

Introduction

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When imagining the invention of the earliest metals in the world, most people envision warm desert ecozones in areas that eventually spawned the great civilizations of Egypt or Mesopotamia. Others, perhaps those who are well versed in world history, might conjure up lesser-known urban civilizations such as those of East Asia or the bronze producing cultures of highland South America. Indeed, all these ancient locales feature a fascinating sequence of technological innovation. They also share a set of commonalities that are generally considered necessary for metallurgy to begin in the first place. Each of these aforementioned areas where metal use was independently invented consisted of generally large, sedentary, food producing populations with varying degrees of social stratification and at least some level of centralized social organization.

But what if we told you that over nine thousand years ago, earlier than many of the regions mentioned above, small bands of foraging populations had begun to use metal to manufacture sophisticated tools and weapons—such as spearpoints, knives, harpoons, and axes—featuring aesthetics that rivaled those found in Bronze Age cultures around the world? What if we told you those small groups of foragers lived and thrived in North America, working with native metals found in arctic, subarctic, and temperate environments? What if we told you that the traditional narrative of technological progress (i.e., progressive “ages” of stone, copper, bronze, and iron) was conceptually lacking and was in fact much more varied over time and space? Despite common perceptions, human technological innovation need not follow a specific nor linear trajectory. By studying the human past, archaeological research has demonstrated time and again that many factors affect *when*, *why*, and *how* humans innovate or adopt new tools and practices.

Metals, like all raw materials used by past cultures, fluctuate in their perceived level of functional, social, or ritual value, with none of these roles being exclusive to another. Though they are often in concert, they can also be at odds. For example, a knife made from copper might be heavier than a stone knife, and might also function less efficiently, but regardless of these practical constraints, the owner might choose to use it because of the spiritual value associated with the metal, or alternatively for the prestige associated with owning a rare item. Somewhat incongruously, sociocultural factors can sometimes outweigh techno-functional factors, and groups may cease using what is generally perceived

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as an “advanced” technology when it no longer suits their cultural beliefs. It is these fascinating instances of invention, proliferation, and disenchantment that are so complexing, but as such, grant a unique perspective on the human creative process and the dynamics that stimulate culture change.

North America provides a rare window from which we can explore these processes, as it is the only place on earth where forager (i.e., hunter-gatherer-fisher) populations regularly and expertly employed locally available metals to produce a wide variety of utilitarian and ornamental items. Even more exciting is that this is not an isolated incidence. As demonstrated herein, Indigenous groups from all around the continent—including arctic and subarctic regions of Northwest coast, Interior Northern Plains, and Northeast coast, as well as the Mid-Atlantic Region, the Lower Southeast, and an extensive area surrounding the central Great Lakes—innovated, used, modified, and exchanged metals at various times for various reasons.

This volume brings together scholars from across the North American continent who share their research on Indigenous metal use, and in doing so, challenge the traditional narratives of technological development. Indeed, rather than a progressive linear trajectory, the chapters in this volume represent contemporary theoretical perspectives and methodological approaches which aim to highlight the ingenuity and craftsmanship of diverse Indigenous populations.

How the Volume Came About

The idea for this volume stemmed from an event we organized at the 2023 annual meeting of the Society for American Archaeology (SAA) in Portland, Oregon. Our intent in organizing the symposium, and subsequently this volume, was threefold: (1) to facilitate discourse between researchers working in various regions of the continent, (2) to enhance engagement with the broader archaeological community, and (3) to expand global awareness of the extent and variability of metal use in North America. Additionally, we came to realize that much of the previous work covering Indigenous use of metal has focused primarily on the social, symbolic, and spiritual aspects of its use. While these aspects are central to anthropological study and vitally important to understanding the entirety of the human past, we were motivated by our mutual work investigating the Indigenous use of metal in the production of utilitarian items as supplements, or in some cases replacements, to standard forager raw materials like stone, bone, and antler. We are also cognizant that in many cultures utilitarian items function simultaneously as symbolic objects and that these concepts are not in any way mutually exclusive. Here, our objective was to solicit contributions that further our understanding of the myriad ways In-

Indigenous cultures innovated with metals, how they transmitted knowledge and maintained their metalworking skillsets, how they exchanged metal materials, and the ideas associated with its use across the continent.

Our Background Studying Indigenous Metals

As so often happens in archaeology, we each began to explore forager use of metals independently of one another. Bebbler's research program centered around Archaic period native copper use in the western Great Lakes, while Wolff's centered around contact era iron use by the Beothuk of Newfoundland. Despite the seemingly disparate research programs, after several collegial conversations regarding our respective areas, we concluded that there were in fact many areas of overlap and potentially broader implications that could be drawn regarding archaeological patterns between these metal using groups separated by millennia. We also commiserated about the general lack of awareness among both scholars and laypeople regarding not only the prevalence of metal use in the Americas but also the outstanding scholarship that had taken place in recent years regarding this topic.

Michelle Bebbler began her study of North American Indigenous metals with her doctoral research, which was aimed at understanding the functional efficiency of tools made from copper compared to analogous tools made of stone (Bebbler and Eren 2018; Bebbler, Key, et al. 2019) or bone (Bebbler, Norris, et al. 2019). The results of this three-part research program were considered in light of population dynamics and ecological change to better understand the complex interrelationships between social, ecological, and technological spheres of past human behaviors. Bebbler (2021) has argued that understanding metal tool functional efficiency, as well as the costs and benefits of procurement, production, and durability, are central problems that must be understood in order to tease apart the complex web of copper tool innovation, social learning and knowledge transfer, and variation in production and use, along with the social transmutation of copper objects and their eventual decline. Along with her experimental and replicative research Bebbler has continued to address problematic, progressivist concepts associated with the trajectory of Indigenous copper use, such as "technological devolution" (Binford 1962), while hoping to shed new light on this often ignored topic in North America's ancient past.

More recently Bebbler has used optimal linear estimation modeling to predict the origin of copper use in the Lake Superior region (Bebbler and Key 2022) and Bayesian modeling to understand the age ranges for cultural practices (Bebbler 2021). She has also done research exploring the diversity of copper tool forms between the cultural core and periphery (Bebbler and Chao 2022) and is currently using paradigmatic classification methods to explore

the phylogenetic relationships between copper point classes. Likewise, Bebber has frequently asserted that the trajectory of native copper production and use in North America should be considered at both regional and worldwide scales. Understanding this phenomenon at the local level can inform our understanding of global evolutionary processes involved in the adoption of new tool technologies while simplifying the complex interrelationships between social and technological adaptations.

Christopher Wolff's research has primarily focused on Archaic, PaleoInuit, and pre-contact hunter-gatherer societies of the Far Northeast of North America. The bulk of that research focused on human-environment interactions (e.g., Wolff et al. 2010; Wolff and Holly 2019; Wolff 2024), early architectural development (Wolff 2008; Wolff 2022), and lithic technology (Wolff et al. 2019); however, more recently, he and his colleagues have been investigating the social and technological changes that occurred among the Beothuk of Newfoundland prior to European contact and how they changed during the Colonial Period of the island (e.g., Holly et al. 2010; Holly et al. 2020; Holly et al. 2023; Wolff et al. 2021). In particular, Wolff is interested in what influenced the decision-making among the Beothuk to replace much of their lithic traditions with metal, and the impacts that colonialism had on their technological systems and social organization, and how those interrelate with each other, their cultural interactions with Europeans, and their environmental context.

Issues Driving the Development of This Volume

When Bebber initially began researching North American copper use, she, like so many others before, found herself enthralled and amazed by the breadth and sophistication of this metal industry. Initially interested in the study of incipient metallurgy and the overlap with stone technologies in Ancient Near Eastern contexts, she was astonished by the immense variety of copper tool forms that had existed along with lithic tools in the North America Great Lakes region. Most surprising was that in all her years of academic training, she had barely heard mention of Indigenous metallurgy. Occasionally, the use of copper would appear as a case study (*sensu* Binford 1962), with the sheer magnitude, diversity, and distribution of copper regularly downplayed. Indeed, after she initiated her research program and began sharing it with other colleagues from around the world, many responded with variable degrees of interest, disbelief, and general confusion as to why this phenomenon was not better known or regularly mentioned in research pertaining to global metal use.

A potential factor limiting scholarly engagement, is the inherently problematic perspective that North American Indigenous metallurgy is irrelevant to the broader study of metal technological development on a global scale,

particularly when approached from the “Standard View of Technology” (see Chapter 1, this volume; Pfaffenberger 1992). Unfortunately, because of this lingering sentiment in academia, North America is regularly ignored in larger discussions of humanity’s earliest use of metals. Fortunately, over the past decade, in large part due to work by scholars in this volume, this view has improved, and North American metal use has begun to be published in global scientific journals and is more frequently acknowledged in global surveys of archaeometallurgy. Indeed, the impressively expansive tome, *Archaeometallurgy in Global Perspective: Methods and Syntheses* (Roberts and Thornton 2014) features three chapters on metal use in the Americas, one on South American Andean metallurgy (Lechtman 2014), one on Mesoamerica (Hosler 2014), and an engaging chapter on North American copper use in the Eastern Woodlands (Ehrhardt 2014). Despite the inclusion of North America in this comprehensive global text, engagement with Indigenous metal use is relatively rare elsewhere. This could be partially due to the fact that scholars do not seem to agree on the ways in which forager use of metal should be conceptualized, nor is there agreement on whether it can inform our understanding of broader technological innovations given the difference in scale. Although Bebbler has argued for the value of Indigenous copper use as providing information on a little studied aspect of incipient metal use around the world, this view has not been widely accepted. However, we argue that developing a more thorough appreciation for the practical motivations and innovative strategies employed by North American foragers from various environments can begin to fill the gaps in our understanding of the factors driving experimentation with native copper in various global contexts. Unfortunately, despite this potential, some continue to view forager metal use as irrelevant at best, or a technological “dead end” at worst. Indeed, this view is highly problematic and again falls victim to progressivist assumptions that “true” metallurgy must involve, or at minimum lead to, high temperature smelting and alloying technologies (see discussion in Roberts, Radivojević, and Rehren 2021: 621).

Here we seek to further the decoupling of metal from large scale urban societies and social inequality while highlighting the diversity of Indigenous metal use. Contributions herein span contexts across North America, including the Central Canadian Arctic and Subarctic, Western Subarctic, Pacific Coast, Northeast Arctic and Subarctic, Central Great Lakes, Mid-Atlantic, and Lower Southeastern regions. Our contributors highlight the diversity of Indigenous metal use and investigate topics ranging from procurement and practice to ideological and functional interpretive frameworks that place the use of metals into broader regional and interregional contexts. Novel questions are addressed using cutting-edge methods—including experimental archaeology, morphometric analysis, geochemical studies, and statistical modeling—to go beyond traditional narratives regarding technological development.

Contributions to This Volume

H. Kory Cooper, Matthew Pike, and Garrett Hunt begin the volume with an investigation of native copper use in Northwestern North America from areas including the Central Canadian Arctic and Subarctic, Western Subarctic, Northwest Coast, and the adjacent interior Plateau. Their review sheds light on the spatial relationship between copper sources and artifact variability within and between regions. They also consider the reasons why copper may or may not have been used by certain groups and explore the interrelationship of copper use and changing social structures.

Cooper and colleagues are experts in this region, having conducted several decades of research including analysis of over three hundred sites. Of central relevance to the goals of this volume is their conceptualization of the “unilinear cultural evolutionary hangover” which offers a much needed critique of our tendency to view human innovation in terms of a progressivist series of ever improving “stages.” Cooper et al. employ concepts from behavioral archaeology, including design theory and technological transfer to frame their discussion of copper in these areas. Their consideration of performance-based life history and the ways in which people make choices based on cost and benefits demonstrates how the innovation of new materials does not necessitate the abandonment of other materials. They make several intriguing conclusions such as the lack of clear connections between the early use of native copper on the southern (British Columbia) and northern (Alaska) areas of the Northwest Coast, as well as between the Alaska-Yukon region and the central Canadian Arctic and Subarctic.

In Chapter 2, Patrick Jolicoeur’s study investigates the scale of metal use between the Inuit and Dorset of the eastern North American Arctic including their levels of engagement with native copper, meteoric iron, and European metals. He notes the difficulty in studying metal use in this area due to the underrepresentation of metal objects in artifact collections due to recycling and curation of metal by Indigenous peoples, as well as post-occupation scavenging, and issues of archaeological sampling bias. Jolicoeur’s approach cleverly remedies this problem by using proxy data from organic materials such as bone, ivory, or wood handles and supports to indirectly assess the extent of metal use. The chapter provides a summary of research in the area, and then provides new data gleaned from his analyses of blade slot thicknesses, which can be used as a proxy to determine whether stone or metal was used as the blade raw material. Jolicoeur finds that Dorset and Inuit harpoon head blade slots are morphologically distinct from one another and as such concludes that materials from the same geographic region were used differently depending on their cultural and temporal context. Significantly, Jolicoeur’s discussion emphasizes how novel approaches can generate more and better data regarding

the extent and character of metal use which will ultimately contribute to our understanding of the complex human dynamics in the Eastern North American Arctic roughly eight hundred years ago.

Timothy McCoy and Catherine Corrigan's chapter provides in-depth coverage of the rarest and possibly the most "exotic" metal used by Indigenous peoples in North America, meteoric iron. They begin with a review of their sourcing research on meteoric iron artifacts. They then describe their investigation of the methods used by Indigenous people during the extraction and production of objects made of meteoric metal. The objects of interest are meteoric iron beads associated with the Hopewell cultures of the Eastern Woodlands, specifically those of the Havana Hopewell of Illinois. McCoy and Corrigan discuss in detail the unique features of meteoric iron that might have appealed to Hopewell people, such as, reflectivity, density, and exoticness. They note how these characteristics are in many ways similar to those of native copper. However, they are correct in noting that meteoric iron lacks the ductility of copper and would be more difficult material to work. The authors go on to describe their experiments investigating the challenges of producing items, specifically beads, from this unique raw material, a question posed in their earlier work. Specifically, here they address the unresolved question regarding how the small pieces of the Anoka meteoric iron would have been removed from the larger mass in order to form the individual beads. They present the results of their experimental replication of beads using meteoric iron with detailed explanation of deformation, polishing, bending, and fatigue failure and compare their findings to an artifactual bead. Their experiments reveal the potential strategies of Hopewellian artisans to extract material and then manufacture and refine artifacts made from this truly rare metal.

In Chapter 4, Gregory Lattanzi also presents research centered around Hopewell beads, however his focus is on beads made from native copper, which were at their height during the Early to Middle Woodland period. Lattanzi presents a view from the Mid-Atlantic Region, which even though outside of the Hopewellian "heartland" of central Ohio still provides a valuable perspective on native copper objects. Lattanzi provides a background of native copper sources and key sites throughout the Middle Atlantic region. He then reviews prior copper bead typologies broadly and describes how he devised a regionally specific typology for the Mid-Atlantic Region with the aim of standardizing analyses in the area. He provides a formal description of individual copper bead types and provides a case study of how these types can be statistically examined to determine whether their production is carried out in a purposeful and specific way. Lattanzi's results suggest that Early Woodland cultures of the Mid-Atlantic Region were distinct from those of other regions in that during this time there was intentional standardization of beads, produced by close kin-related, skilled craftspeople for individual burials. A

subsequent shift in mortuary practices towards larger multiple burials featuring highly variable bead types, produced by non-familial groups, occurred during the Middle Woodland period when there was greater participation in the broader Hopewell Interaction Sphere and changes in mortuary behaviors. This is an innovative study and demonstrates how type variability can be used to infer social change, and how family group interactions articulate with larger cultural influence over time.

In Chapter 5, Matt Sanger et al. provide an up-to-the-minute review of copper use in the Lower Southeastern United States, with a focus on the Middle to Late Holocene transition, a time when copper use was relatively rare in this region, but clearly held an important social aspect, particularly at large communal sites. Their review focuses on three of the best documented examples of centralized copper use at the terraformed gathering sites of Poverty Point, Claiborne, and McQueen Shell Ring. The authors provide thoughtful commentary on the relationships between these sites and the source locations of the copper artifacts based on recent sourcing studies. The results taken together suggest that early coastal sites were engaged in broader social networks with interior riverine sites.

Likewise, given that copper artifacts were brought into the region in their finished form as objects of personal adornment to be actively displayed, it is likely these metal objects had important social roles, particularly during large gatherings and the associated depositional events. The precise function of the display, potentially demarcating the wearer as “elite,” either permanently or temporarily, is discussed as well. Sanger et al. suggest that although power imbalances may have existed at large gatherings, this structural authority dissipated once the groups returned home. Copper was functioning primarily as a “prestige” item likely used for display and exchange at communal events. The depositional context of items from great distances suggests that at least some of the exchanged goods, including copper, had meaningful social, ceremonial, or political value. The authors conclude that the limited distribution of copper in the Lower Southeast supports the hypothesis that long-distance travel was the norm and that people traveled to sites like Poverty Point as a pilgrimage. Sanger et al. remind us of the symbolic qualities of copper evinced via historic, ethnographic, and modern accounts from Indigenous peoples who describe copper as a powerful medium, both for its material qualities and cosmological potency.

Ryan Peterson begins a series of chapters (6 to 9) centered around North America’s copper heartland, the region surrounding the western Great Lakes. Peterson has conducted fieldwork and research on Lake Superior’s North Shore and Isle Royale. He emphasizes the utility of conceptualizing hunter-gatherer copper use as an “industry” and employs a life-history approach to identify the technological knowledge needed for the florescence of native

copper tools. Via experimentation using traditional methods of stone hammers and a sequence of cold hammering and annealing, Peterson constructs a detailed flow model of the copper production sequence. He also provides a detailed narrative of the various stages of copper tool production from raw material sourcing, extraction methods, transportation, production methods, use, discard, and recovery.

Regarding the production of copper tools, Peterson's work is revelatory in that he provides a detailed description of the copper waste materials produced during various stages of copper working. The presence of copper waste at a site is a direct indicator of production. He creates a classification system in which copper waste is broken down into eleven categories. Significantly, these categories correlate to various stages of copper working and can assist researchers interested in classifying copper production sites as early, middle, or late-stage manufacturing. Likewise, Peterson's study shows finds that formal tool forms are more frequently abandoned away from copper deposits and that latter stages of production take place away from copper deposits such as those on Isle Royale.

In Chapter 7, Grace Conrad leads a novel study that applies predictions derived from evolutionary experiments to the morphometrics of contemporaneous copper and stone points to understand how their different manufacturing processes would have affected cultural transmission. The copper cultures of the Midwestern United States used stone and copper points simultaneously for millennia with one material never replacing the other. The "Old Copper Complex" provides an interesting case study from which she examines artifact variation relative to different manufacturing traditions. In this period, both metal and stone artifacts, made with different manufacturing traditions, were likely being made by the same people, in the same culture, at the same time, and in same location. In other words, several factors—culture, chronology, environment, and geography—are, with very broad brushstrokes, somewhat controlled. Of interest is that the production methods and mental processes involved in manipulating copper and stone are highly distinct and may contribute differentially to artifact variability. Knapping is a fully *reductive process* whereby material is irreversibly removed, and errors cannot be corrected by adding material back onto the core. In contrast, copper working is predominantly a *transformative process* whereby material volume is altered from one form into another, without the addition of material to the working piece, and as such is a more forgiving raw material for producing a particular tool type. Basing their methods on the work of Schillinger, Mesoudi, and Lycett (2014), Conrad and colleagues predict that if the inherently reductive character of stone point production is the *dominant* factor in dictating artifact variability in stone points, then the set of ninety-three OCC copper artifacts should exhibit less variation than their set of ninety-six OCC stone points.

Rather intriguingly, Conrad et al.'s results do not support the hypothesis that the stone points should be more variable than copper due to the inherently reductive process of stone tool manufacture. In fact, copper points are significantly variable, and, ultimately, overall variability in the sampled tools is patterned statistically in a manner opposite to the predictions. The authors provide an in-depth discussion and offer several potential explanations for why stone points are more standardized compared to the copper points, including consideration of the role of geographical distribution, life history, time energy constraints, tool function, and stabilizing selection. They also consider the complex interaction of these factors along with neutral variation, drift, and non-utilitarian biases such as prestige and conformity. Conrad et al. conclude that experimental models play just as important a role when archaeological data do not conform to predicted patterns of variation, just as much as when they do match those predictions. Due to their ability to generate testable predictions, combining experimentally derived models with modern cultural evolutionary theory (*sensu* Mesoudi 2011) provides a key tool to understanding archaeological variability at the macro-level.

In Chapter 8, Bebber and colleagues revisit questions regarding the relationship between social organization, the increase in copper grave goods, and the decline of copper tools during the Archaic to Woodland Transition (ca. 3000 RCYBP). The authors build on the work of prior scholars to challenge gendered concepts of power and how biases can influence our interpretations of social organization. Indeed, the predominant explanation for the decline of large utilitarian copper tools relies on the assumption that population growth stimulated the development of male-dominated social hierarchies in which copper became associated with prestige-signaled, social positions. This “social hypothesis” was initially formulated by Binford (1962), and later tested by Plegier (1998, 2000), who found, rather incongruously, that grave goods were rarely found with males, but instead increased with female and infant interments, and as such concluded this pattern represented newly developed bridewealth and/or child growth payment structures. In contrast, Herrera (2012) proposed an alternative explanation based on subsistence evidence and Ojibwe ethnohistoric accounts to conclude that, in contrast to emergent male dominated hierarchy, Archaic mortuary patterns reflect an egalitarian social system which valued women and children's contributions to subsistence.

To better understand changing social organization over time, Bebber et al. compiled mortuary data from the Reigh site (47WN1) and found similar percentages of grave goods to those found at Riverside cemetery (20ME1). Their results suggest that during the Late Archaic, women were valued for their participation in fishing, mast processing, and hunting activities. Given the value of women's contributions to subsistence in foraging groups, the presence of

grave goods with females and children—instead of representing “bridewealth” in an emerging male-dominated social hierarchy—likely represents a heterarchical egalitarian social system in which all individuals, regardless of age or gender, were valued members of society, and as such grave goods occurring with women and children should not be interpreted as anomalous.

In Chapter 9, Jonathan Paige leads the analysis of an “actualistic” experiment comparing the penetration capabilities of replica copper conical points and stone side-notched points. The authors begin by clarifying that many contextually dependent factors would have influenced when and why a person in the early Holocene would use a copper point versus a stone point, such as production skill and experience, raw material availability, social learning and cultural transmission factors, personal preference, and time and energy constraints. Along with these myriad factors, the authors explain how tool functional performance, here assessed via measures of point penetration depth into an animal carcass, would have been an important factor for hunting success. Paige et al. are refreshingly open about the limitations of their study and elucidate the complicating factors encountered by all experimental studies that use animal target simulants.

Using advanced statistical modeling, Paige teases apart the complex relationships between penetration depth, tip cross sectional area (TCSA), tip cross sectional perimeter (TCSP), projectile momentum, and atlatlist learning over time. Their results clearly show stone points penetrated significantly deeper than copper points overall, and they follow these findings with a detailed, carefully qualified discussion of the why these results likely occurred. The authors contextualize their results in light of what is currently known about Early Holocene human behavior and mobility in the Western Great Lakes and consider several possible explanations for why copper conical points were innovated. Overall, the study is a valuable contribution to the growing corpus of copper weapon projectile experiments. Paige et al.’s results demonstrate the power of advanced statistical methods and their ability to add clarity to complex data sets, particularly those that include several interacting variables.

The last two chapters provide insight into contact-era trade metal used by the Beothuk of Newfoundland. In Chapter 10, Christopher Wolff and colleagues provide a detailed overview of the complex relationship between British colonialism and Indigenous resistance. They explore the various reasons as to how and why European iron became an increasingly valuable raw material to Beothuk technological traditions as they were driven farther inland away from their coastal territories. The authors discuss the history of Beothuk-European interactions, the unique ways Beothuk repurposed and worked iron into their own unique style of tools, and how the introduction of trade metal eventually led to the abandonment of stone as raw material for tool production. The au-

thors propose several possible reasons for why this shift may have occurred, ultimately revealing the resourcefulness and resilience of the Beothuk peoples in the face of colonial adversity.

Following this, Amanda Samuels leads an experimental study designed to better understand how and why iron became the preferred tools material of the Beothuk. For this project stone and iron projectile were replicated in order to assess the comparative functional efficiency between these tool types. The authors found that the penetration of stone tips and iron tips is quite similar, however, iron tips penetrated animal hides better than the stone tips. The authors link their results to the major subsistence change that occurred as the Beothuk were forced inland and had to increase their reliance on caribou as their main food source. They also suggest other contributing factors to this raw material shift, such as the likelihood that the Beothuk found iron to be widely accessible and chose to use this material as lithic resources became less available. Samuels et al. conclude that these combined factors of raw material availability and improved functional performance likely acted as *coinciding optima*. Overall, this study is a welcome contribution and shows how experiments can provide insight into unresolved archaeological questions, such as, why did Beothuk increasingly choose to use iron-tipped arrows instead of stone points throughout the colonial period?

Conclusion

In summary, we believe that the discovery and development of metals as tool media is a topic of global interest. Although this phenomenon is generally associated with sedentary, agrarian-based societies, in North America there is regularly documented, albeit not widely known, use of metals by both highly mobile and semi-sedentary populations, beginning as early as nine thousand years ago, and continuing into modern times. In this volume we seek to broaden awareness of these metal-using populations by bringing together scholars from across the continent to share their research on this fascinating topic.

North American metallurgical traditions have conventionally been studied through a culturally historical lens, with little attention paid to the procurement and manufacturing practices of metal objects or their subsequent use, modification, deposition, and exchange. Moreover, the decision-making involved throughout these processes warrants systematic investigation. The diversity of research in this volume contributes to how we conceptualize hunter-gatherer innovation, technological proficiency, and complex decision-making in the past and challenges readers to reconsider long-held assumptions about how, when, and under what conditions, metal became a part of humanity's story.

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