative array of historic kayak profiles from various regions is shown at right, likewise rescaled and aligned. A late nineteenth-century Central Yup'ik profile from the southern shore of Norton Sound, with its distinctly truncated stern and bifurcated bow, is provided by way of contrast. All of the rest are historic examples from Iñupiat and Inuit areas east of Bering Strait and resemble the archaeological depictions more closely. Although some of the latter are overly stylized (e.g., 7.i), and the orientations of others are debatable (especially 4.i and 4.ii, which are taken to resemble the Mackenzie River profile most closely but would resemble the East Hudson Bay profile if reversed), most of the illustrations provide some robust, interpretable structural detail, especially with respect to the height and inclination of the bow and stern. In

particular, the inferred sterns tend to be angled sharply upward, between about 45 and 60°, from the water surface (e.g., 2, 6.i, 6.ii, 7.ii, 7.iii, 8.i, 8.iii, 8.iv, 8.v, 13), while the inferred bow tends to project further from the submerged portion of the hull and at a more acute angle, between about 30 and 45° (e.g., 2, 6.ii, 8.i, 8.iii, 8.iv, 9, 12, 13, 14). The closest analogs for most among the ethnohistoric profiles are those from the Mackenzie River (unfortunately, with somewhat uncertain provenience) and Disko Bay, although the archaeological examples from Qilalukan, M-1, and Cape Dorset more strongly resemble the ethnohistoric examples from the same regions. Kayak designs clearly varied significantly in time and space, reflecting diverse paddling conditions (wind, waves, ice) and kayak uses (caribou hunting, sealing, whaling) as well as regional cultural traditions and shifting styles. Although it would be challenging to characterize these from the archaeological record of boat parts alone, a fine-grained analysis of boat forms can usefully integrate these two-dimensional depictions, along with the three-dimensional toys, paddles, and boat rests that Arima (2004) effectively explored.

Harvesting Ontologies and the Semiotics of Tool Decoration

The motifs of interest—kayaks, kayakers, archers, darters, caribou—are depicted in these panels both singly and in various combinations. Kayakers occur apart from hunters and caribou (sometimes with whales, waterfowl, or village scenes) in seven instances, caribou alone in four, and archers alone in four. Kayakers and caribou occur together five times, and archers and caribou twice, and all three figures occur together twice. Figure 10.3 illustrates these proportions schematically. Caribou, both alone and in combination with the other motifs, and kayaks were popular subjects of figurative tool decoration; caribou occur in 54% of the representations that include one of these three motifs, and kayakers in 58%. Perhaps because kayaks were employed in all facets of warm-weather travel and harvesting, including whaling and fowling, they were likely to figure in the scenarios that carvers were inclined to depict. Kayakers were critical to caribou hunting in many areas, deploying in lakes, rivers, and inlets to intercept animals funneled to crossings by *inuksuit* and beaters (Friesen 2013).

Kayaks are unusual technical devices (Arima 1975, 1987; Heath and Arima 2004; Petersen 1986; Walls 2014). Not only are they exceptionally effective and useful arctic watercraft (as, indeed, are umiaks), but operating one requires the kayaker to slide their legs deep inside the hull, allowing them to effectively transfer muscular energy to it but rendering their legs otherwise immobile; in a practical, physiological fashion, the kayak substitutes for the user's legs, creating a new person-kayak chimera that can maneuver smoothly and rapidly

on the water's surface. This effect is accentuated when the kayaker's waterproof clothing (i.e., a tightly hooded gutskin parka) is affixed to the cockpit, allowing a skilled paddler to safely roll the craft (Heath 2004; Walls 2014). This coalescence of kayaker-person and kayak-thing is exemplified ethnographically by Greenland Inuit hunters who identified so closely with their role as kayakers that they would sometimes arrange to have themselves interred seated in their craft, as if kayaking into the afterlife (Whitridge and Kleist 2024). However, transforming into a person-kayak was not without its risks; a variety of disturbing psychological effects, especially losing the perception of the horizon under still, overcast conditions, could induce panic disorder and led some hunters in the past to renounce kayaking altogether (Christensen and Rud 2013; Heath 2004). The frequent depiction of kayaking in Inuit incised art, along with widespread stone outlines and toys (and occasional person-kayak carvings), speak to the substantial set of understandings, skills, and anxieties that emerged over a lifetime of familiarity with the craft as well as the cultural discourses that accompanied this.

The most common decorated tool types in this sample are drill bows, men's knives, and combs, with single examples of the other types (Table 10.1). Although scenes of feuding occur on both sides of one comb, and kayak and umiak hunting on opposite sides of another, the most common thematic element in the comb art is caribou, either paired or alone. Combs are conventionally understood as objects used by women in the sort of elaborate hair dressing documented historically (e.g., Boas 1964 [1888]: 150–151) and suggested by prehistoric figurative representations (including dolls and anthropomorphic varieties of combs and *tingmiujat* [flat-bottomed game pieces resembling a floating bird or chimerical person-bird]). While caribou hunting and various scenes involving kayaks occur on an array of tool types mainly associated with men's work, the association of isolated caribou with women's personal dress is striking. One practical connection that can be drawn here is between women's lifeworld and the land (as opposed to their oft-cited symbolic association with the sea; McGhee 1977). While men regularly pursued swimming prey (including caribou) from watercraft during the open-water season, women's routines at this time were closely bound up with activities on shore, especially processing the flesh, fat, hides, and bone of harvested animals. While caribou, from this perspective, may have suggested the drudgery of scraping hides and pounding bones for grease, when viewed at a distance or contemplated in retrospect, they may have held a positive affective resonance, evoking the warmth and companionship of the summer camp, the freedom of roaming the tundra in search of berries and herbs, or other pleasant associations. This is suggested by the ornamental caribou's detachment from any work context (such as be-

ing pursued by archers and kayakers, as in the decoration of men's tools) in the comb's isolated visual field. Furthermore, if men made and decorated the combs, as seems possible, then pairing this sort of imagery with an intimate personal object that may have been used by women speaks also to the emotional valence of women's and men's relations, in a similar way to women's production of men's clothing.

The depiction of activities ethnographically (and conventionally) associated with men (feuding and maritime harvesting) on two of the combs is more surprising and is challenging to interpret. It may represent women's interest or actual engagement in these activities or, alternatively, the combs' possession and use by men, although the ethnographic literature often refers only to women using combs (e.g., Boas 1964 [1888]: 150–151; Jenness 1946: 50–51). Rasmussen (1931: 264), however, mentions Netsilingmiut taboos preventing "the people of a village" from combing their hair while in mourning, apparently implying that men normally did as well. Oosten (1982: 104) further draws attention to the centrality of combing in Inuit Sedna traditions: when game disappears, an angakok (who would usually be male) travels to the sea goddess's undersea home and combs her hair to appease her. Eastern Arctic combs are often exceptionally well made in relatively precious ivory and are finely decorated with patterned borders and various geometric and figurative motifs, but archaeological discussion of their use and meaning is surprisingly thin (e.g., Mathiassen 1927b: 113–115). They seem to have held a distinctive cultural position, part of which, given the occurrence of motifs relating to both women and men (isolated caribou versus feuding and maritime hunting), was perhaps the bridging of their respective symbolic fields. The overall abundance of scenes of archers in conflict is also intriguing but again hard to interpret. Although this only occurs on two objects in the sample, it is repeated on both, suggesting some special cultural salience to the image and to the activity. A scene of archers or darters confronting caribou likewise occurs in four panels but on four different objects; hence, it was an even more widely circulating motif. As suggested by the Cape Krusenstern and Qariaraqyuk hunting scenes, hunters (both archers and darters) were also linked to kayakers through their joint participation in the caribou hunt, suggesting the three composed a small but meaningful semantic nexus (Figure 10.3).

A comparison of these designs with precontact and early historic incised line art illustrating various facets of the bowhead whaling operation is also instructive. Among a sample of 139 such depictions from precontact and historic Inuit, Iñupiat, and Yu'pik contexts, a limited number of conventional scenarios were repeatedly evoked, and of these the scene most commonly represented

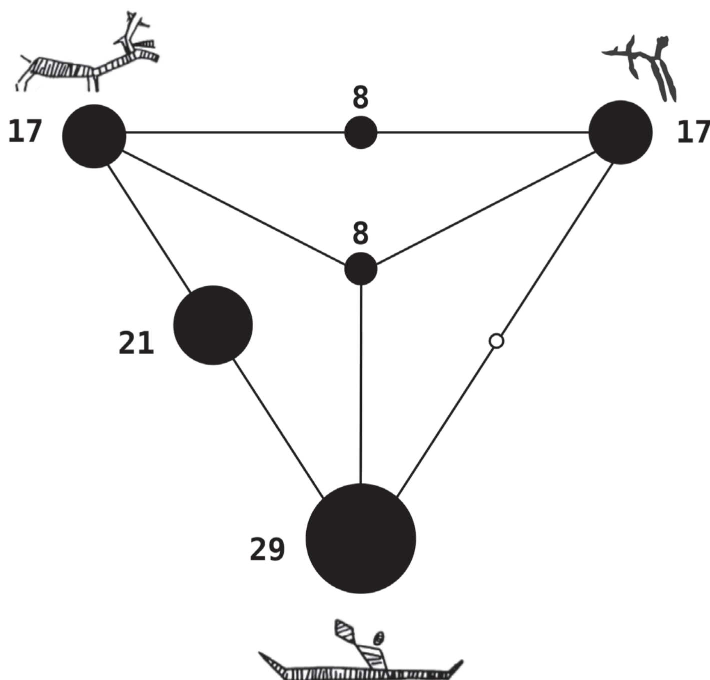

Figure 10.3. Relative frequency (%) of kayak(er), caribou, and archer motifs, alone and in combination.

was the precise instant at which a harpooner, standing in the bow of an umiak, actually struck a whale (Whitridge 2024). Of all the hours that must have been spent cruising leads, approaching potential targets, attempting to harpoon them, chasing a whale to which floats had finally been attached, killing it with lances, and then towing the carcass to shore, the fleeting moment during which the harpooner plunged the weapon into the whale's back was returned to again and again. The frequency of depiction of principal episodes in the whaling sequence reveals a steady increase in scenes approaching the climax (the standing harpooner about to strike) and then peaking at the narratological crisis (the harpoon held in contact with the whale), followed by a sharp decline in representations of the apparently anticlimactic activities of killing and towing the harpooned animal (Whitridge 2024: Figure 3.8). Although the present sample is much smaller, there is a similar tendency toward a modal, archetypal setup in the caribou hunting depictions in the form of one or a few kayakers and swimming or standing caribou, occasionally with a prominent archer or darter in

the scene. Weaponry is somewhat less common than kayaks: 19 kayaks appear in 12 different scenes, whereas 15 archers/darters appear in 9 different scenes. However, archers/darters appear alongside caribou in only 4 of the latter. Unlike the whaling case, the crisis of animal struck by weapon is an infrequent theme in the caribou imagery (1 of 20 animals in 13 scenes), but in both genres hunters are represented at the apex of technical preparedness, on the prow of a crewed umiak, harpoon in hand, or chimerically merged with a kayak hull, paddle upraised. For the skilled and well-armed kayaker, perhaps this moment of close approach was the point at which a kill was effectively ensured, as it was for whalers only when the harpoon line was actually affixed to the prey.

There is a simplicity, a semiotic economy, to these images and scenarios, meant to fit in the materially confined space of a tool handle and evoking a similarly compact emotional register: the sudden copresence of human and animal on the cusp of prey being dispatched. Standing behind them, undoubtedly, are real encounters with real animals, which are recalled and distilled into the decoration of an everyday tool, and kayaks or umiaks are essential to many of these scenarios. Watercraft were pivotal, helping to compose the actantial hinge of core cultural narratives. They were both vessels for the narrative action and embodied its consequences since they were manufactured from animal skins that were either harvested directly or obtained in trade with the fruits of the harvest.

Conclusion

The archaeological record of Inuit kayak use is fairly substantial, ranging from fragments of the watercraft themselves (Anichtchenko 2016, 2017; Arima 2004; Walls 2014; Walls et al. 2016) to musculoskeletal pathologies arising from their use (Merbs 1983). Each category of evidence represents its own intriguing rabbit hole, and many (like toys) have received only cursory attention. The depiction of kayaking, here considered in its overlap with caribou hunting, is one of these neglected categories. Nevertheless, Arima (2004), Maxwell (1983), and others have demonstrated that there are layers of granular, interpretable content to the archaeological imagery, as the present study sought to explore. As with the analogous whaling imagery (Whitridge 2024), the incised kayaking line art forces us to center our understanding of the Inuit imaginary on a specific chronotope: the moment of encounter between hunter and prey. Of all the conceivable circumstances that carvers might have chosen to depict, this was the moment they returned to again and again, as storytellers and performers undoubtedly did as well. A fragment of precontact Inuit ontology might be extracted from this actantial kernel, emphasizing the overarching significance

of the momentary copresence of hunter and game and all that this implies, including the importance of a deferential respect performed into reality by a lifetime of attending to and honoring game; the necessity of amassing a wealth of experiential knowledge of animal behavior, weather, and equipment; and the vicissitudes, nevertheless, of animal behavior, weather, and equipment. Interestingly, what we do not see in the engravings are suggestions of all the things that might go wrong, of arrows and darts that missed their mark or broke, of boats overturned in the heat of pursuit. The representations evoke an ontology of positive affect, of things that had gone right to enable this felicitous culmination of learning, experience, and work. Neither do these images represent anything close to a complete account of human–animal interaction since they fail to document many of the activities that came before and after. Numerous individuals besides paddlers, harpooners, and archers assumed tactically essential roles—especially the women who manufactured much of the gear and processed the spoils—but are elided in the visual narratives. The outlines of precontact Inuit ontology emerge from these highly selective depictions of the harvest, with the encounter between hunter and prey, mediated by watercraft and weapons, pointedly distilling a messy, sprawling reality.

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