

# **The Affect of Crafting**

## **Third Millennium BCE Copper Arrowheads from Ganeshwar, Rajasthan**

**Uzma Z. Rizvi**



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**Uzma Z. Rizvi**

**Archaeopress Archaeology**



**This volume is dedicated to the memory of Abba and Nana.**

**For all the time we did not spend together, I spend my time now,  
imagining time.**

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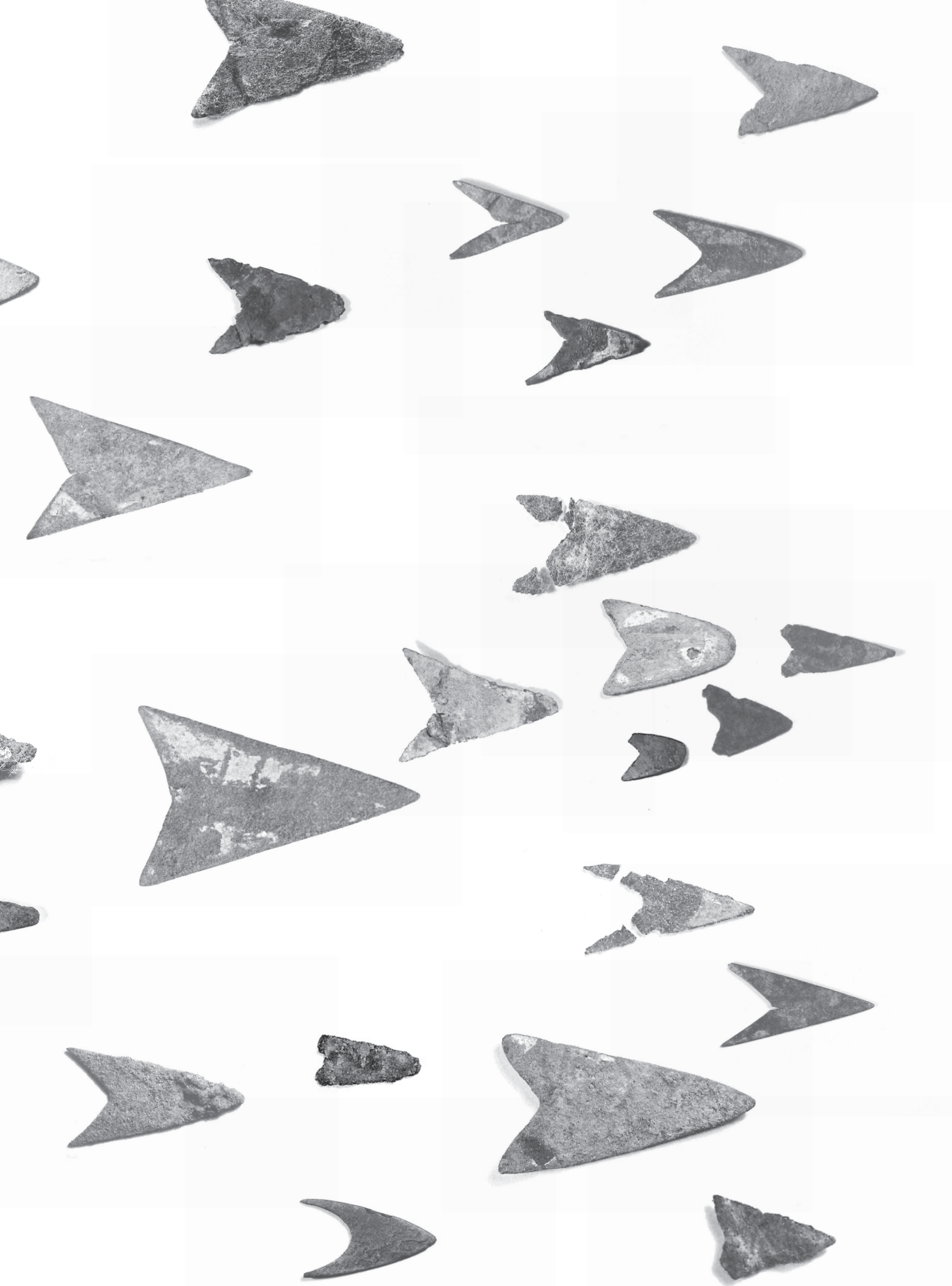
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## Preface

The material presented in this book has waited a long time to be published. In 2003 I presented the director of the State Department of Archaeology and Museums, Rajasthan, A. K. Jagdari, with three copies of a CD of images of the copper material from the Ganeshwar excavations (1978–79), along with a final report of work in Rajasthan. I was indebted to him and the department for providing me the opportunity to document the landscape and the copper material. As such, and in the spirit of decolonization, I felt I should provide the department the first chance to publish the images of copper material, and only if they were unable to do so within a certain span of time would I publish the images. **We agreed to a couple things that day: first, we negotiated a time frame. I agreed to wait 10 years before publishing the images. Second, we agreed that every image of the arrowheads would be represented if possible.** A decade later I visited the department's offices in order to see if a publication of this material was in process, and as none was, I am honoured to present this material for publication. With this publication, I have fulfilled, to the best of my ability, both of my promises to the State Department of Archaeology and Museums, Rajasthan.

In the years 2000 and 2003 when I was conducting my doctoral dissertation research, while I had very little guidance on how to decolonize archaeological practice, it was clear to me that it had to happen. In retrospect, in some instances I gave up too much power, authorship, and authority; and in other moments, not enough. But that was to be expected, because archaeology as a discipline had yet to really understand, engage with or work through decolonization. There was, by then, some sense of community archaeology, and with the help of that scholarship, and with a look to history, in particular to the subaltern studies group, I figured out a methodology, an ethic, a community based research practice, and what a postcolonial archaeology might look like. I have, since conducting this research, published on

all of those aspects, but one aspect that I continued to wait upon was a more detailed discussion of the copper artefacts from the Department of Archaeology and Museums, Jaipur collection. In many ways, a decade passing has been useful because I approach this material from a mature stance, and I have a different relationship with my discipline, with the materials and with ancient South Asia.

This decade between research and publishing has taught me the value of slow analysis and thoughtful research. This is a very simple project, with both the crux and crisis located in the same space. In making things, subjectivities are also constructed, places are also crafted, aesthetic empathy creates resonances and senses of belonging, and everything involved is transformed for having experienced each other. In much the same way this project has transformed me and my research interests. And for that, I am grateful.

Uzma Z. Rizvi  
Brooklyn, NY  
January 2015



# Part One

# The Affect of Crafting

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**The Affect of Crafting and Ancient Sociality**

# Chapter One

## Introduction to the Affect of Crafting

This book provides an interdisciplinary lens to the copper material collected and excavated from Ganeshwar, while reconceptualising the Ganeshwar-Jodhpura Cultural Complex (GJCC) in third millennium BCE India. The GJCC are communities of copper producers. Located in Northeastern Rajasthan, these settlements are bound together by a shared cultural vocabulary that encompasses similarities in material culture, production of copper tools, and geographic proximity to copper mines (**Figure 1.1: map of region**). For over a decade, the focus of my research has been on establishing links between technological complexity and socio-political complexity (2007, 2010, 2013a). I have demonstrated how the GJCC is an indigenous development that sustains a larger regional economic need for copper products in the Ancient South Asian landscape (2007). The underpinnings for regional economic organization are resource specialized complexes located in highly circumscribed regions where copper is a natural resource (Scarborough, Valdez, and Dunning 2003). These copper producing communities may have come together through variables, such as population increase—technological knowhow, or a simple adaptation to a landscape, but central to understanding them is their relationship to copper.

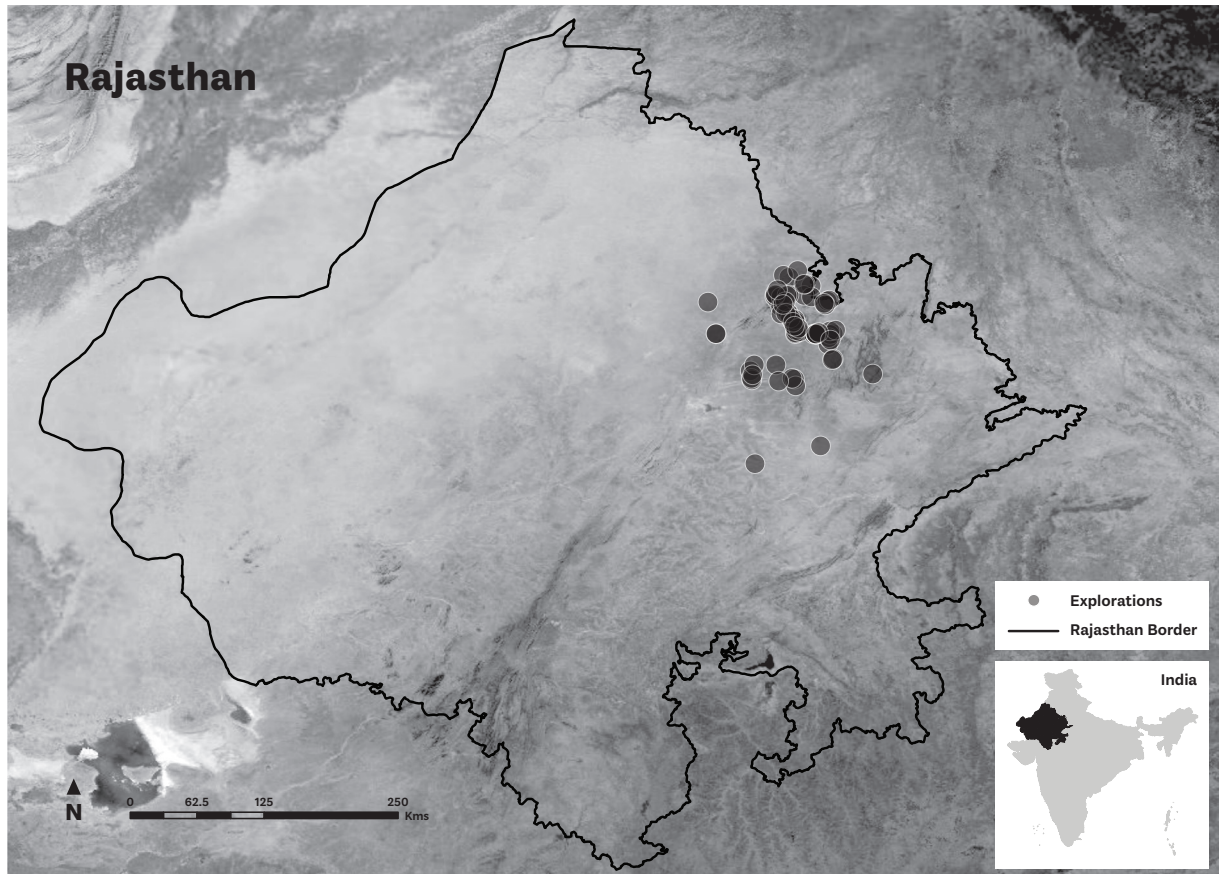
This book is about the relationships between copper and humans that produce practices, forms, styles, and traces on a landscape. It is through those relationships that material, humans, and cultures are transformed and through which we might understand ancient sociality. ‘Ancient sociality’ describes the many simultaneous social relationships that exist among all things (human, animal, mineral, and so

forth). This book interrogates how the (intangible) social is produced through material relations. It illustrates how affective responses of belonging emerge in those material moments linking an evocative intimacy to specific things and landscapes.

This volume presents an interrogation of materiality and crafting, a consideration of the situatedness of the technological practice of crafting itself, and the forms of relationships that exist between all things transformed in the act of crafting: bodies, minerals and landscapes. Linked to those transformations, this volume presents an argument for cultural resonance as a manner through which to understand the resilience and repetition of certain styles and forms of copper arrowheads across the region during the third millennium BCE. Morphological consistency is theorized as producing affective responses that engender belonging: one belongs through things.

Prior to this study, the GJCC had predominantly been considered in relation to the Indus Civilization as a resource area, a marginal and frontier region (Agrawala 1978a and b, 1979a and b; Agrawala and Kumar 1982; Hooja 1994; Sinha 1997). This argument reflects early interpretations of the region as a hunting-gathering society based on the presence of microliths and copper arrowheads (Agrawala and Kumar 1982, 127). These interpretations are also based on comparative evidence for sedentary agrarian practices, as seen at sites like Kalibangan, Ahar, and Gilund (Agrawala and Kumar 1982, 127; Hooja 1994, 128). I challenged this interpretation in my PhD dissertation (2007) and will present a brief discussion of paleoclimate, ancient irrigation studies and material culture that index agricultural practices





**Figure 1.1**  
Satellite map of Rajasthan with explored GJCC sites marked

in the GJCC in chapter two. The excavations at Ganeshwar and Jodhpura do not suggest a lack of sedentary agricultural practice; rather, the evidence suggests different agro-cultural practices in antiquity. The lack of architecture for the storage of surplus is more likely an issue related to the scale of excavations at these various sites. As early as 2900 BCE, the GJCC emerges as a community with subsistence strategies, including fishing and hunting, as evidenced by fishhooks and faunal remains, as well as some early farming suggested by paleo-climate reconstructions, burnt grains/seeds and grinding stones, found in early contexts (Rizvi 2007, 186).

A core argument that has run through all my work on the GJCC is that these communities were not politically or economically weak as they maintained their autonomy from adjoining larger political forces (such as the cultures of the Ahar Banas to the south/southwest and the Harappan to the north/northwest). The GJCC are complex communities, and this book interrogates how these communities maintained themselves as distinct cultural units (Porter 2013). Utilizing primary research conducted in the region and the documentation of

the copper corpus from Ganeshwar, I argue that the affect of crafting can be understood through the relationships between bodies, minerals and landscapes as they co-constructed senses of belonging through form and practice during the third millennium BCE.

This book is focused on two acts of crafting in the GJCC: one of resonance and the other of place, and both through copper. The shift from thinking about crafting as primarily linked to economy and the production of material objects to a consideration of the affect of crafting allows this analysis to run parallel to discussions of craft specialization. Within the archaeology of South Asia, craft specialization highlights economics, technology, and material culture studies, dominating the archaeological literature (for example, Agrawal 2000; Agrawal and Kharakwal 2003; Biswas 1996; Kenoyer, Vidale, and Bhan 1991; H. L. Miller 2007; Ratnagar 2007; Sher and Vidale 1985; Sinopoli 2003; Wright 1991). I am not suggesting that craft specialization and material culture studies are insignificant to this analysis. Rather, I believe that the analysis presented in this volume should be considered in addition to the more conventional forms of archaeological

analysis; that is to say, there may be complimentary ways to look at the same material. Resonance and placemaking as theoretical tools developed in this book are situated between and intertwined with the literature of craft specialization (economics/technology/complexity) and material culture studies/materiality/new materialisms. The development of crafting as resonance and placemaking is influenced by all of these discourses. For example, it is through the exploration of economic specialization and technology that a focus on placemaking was possible and through thinking about objects as things in relation to theories of new materialism that a consideration for resonance as empathy and belonging emerged. A theory related to affect of crafting allows for multiple considerations and reconstructions of past socialities.

### **Crafting Theory: Thinking About the Affect of Crafting**

At the core of the affect of crafting is that what is crafted is not only a material object, but rather that a transformation is crafted in all manners (tangible/intangible), experienced by everything involved. The archaeological literature of South Asia tends to focus on the finished craft object, the systems by which that object becomes a commodity, and the intersections of craft specialization studies with a material science approach to technology. The focus on the affect of crafting is a conscious move away from an analysis of such systems and materialities, providing, instead, an alternative appreciation of such processes, decision making, and transformations. It should be noted that there is methodological and philosophical promiscuity necessarily embedded within this framework, primarily as a means to disturb how these systems of knowledge have been created allowing for a different perspective on the same material. However, developing such a lens continues to be predicated upon a specific history of the artefact in archaeological theory within a regional (South Asian) archaeological literature. The following sections provide a framework which has informed the manners in which this particular study has developed.

#### *The Affective Artefact: Objects of Colonial Desire and Objects of Science*

Artefacts have a long history of having been constructed through discourses of desire, fetish, and collection. The excitement or thrill of holding, touching and possessing a relic or an artefact creates as its subtext a desire to expand systems of control to encompass

past times. The creation of a colonial desire for the artefact, links between coloniality and collections, as well as the manner in which the postcolonial nation has dealt with the artefact have been well documented in different contexts (de Jong 2008; Gosden 2004; Gullapalli 2008; Harrison 2006; Lahiri 2005). The artefact emerges as the desired object not only in terms of collection but following, and arguably prompted by, that as the primary object of archaeological inquiry. The development of archaeology as a field or method of study and its link to modernity is an important framework within which to understand this project. Moreover, archaeology has a deep relationship with colonialism, which entangles the discipline with capitalism, nation building, and the development of a particular form of science that provides a basis for Western liberalism (Rizvi 2016; J. Thomas 2004). The transformation of these colonial spaces in the post-colonial time period creates the context within which artefact study emerges in distinct manners within the developing fields of anthropological archaeology, art history and ancient history. This moment is marked by the establishment of postcolonial nations with heterogeneous populations, and the development of these fields in these new contexts (Gullapalli 2008; Paddayya 2002; Trautmann and Sinopoli 2002). Global politics became explicitly technopolitical, and the importance of science as defending rational, progress oriented and secular ideals was reinstated with additional emphasis, mobilizing war time efforts for peace time research. The linking of national developmental agendas with science can be seen, for example, in the United States, through the establishment of the National Science Foundation (NSF). The NSF emerged as a post war effort, first articulated by President Franklin D. Roosevelt in 1944. Legislation was put forward to Congress in 1945, and by 1950 the NSF was established.<sup>1</sup>

A key shift within anthropological archaeology at this time was the recognition that civilisational sweeps as grand narratives based on race/language/culture were no longer sufficient, and in fact, had problematic contemporary outcomes (Erdosy 1995; Johansen 2003; Rizvi 2013a; Shaffer 1984). As archaeology refocused its lens on the artefact with science and technology in mind, the distance that took place with colonial *othering* inherent in the ethnographic frameworks was replaced with that of scientific objectivity. This led to a reifying of a static object as artefact to be studied, and within South Asia, has defined how archaeology is valued and practiced by postcolonial nation-states

1

[www.nsf.gov/news/special\\_reports/history-nsf/timeline/index.jsp](http://www.nsf.gov/news/special_reports/history-nsf/timeline/index.jsp) (last accessed Sept. 28, 2015)

(Chadha 2010). The reliance on the objective distancing of scientific analysis and method led to the artefact being coded first and foremost as empirical evidence of ancient cultures, effectively removing any connection to the present.

Steeped in this core belief in science and its unquestioned benefit for archaeology, Lewis Binford placed Archaeology within Anthropology, relying upon the artefact to illustrate the significance of how one might understand the larger system of culture: 'Artefacts having their primary functional context in different operational sub-systems of the total cultural system will exhibit differences and similarities differentially, in terms of the structure of the cultural system of which they were a part' (1962, 18). Such a perspective promoted the idea that there was *material* culture and that there was an intangible aspect of the artefact that connected to a larger cultural system, although the latter was not expressed as such. In the archaeology of South Asia, much of the literature was based on systems theories developed primarily to understand social evolutionary models of civilisation (Fairservis 1971; Malik 1968). In a shift away from considerations based on such models of power, Binford's system based approach to material culture applied a scientific method to similar questions and permitted archaeologists to focus in on certain systems of production—of material, of meaning, of ethnicities, and most significantly, for the Indus world, of the link between artefacts and complexity (Dales 1986; Dales and Kenoyer 1986; Fuller and Boivin 2002; Shaffer 1984; see Paddayya 2010 for a review of Binford's impact on Indian archaeology).

The idea that artefacts were a part of a larger system, and that by studying them one could speak to the culture, was also addressed specifically in relationship to social contexts of technology (Dobres 1995; Sherratt and Sheratt 2001). Perhaps most cited in relation to the social context of technology is André Leroi-Gourhan's work on *chaîne-opératoire* or operational sequence (1964), in which the highly routinised practice, the step-by-step description of movement and gesture, is placed within a social space, and the life cycle of the crafted object is taken into account. This is distinct from later work on the cultural biography of things and their relationships to commoditisation by Igor Kopytoff (1986), or from Chris Gosden and Yvette Marshall's work on the cultural biography of objects that locates and interprets the accumulation of meanings performed between people and objects (1999). Leroi-Gourhan's work focuses on the systems of technology as

systems of culture. For him, such a focus is related to a philosophy of technology as it relates to the cognitive cultural worlds inhabited by individuals. For archaeologists, Leroi-Gourhan's work is significant as a systemic approach to past culture, a system in which certain types of technologies existed based on the finished objects. Moreover, his theoretical framework provides a socio-cultural element to the study of technological processes of the past through a link with cognitive psychology (see Boivin 2008; Malafouris 2013; Renfrew 1994). Leroi-Gourhan's philosophy of technology is a philosophical inquiry of the social symbolic; however, the vast majority of citations of *chaîne-opératoire* within archaeological literature of South Asia tend to be within a materialist perspective of technology. The material science approach allows archaeological discussion to embed technological happenings within a social fabric, with social implications (Gullapalli 2013; Vidale and Miller 2000). However, early materialist approaches in Indus archaeology challenged the utility of focusing on the operational sequence as it limited 'the understanding of wider implications of technology', and these archaeologists tend to look to paleotechnology to elaborate on the ancient world, establishing their interpretation in the material sciences (Vidale 1998, 179).

### *Technology and Crafting*

In the past two decades, paleotechnology (i.e., the study of ancient technology) has dominated the South Asian archaeological literature and imagination. This approach utilizes archaeology, stratigraphy, archaeometry, and ethnoarchaeology, arguing that technical systems are most consistently and reliably documented in the archaeological record (Bhan, Vidale, and Kenoyer 1994; Kenoyer, Vidale, and Bhan 1991; Vidale 1995). The significance of paleotechnology in Indus studies also provided the platform for work on the provenance and sourcing of minerals and stones, allowing for tangible, scientific data related to the movement of resources (Law 2005; Law and Baqri 2003; Law and Burton 2006). The need for archaeological information to be placed in a socially viable interpretation provided the impetus to merge considerations of paleotechnology with technological systems (Lemonnier 1986; H. L. Miller 2007; Vidale and Miller 2000). The link between Indus technological systems as a value and social hierarchies became a very important conceptual bridge allowing for a merging of significant bodies of literature on technology and politics (Miller 2007; Rizvi 2011). Current studies related to technology and crafting within the

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South Asian context now assume the social context of technology, the use of technological systems, and their interrelationship, whether it is to interrogate specific technological applications like lamination of iron in ancient India (Gullapalli 2013) or to investigate the relationship of lithics to mobility and subsistence on the Mewar plains (Raczek 2011).

The implicit interconnectivity of the discourses of technology to economics is what allows for resource extraction, provenance, and thus, the mineral itself to inform consequences of social hierarchy (Rizvi 2007; Sinclair 1995). In particular, this acuity of the mineral or raw material also informs the technological system as different levels of resistance of the material may require distinct processes. Within a technological system, whether specialized or not, while the operational sequence may be one aspect within many steps of technological production, it is a crucial one as it focuses on the incorporation of body techniques (Mauss 1979), making the act of production a social phenomenon (Dobres 2000; Gullapalli 2013; H. L. Miller 2007; Raczek 2013; Rizvi 2013b; Vidale and Miller 2000). Often implicit, but profoundly significant to this study, is the idea that through an analysis of technical systems both body and raw material become mediums of negotiation among technology, society, materiality, and economy. The relationship between technology and crafting thus allows us to see how bodies and raw materials are simultaneously mired in various transformations, resistances and reformations within a shifting social system that accommodates those changes while informing the negotiations.

### *Style and Form: Thinking about the Function of Aesthetics in Archaeology*

The focus on systems within scientific approaches in archaeology begs the question of functionality, and within technology oriented archaeological work, a refocusing on aesthetics of style and form has recently emerged. Early archaeological work on style and form had established that there was functionality to style, i.e., the communication of cultural information (Wobst 1977), which led to social knowledge informing complexity (Conkey 1978). Despite cautions reminding archaeologists that though social information may be contained in material culture, that the relationship between the two cannot be thought of as one-to-one and may have more to do with social conditioning and context (Hodder 1979), there was still a clear desire on the part of archaeology to better understand the linkage between complexity and the artefact.

Ethnoarchaeological studies posited individual producers as conscious decision makers of style in the production of particular objects, linking both producers and users of each object to specific language groups or groups that hold similar values (Wiessner 1983). For other archaeologists, decisions of individuals were shaped by the traditions within which they were acculturated and, thus, had more to do with the social context within which the producers produced (Sackett 1985). Located somewhere between those two possibilities, ancient Indus social units began to be thought of as possible ethnic groups whose 'salient cultural traits are material cultural symbols, such as distinctive ceramic styles, used to indicate membership in cooperative social units, and organized to facilitate access to sources of production and reproduction' (Shaffer and Lichtenstein 1989, 119; see Hodder 1979). There were few after Jim Shaffer and Diane Lichtenstein willing to discuss Indus ethnicity because of its contemporary political implications in India, but certainly the idea of community memberships as cooperative social units and their relationship with economies of production and reproduction have informed the framework for many a South Asianist and have had a lasting impact on the ways that belonging to a social group is understood. In this equation, the significance of material cultural symbols as aesthetic choices assumes a tacit collective agreement contextualized within questions of religious ideology (Possehl 2002; Wright 2010). The exceptions to this trend include studies of seals that depict Indus unicorn ideology in which Mark Kenoyer posits a relationship between aesthetic forms of the unicorn and stages of urbanism (2013), and an argument put forward by Marta Ameri for Harappan regional diversity based on aesthetic choices, i.e., the style and iconography of seals (2013).

Not traditionally coded in discussions of style and form or aesthetics in archaeology is the literature related to figurines. Discussions of style and form have predominantly been focused upon non-human forms, assuming that human representation could be taken as a potential one-to-one ideal. It was the feminist and queer approach to gender, sex and sexuality that allowed for representation to be problematised. Within the Indus context, Sharri Clark's work has articulated the significance of these figurines as not explicitly rendering sex/gender/sexuality, but rather that they 'implicitly embody conceptions of sex, gender, and sexuality in Indus society' (2003, 308). Clark's study utilizes 'shape, the presence of sex attributes, dress, ornamentation,

and certain postures' to talk through possible gender roles and the fluidity of identity (2003, 323). There is an aesthetic dimension to implicit embodiment (Geller 2009; Joyce 2005; Voss 2008). Following the early work on gender, inspired by the continued feminist critique, archaeology has also understood the body as central in the discussions of crafting (Dobres 1995; Hendon 1996; Joyce 1998; Joyce and Hendon 2000). The tension between an embodied artefact and the process of crafting is pivotal to the analysis of the affect of crafting. Clark deals with this tension when referring to how the 'Harappans physically engaged with and inserted themselves into the fabric of their world through terracotta figurines' (2009, 235). Embodiment and weaving one into terracotta have been primarily discussed in relation to human or anthropomorphic figures. The affect of crafting imbues that possibility in all craft.

### *Craft Specialization and Production*

As bodies, materials, and technologies are enmeshed in a social fabric of reconstructed antiquity, archaeological analysis of craft production hones in on intentionality. Crafting presupposes a level of expertise and intention on the part of makers and of producers (Costin 1991; Sinopoli 2003). These two factors underlie the archaeological desire to understand crafting as a specialized activity, particularly focused on questions related to trade, exchange, and the structures of governance in place to support those relations. Craft specialization became a way by which archaeologists entered into discussion about the organization of production, which included the distribution of raw materials, the nature of technology and the divisions of labour. Cathy Costin argued for the distinction of specialization to be understood as 'a differentiated, regularized, permanent, and perhaps institutionalized production system in which producers depend on extra-household exchange relationships at least in part for their livelihood, and consumers depend on them for acquisition of goods they do not produce themselves' (1991, 4). Importantly, she drew our attention to issues the scale and contexts of production.

As mentioned previously, these questions were and continue to be vital in the archaeology of South Asia (Bhan, Vidale, and Kenoyer 1994; Kenoyer, Vidale, and Bhan 1991; Law et al. 2012; Rizvi 2007). In a South Indian context, Shinu Abraham utilizes the study of craft production 'to materially reconstitute the still-poorly understood social, political and economic systems of early Tamil South' (2013, 240).

Within Indus scholarship this manifests as a focus on complexity and its impact on society, politics and the economy through an investigation of intensification, diversification and specialisation of the region's agro-pastoral and craft-producing economy (Wright 2010, 145). It is through such foundational studies that broader questions related to craft specialization and the relationships between divisions of labour, questions of identity, and social value can be investigated (Clark 2007; Clark and Parry 1990; Costin and Wright 1998; Shaffer and Lichtenstein 1989). The concept of identity allowed archaeologists interested in gender and division of labour to consider the relationship between the state and the individual (Costin 1996).

Carla Sinopoli, in discussing the crafting of empire in Vijayanagra, highlights the significance of political economy when thinking about specialized craft labour, specifically demonstrating how they impact one another. Sinopoli articulates how different scales of craft may have differing levels of socio-complexity and political economy associated with them (2003). Along similar lines, Teresa Raczek draws attention to everyday, non-specialist craft production in relation to Mewar lithic manufacture, focusing on objects 'produced primarily for use by the maker and his or her household instead of for circulation' (2013, 342). Circulation in this capacity does not mean the movement of things, but rather their explicit movement within economic systems, and presumes a direct relationship between the complexities of economic and political systems. In so far as there is specialisation of craft, there is intentionality to the use and labour of the body, and I would argue, the mineral/raw material and the landscape within which the crafting occurs. Thus, labouring bodies and minerals are circulating in the same social, political and economic systems as finished objects/commodities, which inform the identity of those bodies and their relationship to materials.

### *Distinguishing Crafts: Rituals, Aesthetics, and Metallurgy*

It is assumed that although the economic processes and systems within which craft specialization occurs may have similar impacts on complexity, each form of crafting is itself distinct and involves various actants in multiple capacities. Compared to most other crafts, the crafting of metals has a unique position within archaeological worlds. Christian Jürgensen Thomsen introduced the three age system (stone, bronze, and iron) into archaeological discourse, intertwining typologies with chronologies and

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materiality with progress (1836). However, the high status given to metals within techno-archaeological imaginaries can be specifically traced back to V. Gordon Childe's Huxley Memorial Lecture for the Royal Anthropological Institute of Great Britain and Ireland in 1944, entitled *Archaeological Ages as Technological Stages*. In this lecture, Childe posited stages of human technological evolution as cultural evolution linked primarily to metallurgical acuity, illustrating the sociological implications of each process of crafting tools. For Childe, the technological tradition as seen in material culture could be understood as social tradition (for more on Childe and cultural history, see J. Thomas 2004, 112-113). Implicit in the materially linked categorization of the Ages was an evolutionary, progress oriented, and scientific aspiration that categorized prehistory worldwide. The impact of these archaeological ages continues to be felt even in contemporary populations in the postcolony and with *othered* populations. I have argued elsewhere that there is a clear connection between the continued uncritical use of such archaeological labels to describe the behaviour of populations of people, exemplified by the common phrase 'they still live in the Stone Age,' and contemporary indigenous/Adivasi politics in India (Rizvi 2013a).

Ironically, although Childe's framework found its basis in tradition, the cultural historical framework did not encourage any non-technical aspect to crafting metal, such as cultural rituals associated with crafts—and archaeological interpretations about ancient smithing and smelting became resolutely about scientific metallurgy. Science, technology, and the industrial nature of the person, the ore, and the socio-political landscape became inextricably linked to each other, impacting archaeological interpretations and assessments of civilisational strength. The erasure of the non-technical elements in the deep past, however, could not erase the history of metallurgy in, for example, Britain prior to the industrial revolution, which had magic and ritual as a central aspect of crafting (Budd and Taylor 1995).

By the time ethnoarchaeological research became mainstream within the archaeological imaginary (the 1990s), many examples, particularly from the global south, provided counter-balance, and technological research could include traditional and ritualized aspects. For example, in some cases in Sub-Saharan Africa, the transformation of ore into metal and subsequently into an object, indexing a control of fire, is coded as a dangerous act, with possible interference of ancestral spirits and acts of sorcery of fellow mortals

(Childs and Killick 1993; Cooper 2006). Smelting operations were carried out far from villages, required special protective charms and medicines, and were restricted to specific individuals, usually those with particular kin ties and with specialised training. While mining and smithing were more public enterprises, they also often required special precautions and rituals (Childs and Killick 1993, 325).

In terms of craft specialization, intentionality, and questions of identity related to the labouring bodies and minerals, Reid and MacLean's (1995) ethnoarchaeological study of smelting in Igurwa, an iron smelting centre in Karagwe, a nineteenth century kingdom in contemporary northwestern Tanzania, outlines precautions taken during crafting that have to do with gender and exclusion. In this context, the smelter and the smith are always male, the act of smelting is conceptualized as a procreative act, and the smelters, the furnace, and bellows take on the roles of sexual partners. Women, in particular fertile women, threaten the act of smelting, and they are excluded, except postmenopausal women. Children, male and female, are not excluded. The exclusion of women manifests spatially through the isolation of smelting sites away from settlements (1995, 149; see also Schmidt 1997).

The materiality of the raw material is also significant as it carries socio-symbolic referents (Sinclair 1995). Dorothy Hosler's work in western Mexico provides an example in which the raw material is considered in relation to the sound and aesthetics of the metal (1995). Analyzing the crafting of bells, Hosler uses ethno-historic and linguistic evidence to argue that the sound of the bells was linked to protection during conflict and war. Furthermore, the particular sound also played a significant role in structuring rituals around fertility and regeneration. Specific metallic colours, in particular gold and silver, were associated with solar and lunar deities, and the shimmering quality of these metals represented a form of sacred paradise. In this particular case, both aural and optical qualities of the metals engendered a sacred experience.

Shereen Ratnagar's work on early Indian technology draws our attention to the specificity of the raw material and how the distinction of each object is contingent upon the types of material utilized (2007). Ratnagar's focus maintains the technological apparatus as co-determining the outcome and an assumption of a utilitarian/functional aspect to the understanding of the raw material. One of the key studies on the socio-symbolic aspects of copper and

Ancient India is Nayanjot Lahiri's ethnographic work on metals and metal related artefacts as cultural signifiers (1995). She posits the purity of the copper alloy as representing conscious decision-making, as cultural signifiers evoking symbolic capital and individual agency to choose, produce, and consume pure copper alloy vessels. Lahiri outlines three positions upon which she constructs an argument for a particularly *Indian* cultural situation. First, the dominant tradition of working in copper of high purity recorded in the early Indian archaeological record fits in with what she indicates is the ritual importance of pure copper in ancient Indian texts. The continuity of this tradition and the relative position of superiority of craft-persons working in pure copper over those working with various alloys in the caste hierarchy are highlighted in her study. Second, Lahiri draws our attention to traditions of recycling objects and scraps of old metal, arguing that it must be considered a factor in the variation of elemental compositions of Indian metal artefacts. Finally, she draws attention to how metal or metal related objects are focused around specific historical events and folk beliefs; the stories/myths and artefacts are linked in ways that suggest that the artefacts function as signifiers of social and cultural beliefs. Her study allows for an understanding of the production of symbolic value in which the materiality of the artefacts contains meanings and manifestations of social relationships and social control (1995).

### *Contextualising Crafting: Materiality and New Materialisms*

Deeply influencing this project is the concept of objectification or the view that people make themselves in the process of making things. Daniel Miller, borrowing this idea from Hegel, argues that objectification is the foundation for a dialectical theory of culture, and so the dualities that exist are the ways in which culture is constituted and vice versa (1987). This core concept repeats in many other forms, particularly within gender/sexuality studies that analyse ancient figurines as representations of the body (S. Clark 2009; Meskell 1998; Nakamura 2005). Particularly in the study of figurines, there is a tension between the politics of representation and intentionality. Framing the question of intentionality within an analysis of materiality allows both cognitive and psychological studies to be utilized as they inform behaviour. Lynn Meskell posits materiality to be how we meaningfully engage with the world, intermingling, negotiating, constituting, and shaping culture in both embodied and disembodied ways

(2004). What is unique about the idea of representation of the body as figurine is precisely the issue of intentionality of crafting a form of representation. In looking at Harappan figurines, Clark argues that in hand modelling the representations of human bodies from two clay pieces, the makers were actually more focused on the process and ideology rather than the more pragmatic aspects of the craft, thus suggesting an intentionality to the form (2009). Complicating that *a priori* assumption related to intentionality, Carrie Nakamura and Lynn Meskell's work on figurines from Çatalhöyük points out that in the act of making, either in terms of deification or self-making, there are potentially other concerns that might inform the manner in which the representation is formed (2009).

Theorising figurines in relation to intentionality forces one to contend with meaning embedded in materiality. Artefact design is then a distinct behavioural approach to material culture, which not only provides a biography of the artefact but contextualizes it within interactions and technical choices made, and what the behavioural significance of such choices might be (Schiffer and Skibo 1987; Skibo and Schiffer 2008). Related to fields of behavioural science, psychological studies related to skills acquisition, particularly through apprenticeships, have been considered in relation to Harappan carnelian beads and knapping practices (Roux, Brill, Dietrich 1995). In that particular study, ancient skill sets were reconstructed based on contemporary bead knapping in Khambhat, India. These psychological studies looked at value constructed and relationship to socio-economic status through an examination of how the actors handled the complexity of the tasks and their duration, and how this impacted apprenticeship (Roux, Brill, Dietrich 1995).

However, some caution needs to be taken when considering these questions of intentionality in relation to behaviour and its link to psychology or cognition. As Lambros Malafouris has pointed out, the question of intentionality, causality and action stems from a Cartesian mode of thought (2013, 234). 'Intentional states', he argues, 'are *of or about* things, whereas things in themselves may not be of or about anything' (2013, 235, *italics in original*). By placing the conditions of intentionality upon the thing, the thing becomes a passive recipient of human intention, thus losing its agency (Rizvi 2015). Also utilizing knapping as an example, Malafouris argues that intentionality 'is essentially constituted through an act of collaboration between human and material

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agency', which supports ontology that thinks through and with matter (2013, 236). Malafouris's claim impacts discourses of craft specialization with regards to the production of tools, crafts, spaces, and bodies. Although he is prescient in his discussion of intentionality, it is somewhat difficult to utilize his theoretical tools critically within current archaeological frameworks. Be that as it may, the caution related to intentionality is very important, and lingers around the affect of crafting.

Within this mesh of thinking through and with matter, the human body maintains a distinct relationship with what it produces. An argument posited by philosopher Per Otnes focuses on the bodily components of production, in which, for example, one's hands may be thought of as tools but are not in the same categories as other tools since they themselves (hands) are not produced or consumed (1997, 64–65). This nuanced distinction allows us to consider a skilled hand as a relation, rather than as a product unto itself. This shift places technology and tools in a separate category from the body and argues for distinct manners of contending with each.

It is significant to conceptualize the body as whole, moving away from the mind/body split, in particular when considering representations of internalized schema. A representation cannot only be thought of in terms of what the craftsperson wants it to say, but rather, must be conceptualized as a dialog or a relation between bodies and materials. During the act of crafting, the craftsperson may be thinking through and with matter, and it is up to archaeological interpretation to attempt the same in its reconstruction of the past.

In considering the relationship of power to materiality, Elizabeth DeMarrais (1997) argues that materialization is related to the production, control, and manipulation of highly visible, elaborate symbols and icons, events, and monumental architecture within the context of elite ideology and power. For DeMarrais, the materialization of ideology is the materialisation of culture (see also Sinopoli 2003). Materialisation is conceived of as a transformation of intangible values into material being (DeMarrais, Castillo, and Earle 1996). Leroi-Gourhan's chapter on *Technics and Language* (1993) explores this transformation as a relationship between emotion and graphic expression. His work compliments the focus on intentionality of process and its relationship to cognitive, psychological, and behavioural archaeological approaches, and links well with Alfred Gell's work on art and the agentive properties of things (1992, 1998).

Within a framework of Peircean semiotics, Gell's theory of art easily influenced archaeological research (see Groves-Brown 1995). Gell encouraged archaeology to consider art as a technology in its own right that creates an aura of enchantment, magic, and fetish around the thing itself. Art's 'technical virtuosity' is embedded in its ability to elicit affective responses. Archaeological research has subsequently utilized Gell's theories to consider various forms of archaeological artefacts and features thought to embed within themselves capacities to evoke emotions, from *pilli miti* as building material in households in Balathal, India (Boivin 2008) to the materiality of Indian Buddhism (Fogelin 2015).

The influence of Charles Sander Peirce within archaeology is well demonstrated by Robert Preucel in his book on archaeological semiotics (2006). Three points made by Preucel are significant in framing my approach to this study: first, that archaeological interpretations themselves are a social semiotic act; second, that material culture can be understood not as a passive reflection of human behaviour but as an active social practice constitutive of social order; and finally, that materiality or material agency can be defined as the social constitution of self and society by means of the object world. Preucel argues that by looking at materiality, our focus shifts from material culture to material engagements with the world, and a Peircean framework provides a manner of sense making that is cognizant of these concerns. Most relevant for the approach adopted in this study is the manner by which Peircean semiotics provides a deeply contextual, situated, experiential and sensorial approach to the past (for other sensorial approaches to the past see Hamilakis 2015; Ryzewski 2012; Witmore 2005).

### *On Crafting Resonance*

The act of crafting produces an affective and embodied response. This volume focuses on one type of affective response, that of resonance. Resonance is theorized as an intangible affect that the material thing has beyond its formal physical boundaries within larger planes of perception, creating dynamic relationships among humans/nonhumans and illustrating cultural decisions of material as vibrant matter. This definition of resonance is indebted to concepts of power and vibrant matter discussed in Jane Bennett's work, specifically her use of Spinoza's ascription of vitality to bodies as thing-power, even though I do not use that phrase explicitly (2010, 2–3).



If material has vibrancy and frequency it has the capacity to evoke an emotional and affective response to similar material, style and/or form. Such response may be coded as a sensory aesthetic empathy that relates to constituting subjective belonging in the ancient world.

Such a framing creates a space within which to take into account our various entanglements, whether related to shifts in value from crafted artifact to meaningful signifying sets of relations (N. Thomas 1991) or the many ways in which things, humans and actions are dependent/co-dependent on each other to create meaning (Hodder 2011). Recognizing the scales of entanglements with ancient *things* provides insight into the development of ancient subjectivities. This aspect will be further developed in chapter four.

### *On Crafting Materials and Places*

Ruth Tringham has argued (1991, 1994) that archaeological places should be understood as deliberate creations of past actors that, as places, are in a continuous process of becoming. The simultaneity of a crafting of both material and place is unique in that it links the act of placemaking to specific technological motions and movements, each repetitive practice in the space helping to produce the place. If the location of a site is determined with special regard to function within a production system (however loosely defined), the craft practiced there becomes a significant framework/subtext to most, if not all, aspects of the individuals who live, operate in, and move through these spaces, and the place itself can be defined by its function (Binford 1982). The materiality of the craft and the processes of production are intricately linked to the ways in which the craftspeople and associated populations who inhabit the site begin to identify themselves (Sinopoli 2003). In this manner, producing place is directly linked to forms of social identity (Kealhofer 1999). The place becomes personal as the body is intimately involved in social practices undertaken in that area, even if they are not technologically or functionally relevant. Often placemaking in archaeological scholarship is linked to more sensual and memory-based stimuli (e.g., Ingo1d 1993; Tilley 1994; Witmore 2006). Within contemporary archaeological practice, placemaking, as a theoretical consideration, has also been linked to an act in the present, of recognising or acknowledging the past (e.g., Rubertone 2008). Places become on a continuum of experience; on one hand, places are formed through locally specific daily usage, and on the other

are interventions of control enacted by political elite. It is the constant reproduction of experience at multiple scales in the place that situates and engenders a sense of belonging, producing sensorial and affective meanings that link bodies to local geographies (Harmansah 2014).

Current research in South India has paved the way for linking past actors to landscapes (e.g., Bauer 2010, 2011; Johansen 2011; Morrison 2009; Sugandhi 2008). Kathleen Morrison's study of water reservoirs and the production of landscape histories in the Daroji Valley highlight how places are constructed and reconstructed through time, linking archaeology, land use and social history (2009). Building upon the ability to utilize landscapes' connections to political and social decision making, Andrew Bauer's work (2010, 2011) highlights the link between the social significance of landscape creation and the (re)production of social relationships, specifically in terms of megalithic ritual spaces at the Iron Age (c. 1200–300 BCE) site of Hire Benakal. In a related study, Peter Johansen (2011) investigates the Iron Age settlements in the Tungabhadra Corridor in order to better enunciate the political architectonics—specifically the politics of constructing, maintaining and contesting social differences—of the region. In each of these studies, the past social actors' active decision making with regards to placemaking is highlighted in an effort to better contextualise their cultural traces upon the landscape.

Critical social theory on space and place focuses on urban formations (e.g., de Certeau 1984; Harvey 1990; Lefebvre 1991; Soja 1989). However, demonstrated by the work discussed above, there is no reason to assume that placemaking can only occur in such contexts. The relationship between spatial definition and placemaking allows for a multi-scalar and multi-contextual framework in which, particularly in the case of the GJCC, the functionality of the site as a site of crafting may be a possible indicator for the way in which space is defined and place is made by active decisions undertaken by community members, even in a non-urban, ancient context. Recognizing the nature of community decisions in an archaeological context is contingent upon recognizing the functionality of the site; if one is producing copper artefacts and requires specific types of raw materials, *where* the site is placed is an active decision.

Through these interwoven discourses I have established a framework that allows us to better understand how things shape and are shaped by cognition, sensorial experiences, materiality and place. These

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mutual transformations are at the core of understanding the complexity of ancient sociality and allow us to situate the study on resonance and placemaking within an interdisciplinary archaeological scholarship.

### The Copper Collection from Ganeshwar

This volume documents the largest copper corpus from the Indian subcontinent from the third to second millennium BCE. These artefacts were collected from the site of Ganeshwar (Tehsil Neem Ka Thana; District Sikar; geo coordinates N 27° 40' 46", 75° 48' 93" E), Rajasthan. The site of Ganeshwar is one of the two type-sites of the GJCC. Each artifact listed in the 1978–79 Ganeshwar excavation register is documented in this volume (see Appendix 2 for a list). There are many different artefact types in this collection, and I have chosen to honour the original naming of the artefacts to maintain the interpretive stance taken at the initial moment of the registry construction. This study focuses on the artefact type described as “arrowheads” because it constitutes almost half of the collection. The records utilized in this project are the original reports recorded in the official excavation registers at the offices of the State Department of Archaeology and Museums in Jaipur, Rajasthan, between 8 March and 10 June, 1979. In 2003, I was granted access to this collection between 21 February and 10 April, dependent upon the availability of two museum personnel, Zafarullah Khan (acting excavation officer) and Daya Ram Shankar (assistant to the officer), who were required to be present with me at all times during the documentation process. After the documentation of this material, I presented the State Department of Archaeology and Museums with multiple copies of the data (as CDs), along with the (negotiated) agreement that I would wait a decade before publishing the material myself. This register includes 943 copper artefacts of which 432 are noted as arrowheads in the original document; of those, only 133 were used to construct the typology presented in chapter three.

The region of focus is the northeastern sector of the state of Rajasthan, India, between the contemporary cities of Jaipur and Delhi. In 2003, I conducted a series of collaborative and cooperative archaeological surveys with villages in this region (Rizvi 2006, 2007). Because of its history of excavation, one of the main sites surveyed was Ganeshwar (Rizvi 2007). The GJCC Survey 2003 provides some context for the collection

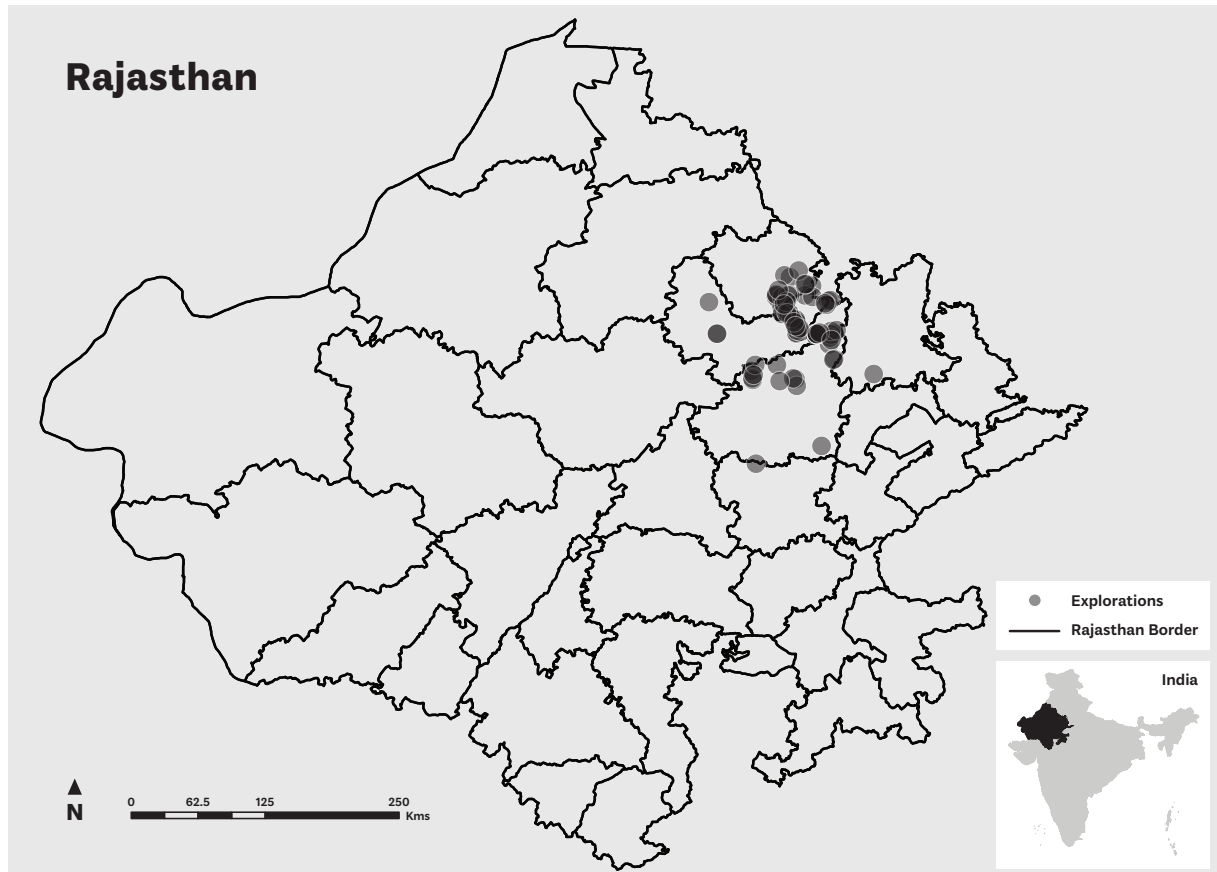
documented and analysed in this volume as it was recorded from Ganeshwar during the 1978–79 excavation field season.

The GJCC settlements cluster within the regions of the Aravalli Hill Range, primarily along the Kantli, Sabi, Sota, Dohan and Bondi rivers. This part of India is known for its farming and pastoral resources, as well as for minerals, the most important of which is copper. Khetri, the largest copper source in Rajasthan, has been exploited since antiquity and continues today as one of the major resources for copper production in India.<sup>2</sup> This region tends to be sandy, with some areas of alluvium underneath the topsoil. Due to soil type, vegetation tends to be thorny and with short trees. These thorny forests are scattered mainly in the arid areas, covering the districts of Nagaur, Pali, Sikar, Jhunjhunu, Ajmer, Jodhpur and Jaisalmer. Some of the dominant species of plant cover in this region include: *Prosopis*, *Capparis deciduas*, *Acacia*, *Leucophloca*, *Acacia nilotica*, *Salvadora oleoides*, *Balanites*, *Ziziphus*, and *Calatropis*. During the rainy season, the vegetation also includes: *Tephrosia purpurea*, *Boeharrivia diffusa*, *Tribulus terrestris*, *Crotolaria*, *Achyranthus aspera*, *Lecus molussiana*, *Corchrus depresus*, *Heliotropium strigosum*, *Digera*; grasses like *Setaria glauca*, *Digitaria*, *Sangunials*, *Tetrapogon tenellus*, *Brachina ramosa* and *Eragosties pilosa*; climbers and twines like *Cocculus pendulus*, *Vallis solinacea*, *Cryptostegia grandifolia*, *Ipomea*, *pestigrades*, *Rhychosia minima* and *Vigna catjag*; and finally, the winter annuals are *Argemone maxicana*, *Pontella supine*, *Chenopodium alubum*, *Polygonum plebeguin*, *Heliotropium ecchwaldii* and grasses like *Eragostis ciliaii*, *Cymbopogon* and *Sporobulus tremulis* (Jain 1992, 68–69; Saxena 1995, 34–45). By far, the most prevalent bird species in the region today are the grey partridge (*Francolinus pondicerianus*), two specimens of quails (*Coturnix coturnix* and *C. coromendelica*), and a common sandgrouse (*Pterocles exustus*) (Rana and Mittal 1992, 104).

Archaeological evidence for the GJCC has been primarily located in the districts of Jaipur, Sikar and Jhunjhunu in Rajasthan (**Figure 1.2: map of survey area**). The sites are found in and around the Aravalli hill range and in close proximity to copper resources. This hill range is broader in the south, while the northern track is more akin to separate hills, resulting in lower elevations. The range is composed of Delhi System rock formations that start in Delhi in the north and run through Ajmer to Palanpur in the south. In the north, between Delhi and Jaipur, the ridges composed of Delhi quartzite and schist comprise an intricate system of hill masses convex to the southeast. The main axis of the ridge is in the region of Khetri and Sambhar (Dave 1995, 21).

The Delhi System rock formation is recognized as the primary source of copper mineralization.

2  
For colonial accounts of copper exploitation in this region, see: Imperial Gazetteer of India: Rajputana 1908, pp. 52, 71.



**Figure 1.2**

Map of Rajasthan with district lines and explored GJCC sites marked

The main copper deposits occur in Khetri and Singhana in Jhunjhunu District and Dariba and Kho in Alwar District. Some of these copper deposits are associated with small co-deposits of cobalt minerals. Among the non-metals present in the Delhi System are deposits of barites at Sainpuri and Bhankher in Alwar District and steatite near Dausa (Dove 1995, 22).

In total, 385 GJCC sites have been recorded; the compilation of these sites comes from the survey conducted by the GJCC Survey team (myself and collaborating partners) and other archaeologists, and is roughly spread over 34,000 square kilometres, with an estimated settled area at 12.51 square kilometres (see Appendix 1; Hooja and Kumar 1997). The survey includes settlement sites, vitrified metal waste sites, mining sites and raw material processing sites, often found in close proximity to each other, each providing a different specialized activity or resource (**Figures 1.3–1.5: GJCC survey maps**).

The integration of the various types of sites contextualizes their clustering. The high number of recorded sites in a relatively small geographic region suggests a high density of population and activity. Further, increased social and political complexity

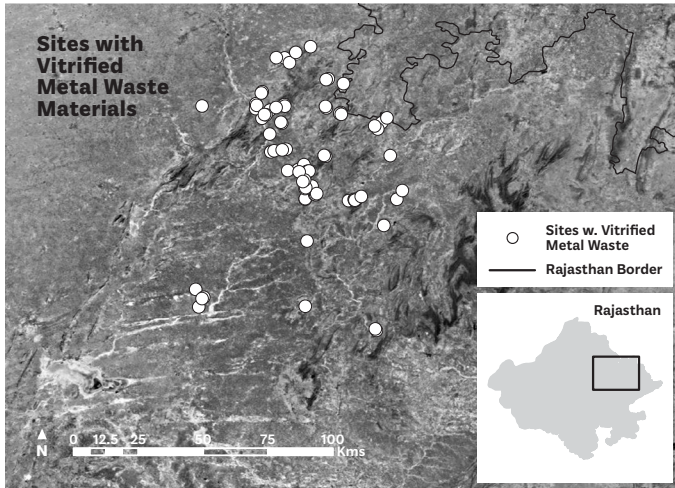
is reflected by the spatial practices of the GJCC communities that formed around copper extraction and production technologies (Rizvi 2007).

The placement of sites is a decision that can be documented archaeologically through site patterns. The GJCC site patterns illustrate a separation of smelting sites and settlements index active decision making by the community of producers. The Ganeshwar copper arrowheads are products of a cultural context that provides meaning and value to the artefact. Their process of production is infused with a practice that is also culturally specific and may have roles and rituals associated with it that fall along gender or age lines—making each corporeal experience equally significant to the larger process of production. Also important to keep in mind is the community-based aspect of production which, as Ratnagar has argued, ‘was a technology that no single household could manage on its own’ (2007, 121). Thus, spaces in which copper production took place were spaces in which the roles from society and culture mapped on to those of production. These roles could possibly be negotiated in ways that in turn affected society, thus impacting our understandings of ancient sociality.

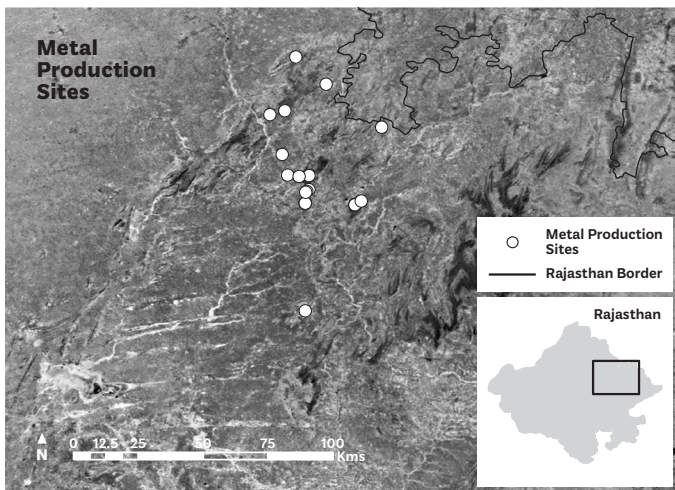
**Chapter Summary and Introduction to Other Chapters**

This introduction sets the framework within which this volume will now unfold. Shifting the focus of research in this region from solely determining settlement complexity, the GJCC is analysed through site placement and a study of the copper corpus, in particular the copper arrowheads. In doing so, this research illuminates the many relationships and forms of communication between copper and humans that produce practices, styles and traces on bodies, materials and landscapes. The chapter began with a consideration of the artefact as part of the discourses of colonialism as an object of desire and its transformation to an object of science. By situating technology and crafting within the South Asian context, this chapter presented the function of aesthetics in archaeology, and the heightened focus on craft specialization within regional literature. In order to place the crafting of copper within those discourses, this introduction then moved through scholarship about metallurgy and the role of symbolic, cognitive and behavioural models for interpreting crafting. This volume chooses to engage with crafting through discourses related to materialism and new materialisms in order to posit the crafting of resonance. Resonance is only one of two affective conditions related to crafting considered in this volume. The second is placemaking delivered through the crafting of materials, bodies and landscapes. To take into account the latter, this introductory chapter ends with a short note on the copper corpus from Ganeshwar.

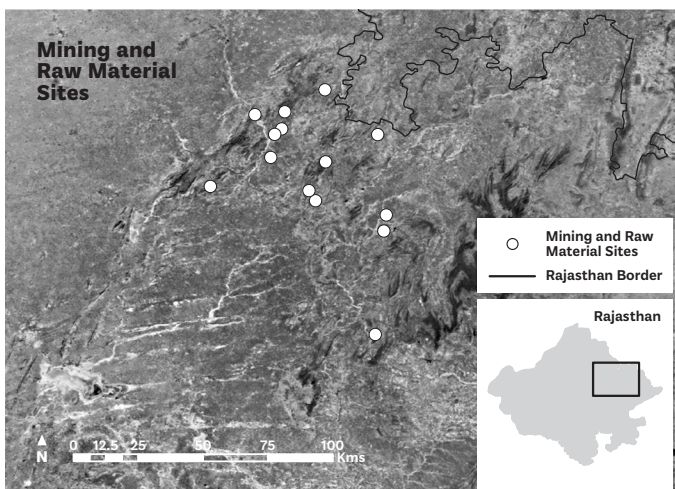
It is the following two chapters (chapters two and three) that provide much of the archaeological data relevant to the discussion of crafting in the GJCC. Chapter two provides basic archaeological information related to the GJCC, as well as a section specifically dedicated to paleo-climate, irrigation and subsistence agriculture. This section specifically challenges the notion that the GJCC was not a sedentary agricultural community. Archaeological evidence in the form of storage space, grinding stones and saddle querns, in addition to favourable conditions for agriculture based on the climatic indices and the suggestion of irrigation canals, all index the possibility of agriculture as a form of subsistence. Their sedentary lifestyle, however, may have been a result of investment in a landscape not just for agriculture but also for mineral resources, and it is important to recognize that these stakes are not mutually exclusive.



**Figure 1.3**  
Satellite map of GJCC Survey sites based on 2003 Survey that document vitrified metal waste material



**Figure 1.4**  
Satellite map of GJCC Survey sites with evidence of smelters



**Figure 1.5**  
Satellite map of GJCC Survey sites with evidence of raw material procurement

## Introduction to the Affect of Crafting

In order to understand the relationships among sites and how they link to notions of placemaking, chapter two also provides primary data of the 2003 GJCC survey. Different kinds of sites were coded based on their functionality as a mining site, habitation site, vitrified metal waste site, or raw material processing site. These type sites were selected because this was what was visible on the surface for survey. The sites also clustered in specific formations, and based on cluster analysis and discussions with community members in the villages of both Ganeshwar and Jodhpura, five complexes were identified. The context of the copper corpus represented in this volume is the final section of chapter two, which synthesises the excavation reports from the site of Ganeshwar. The excavation reports provide context for chapter three, which focuses specifically on the material culture and regional comparisons of form, utilized to build chronology.

Providing an overview of the ceramics, with short notes on microliths and some miscellaneous finds, the bulk of chapter three discusses the copper material from the site of Ganeshwar. It provides a typology for the arrowheads and shorter descriptions of the other copper material found at the site. This detailed description is necessary as it allows us to then contextualise and compare it to other copper material from the region and analyse similarities not only as indicators of politics, but also as forms engendering belonging. The chronological comparisons of copper found in different contexts suggest cultural resonance is produced as an affective response to crafting. And this resonance may have been influenced by bodies, minerals and landscapes as each plays an important role in intersectional identity formation. The data and chronology lead us into the final chapter (chapter four) that focuses on the affect of crafting and its relationship to ancient sociality.

This final chapter first contends with the ontology of the corpus prior to investigating crafting bodies. The first section of the chapter deals not only with issues related to labour and craft, but also the ways in which the labour of crafting crafts the labouring body itself. Moving through all the steps of production, this section illustrates the corporeality of each body situated in the act of crafting.

Keeping in mind that embodied practices unfold in specific places, the section that follows analyses the labour of landscapes. Using the survey data and focusing on the ways in which the land is transformed by, and works in relation to, the labouring and crafting body provides an intertextual understanding of the

many simultaneous affects involved in the production of the copper corpus. These links between the labouring bodies and landscapes aid our understanding of complexity of the third millennium BCE GJCC.

These concerns are all related to those crafting the materials and cannot, on their own, account for those not engaged in such labour. Even if one did not craft copper, one existed in the space of an affect that was simultaneously crafted. This aesthetic empathetic response evoked a sense of belonging to a crafting community, or to the vibrancy of the mineral itself. The intimate evocative sense of belonging to a community is what I argue is the crafting of resonance. Also linked to this larger conceptual framework, which accounts for bodies involved and not involved in crafting, are ways to understand the crafting of place. The discussion of crafting place can be considered a metadiscursive element of the labouring places, maintaining within it the ability to talk about place complexity as one more form of crafting community.

The larger project that this volume addresses is the question of how one belongs to the GJCC, and that is the final aspect of chapter four. In this section, I parse through the many ways in which *things* belong within sets of relations, collective memory, and social life. That sense of belonging might also give rise to forms of nostalgia and ways in which a material diaspora might be understood. All of these possible analyses exist around the vibrancy of the copper mineral and the corpus itself. In order to visually re-present the copper vibrancy and aesthetic form, Part Two of this book is a catalogue of copper artefacts. In the first section of the catalogue each copper arrow head is reproduced individually, but grouped based on typology. The second section catalogues all copper pieces from the 1978–79 collection.