Toward Materiality and Globalization in the Art of Gandhara

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Abstract

To better understand and more effectively address the complexity of the art of Gandhara, its development out of cross-cultural encounters and exchanges, and the multivalent meanings that emerged out of the varied processes of its production and use, two analytical frameworks can be usefully employed: materiality and globalization. The conjunction of these approaches holds tremendous potential for the field of Gandharan art and archaeology. This also moves scholarship away from reductive Hellenizing discourses towards ideas, that focus on the effects of the complex connectivity and mobility in lands associated with this art. Beginning with a brief historiographical review and critique of the formative narratives on Gandharan art, this paper goes on to discuss the concepts of materiality and globalization, their respective scope and implications, and how they can be applied (individually and collectively) to Gandharan art.

Keywords: Gandhara, Globalization, Materiality, Sculpture, Technologies

1. Introduction

To better understand and more effectively address the complexity of the art of Gandhara, its development out of cross-cultural encounters and exchanges, and the multivalent meanings that emerged out of the varied processes of its production and use, two analytical frameworks can be usefully employed: materiality and globalization. The conjunction of these approaches holds tremendous potential for the field of Gandharan art and archaeology. The present paper suggests a shift away from aesthetic and iconographic concerns in Gandharan art towards a reorientation with its materiality. In other words, it focuses on the material properties of the artefact, and the action, praxis and practice it engendered. It also makes the argument for moving scholarship away from reductive Hellenizing discourses towards ideas, that focus on the

effects of the complex connectivity and mobility in lands associated with this art.

Beginning with a brief historiographical review and critique of the formative narratives on Gandharan art, this paper goes on to discuss the concepts of materiality and globalization, their respective scope and implications, and how they can be applied (individually and collectively) to Gandharan art. A short case study is conducted in order to show the feasibility and potential of applying these methods in practice, as well as to highlight the many different avenues of enquiry they open up. Some of the main questions are: What is materiality and what are the implications of the 'material turn' for archaeology and art history? Can globalization, essentially a modern concept, be effectively used in the ancient context? What makes concepts based on globalization better than the existing paradigms? What makes Gandharan art a viable candidate for materiality and globalization thinking? Will a focus on these analytical frameworks induce significant changes in the nature of current scholarship on the art of Gandhara?

2. History and narrative

The ancient art of Gandhara has typically fallen in the domain of classically trained archaeologists and art historians (fig. 1). Developing out of antiquarian proclivities of the 17th century, Classical archaeology largely remained under-theorized, stubbornly clinging to traditional practices of operating within highly specialized sub disciplines (Dyson 1993, 195). Classical art historical analysis also remained confined to aesthetic contemplation of artefacts removed from their original contexts, with little thought to the maker's ideas and attitudes in the process of creation (Gell 1998). Therefore, it was the classificatory and positivist approach of archaeology and the aesthetic concerns of art history that informed early scholarship on Gandhara in the 19th and 20th century. With a diffusionist culture-historical perspective that perceived cultures as bounded monoliths, traditional scholarship had been dominated by debates on the Hellenistic or Roman origin of, and 'influence' on, Gandharan sculpture (Foucher 1914; Marshal 1960; for

Fig. 1 - Massed group of Gandhara Buddha and Boddhisattva images collected at Loriyan Tangai (Peshawar District). Photo by Alexander E. Caddy, 1896. © *The British Library Board, Photo 1003/(1042).*

critique Abe 1995; Bracey 2019). The overemphasis on Graeco-Roman 'influence,'[1] (leading to problematic epithets such as Graeco-Buddhist, Romano-Buddhist etc.) to the exclusion of all else, resulted in a unidirectional hegemonic appropriation of Gandharan art by the European subject. These Eurocentric discourses were epistemologically informed by colonialist perspectives, essentially conveying ideas of the Western civilizing influences in South Asia. Conversely, anti-colonial and nationalistic sentiment sought to put down Gandharan artistic creativity by describing it as debased *imitation* of Western forms (Havell 1928, 41), stressing instead the indigenous Indian artistic innovation (Coomaraswamy 1927). The underlying assumption in these approaches was that Gandhara was a passive peripheral receiver of anything that the active Hellenistic/Roman core culture had to offer or that its art exemplified decadent *impurity* of foreign forms unnaturally wedded to Indian ideals (see Falser 2015). Distancing Gandharan art from unidirectional Hellenization (or for that matter Romanization) discourses as well as anti-colonial rhetoric, based on modern-day

[1] Undermining differentiation, 'influence' implies unproblematic causality and casts the maker of art as passive in relation to the active outside agent (Michael Baxandall 1985, 58-62).

nation state ideology, is imperative.

One prevalent art historical methodology in the study of Gandharan art involves interpretation through iconographic analysis. Meaning is sought through a textual model. This essentially stems from the early scholars' primary interest in understanding the Buddhist tradition in the region (Brancaccio and Behrendt 2006, 2). Analysing art solely through the sacred lens invariably brings it into the domain of ideology and propaganda (Bahrani 2014, 34). Additionally, the method runs the risk of seeing images merely as visual illustrations of texts—specifically Buddhist traditions. This approach has been increasingly challenged in art history in recent decades as it undermines the complexity of visual language and tends to leave out the "historical and context bound information that images carry through their material presence" (Lehmann 2015, 22). In the case of Gandharan sculpture, its three dimensionality and its affordance to touch, sight and perception can never be captured by text alone.

In recent decades, there has been an effort to think more in terms of the specific context of Gandharan artefacts (Taddei 2003). Recent studies also discuss the complex and hybridized nature of sculptural imagery (Srinivasan 2006; Pons 2011; Brancaccio 2013; Stoye 2019). However, more work is needed to examine the active role of local agents in intentionally appropriating foreign formal features as well as the indigenization of these forms in local contexts. It is also important to question how, in the process of relocation and translation, new social and cultural meanings were inscribed into the artefacts. Most of the approaches eventually fail to go beyond representation and statically interpret artefacts as mere 'reflections' of the cultural, political and religious entities. The underlying idea here is that the term 'reflection' is inadequate, as it does not incorporate human *agency* and ignores the active nature of material culture, misrepresenting its relation to society (Hodder and Hutson 2003, 3).

3. The matter of artefact

Ironically, despite studying objects, whether artworks, artefacts, visual culture or material culture, archaeologists and art historians often tend to overlook their materiality: the objects' specific material properties or *thingness*, their agency and affects, the kinds of interactions they bring

forth and the complex ways they are entangled with each other and their humans interlocutors (Gell 1998; Knappett and Malafouris 2008; Hodder 2011). By focusing solely on meaning, form and representation, we remain limited within, what Tim Ingold has argued is, the Cartesian dichotomy of mind and body, or mind and matter (Hicks 2010, 74). To understand artefacts, we have to change our understanding of 'meaning' itself; meaning does not only come from representation and mentalist approaches but also resides in the physical properties, production processes, techniques and human object interaction and engagement (Knappett 2005). The concept of materiality originates out of material culture studies in anthropology, emerging out of the Deetzian idea to 'connect people and things' (Hicks 2014, 47). Materiality brings the focus back to objects. It forces us to eschew reductive diffusionist perspectives on object distribution, and to question what objects do, the kinds of actions they allow, the relations they facilitate and the practical demands they exert on humans.

In recent times, art history has also self-reflexively started to draw upon interdisciplinary theoretical frameworks concerning the physicality and materiality of artefacts. It is now being argued that materials/mediums are a meaningful component of visual artefacts and therefore cannot be separated from representation (Lehmann 2015, 21; Yonan 2011). Drawing on visual anthropology, an object-centred focus has highlighted the specificity and efficacy of art objects, leading to new understanding regarding the ontologies of art and the multivalent effects of objects on human perception and action (Gell 1998; Osborne and Tanner 2007). This reflects a significant change in art history from visuality and spectatorship to an acknowledgment of artworks as embodied objects, with their own active agency in the social and cultural practice of a society (Gaifman and Platt 2018).

Mobilizing the concept of materiality for analyzing the art of Gandhara is imperative. Not only because the very conscious choice of using the permanent medium of stone for Gandharan art or the very distinctive qualities of that stone make it impossible to divorce the material from the visual. But also, because the material turn can help us grasp the role Gandharan artefacts played in contemporary society. It is also important to note the relationship between materiality and immateriality in the context of Buddhism: the ultimate belief in immateriality was itself expressed through the very materiality of forms

and practices, making the material a conduit to the immaterial (Miller 2005). In the context of active use therefore, the idea of materiality can be explored through semantic signification or phenomenological analysis of the artefact.[2] For the purpose of the current discussion, however, turning to more pragmatic concerns in terms of making and doing, such as technological action and artefact production on a local level—which I will be returning to later in the paper—can open up interesting avenues of enquiry. It makes us consider the material affordances as well as understand the sequences and choices in production technologies of objects. Focusing on materiality in terms of production and technology also allows us to identify the 'communities of practice' (see Lave and Wenger 1991) that are engendered through *human-thing* interactions. Moreover, in approaching the Gandharan artefact as a boundary object (Star 1989; Wenger 1998) bringing together various communities of practice, we may also understand how, through a tangle of affordance and choice, it shaped the social and cognitive dimensions.

By privileging the Gandharan artefact itself and distancing it from disciplinary practices mired in originary speculations and aesthetic considerations, we may effectively yoke it to the lived experience of contemporary people variously engaging with it. Through the practical ways in which humans use bodily action and technologies to engage with things, we thus approach the meaning of these objects as 'meaning in the making' (Knappett 2020, 187). In the context of production, by focusing on the social life of these objects (Appadurai 1986), and their multidirectional itineraries, we also approach the concept of mobility (Hahn and Weiss 2013, 7): mobility of objects, people, motifs, and/or knowledge. This enables us to employ the notion of materiality for reconstructing the intercultural and cross-cultural, material and social networks these objects were part of. This is where materiality can potentially intersect with 'globalization thinking,' enabling us to study the local and global phenomena through the perspective of Gandharan material culture, technology and practice.

[2] While this is out of the scope of this paper it can be reserved for future study.

4. A globalization of connectivity and mobility

Globalization, an increasingly popular concept in social sciences since the 1990s, has transitioned from a theory purely related to modernity and capitalism, to one that has a deep historical perspective and is proving to be equally useful for antiquity. In recent times scholars have explored the concept of globalization revealing its relevance to past societies as well as its potential to circumvent the constraints imposed by traditional analytical frameworks informed by imperial and colonialist discourses. Arguing for a plurality of ancient globalizations, Jennings has compellingly demonstrated through the archaeological examples of Uruk-Warka, Cahokia and Huari, that long term global patterns of intense interaction—similar to modern globalization—occurred at different times in the past with variation of degree rather than of kind (Jennings 2011, 145). Pitts and Versluys also argue that globalization is a useful frame of analysis for understanding the ancient Graeco-Roman world, as it fulfils the general criteria of increased connectivity, existence of a common market, impact on the local of global developments, time-space compression, cosmopolitanism etc. (Pitts and Versluys 2015, 17; see also Hingley 2005).

Despite widely varying perspectives on the concept, as well as challenges in conceptualizing it for ancient societies, globalization holds immense potential for addressing cross-cultural encounters in the pre-modern past. As cogently pointed out by Knappett, the notion of globalization in pre-modern periods does not actually entail focusing on 'global' as a literal condition or a defining trait of the concept (Knappett 2017, 29). Global, then, need not be planetary and once the constraint of geographic scale is lifted, globalization can be defined as a multi-scalar, complex and dynamic system entailing a multiplicity of movements of objects, motifs, ideas, technologies, practice and/or people. Decentring traditional cores through a focus on local action, the concept of globalization also accommodates differentiation and diversity, providing the impetus to move beyond reductive discourse centring on 'influence'. For the current discussion, it suffices to use the conceptual apparatus of globalization in terms of complex connectivity and mobility, and their multifarious effects in the intersection of the local and the global. The notion of local, however, is not a subaltern inversion of the global but rather the site of interaction, innovation,

negotiation and subversion where the reality of the global comes into existence.

Considering that Gandhara was connected to the globalised and globalising worlds (Greco-Roman world, China, Central and western Asia, Parthia, India etc.) through extensive maritime and overland routes (see Galli 2017; Canepa 2010, 12) and its material culture was part of the broader entangled networks of cultural flows, makes it a particularly well-suited material domain for the exploration of the processes of ancient globalizations as well as meaningful local action in their context. As evidence from *Periplus Maris Erythraei* and *Mansiones Parthicae* indicates, connectivity and mobility have long been part of this region. It was the Kushan period, however, that saw a marked intensification in the connectivity and frequency of networks, and a high circulation of objects and people on both the regional and interregional levels. The remarkable homogeneity of Gandharan sculpture in terms of material, style, iconography, and function across the vast stretches of a seemingly fragmented region, is emblematic of its intra-connectedness. At the same time, the discovery of a Kushan-period storeroom at Begram, dating to the 1st century CE, attests to this region's participation in the wider world as an interface of intense interaction. The so-called 'Begram Hoard' is a veritable time capsule, offering a rare glimpse into the interconnectedness of the ancient world and the multidirectionality of its material networks. Roman bronzes, Egyptian painted glassware, Chinese lacquer ware, Indian ivories, Hellenistic *emblemata* are only some of the examples that form part of the assemblage (Hiebert et al. 2008). These objects are not mere material indicators of connectivity and mobility; as carriers of immaterial forms, techniques and practices, they were also potentially transforming agents. Globalization thinking can thus serve to direct the Gandharan artistic discourse beyond influence, acculturation, colonization and reductive binaries of Graeco-Romans and natives, towards dynamic flows of materials, motifs, and technologies as well as on-going processes of praxis and practice.

5. Implications for the study of Gandharan art: the case of stone relief panels

The stone relief panels are amongst the earliest material manifestations of Buddhist art in Gandhara (Jongeward 2019, 34). They were the most commonly used decorative revetments for adorning the body of a stupa (fig. 2). The reliefs are remarkably homogenous and recognizable in terms of material, style and iconography across the entire region.

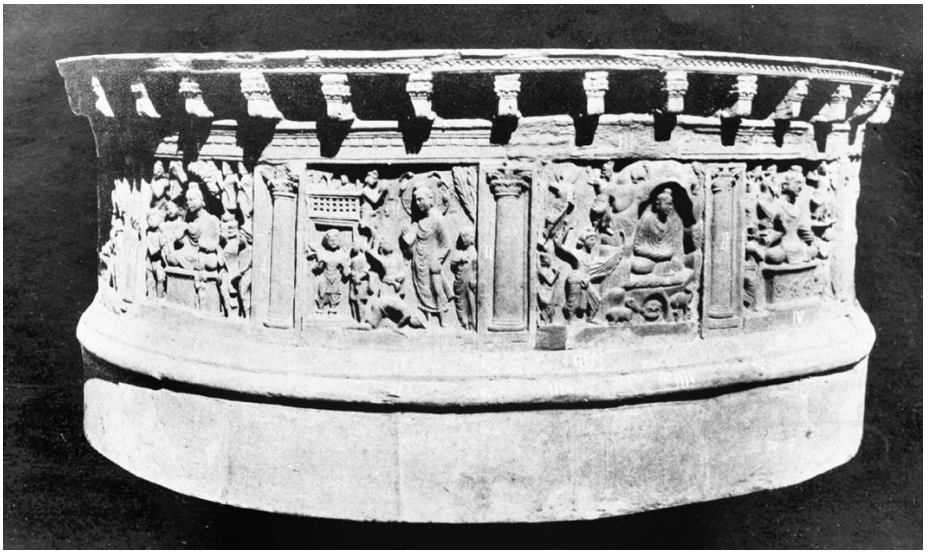

Fig. 2 - Narrative reliefs from Sikri Yusufzai stupa. 2nd to 3rd century CE. Schist. Lahore Museum, Pakistan (after Percy Brown 1908).

Yet differences emerge, highlighting the different levels of skill and craftsmanship, and the varied filters decoration and technologies passed through, before reaching a particular centre of production. Intricately carved with figures, architectural elements, and motifs culled from a wide corpus of Indic, Greek, Parthian and Roman artistic traditions, these artefacts have long been a focus of stylistic analyses. By turning to the matter of the artefact and reconstructing the process of making stone relief panels through a technology-based *chaîne opératoire* approach (Lemonnier 1992), we can identify the networks of socio-material relationships and communities of practice enabled by the object as it comes into being. The *chaîne opératoire* approach not only

highlights the series of operations through which transformation of raw material into an art object occurs, but also the technological processes and practices through which such objects acquire their materiality. Most of all, its emphasis on *choice* at each stage of the operational sequence, which may be guided by cultural as well as technical factors, is crucial to the present discussion. This approach also has the potential to chart small scale bodily movements as well as global flows of information.

6. Material matters

Schist, a metamorphic rock with a very strong grain, is the most favoured and commonly used material for the production of sculpture in Gandhara in the early centuries of the Common Era. It comes in many hues ranging from the dark green schist of Swat valley to pale and deep greys from other regions in Gandhara. In spite of its schistosity, it is malleable and capable of taking great detail. Additionally, the large amount of mica minerals and grains give it a high luster. In 1986, Kempe published his findings on an ancient disused quarry between Dargai and Sakhakot which yielded chlorite-mica-quartz-schist. The microscopic examination, chemical composition analysis and analysis by electron microscope led Kempe to conclude that the disused quarry was one of the sources for Gandharan sculpture (Kempe 1986, 84). Several quarries for this type of stone have now been identified. More recently, Cambon and Laclair presented the petrographic survey results conducted on 196 specimens from Musée Guimet, placing these artefacts in relation to geological sites of Afghanistan and north-western Pakistan (Giulliano 2015, 17). The petrographic surveys carried out in Buner and Swat have also revealed various lithotypes as well as potential quarries that were exploited for sculptural material (Faccenna et al. 1993; Pons 2019, 16). The results reveal the overall homogeneity of the material used for Gandharan stone sculpture with some exceptions from Swat.

As far as the geographical relationship of quarries with archaeological sites is concerned, it has been shown, with reference to Swat at least, that in most cases small-scale quarries produced material that was transported to nearby workshops and construction sites. The material used for sculpture from the monastic sites of this region is

almost always of a local origin. What is significant is that along with use in local production, the stone quarried at some sites in Swat, such as the intensively exploited ancient quarry at the site of Swegalai, was also exported to neighboring regions, for example, the Peshawar plain (Olivieri 2000, 581). These particular quarries produced chlorite schist—one of the more valuable types of schists used in Gandharan sculpture—and talc schist, raising questions regarding regional variations relating to the grade of metamorphism and preference for certain types of schist.

What are the implications of the small-scale mobilities on this level when schist was quarried, rough-hewn and transported to the sculptural workshop or construction site? Can we parse the artistic processes and practices in play insofar as they relate to the carvers and the material exploited for Gandharan art? Did ideas of a difference between the properties and qualities of the material prevail in the perception of people? Properties of schist are observable such as its inherent metamorphism and malleability, whereas the qualities and attributes of stone can be ideological as well as symbolically charged. For example, Bevan points out, that stone is frequently associated with ideas of purity, permanence and essentialism (Bevan 2007, 187 as cited in Panagiotopoulos 2013, 150). There is a crucial need for more materially grounded studies in order to advance our understanding of the social, cultural and economic factors behind the choice for particular schist types as well as to effectively address questions such as those posed above.

7. A tangle of technology, production and practice

In recent years, technical studies on tool marks, assembling techniques and unfinished sculptures from Gandhara have brought invaluable insights into the production activities of sculptors (Faccenna 1997; Rockwell 2006; Vidale et al. 2015; Panuzzi 2015; Dehejia and Rockwell 2016; Brancaccio and Olivieri 2019; Naiki 2019). These studies can be integrated to understand the sequence of production and the use of technologies.

The analysis of the unfinished and finished relief panels from Takht Bahi in Peshawar Valley, Butkara 1 in Swat valley and Musée Guimet (Faccenna 1997; Rockwell 2006; Vidale et al. 2015) reveals the

different stages in the process of relief carving: squaring up of the block on its arrival from the quarry; laying out the design with a fine, hard point; roughly delineating the individual figures and groups; carving out the figural decoration and motifs; applying paints and/or gilding. These activities were carried out by craftsmen with different kinds of specialization, revealing that Gandharan sculptors were not only diversified but also specialized in sculpting techniques (Brancaccio and Olivieri 2019, 139; Pons 2019, 17). That the same relief was tooled by different hands at different stages in the carving process has also been affirmed by stylistic analyses on relief panels from secure contexts in Swat valley (Faccenna 1997, 68). The *Mulasarvastivada-vanaya* (a monastic code redacted in Gandhara) also mentions differentially specialized craftsmen responsible for various stages in the construction and decoration of a monastic building and the monk's active engagement in the entire process (Schopen 2006, 233). The archaeological and epigraphical evidence, however, offers a direct glimpse into technologies as well as the organization of labour, both within specialized workshops and on the construction site.

In Gandhara region, we see the use of a limited number of tools in the production of sculpture. Gandharan sculptors were flexible with their tools and could use one tool in a variety of ways to create different forms and surfaces (Dehejia and Rockwell 2016, 239). The principle tool for sculpting was a flat chisel of different widths, with limited use of point chisel, lathe, burin and drill (Rockwell 2006, 168). Interestingly, no evidence has come to light for the use of tooth chisel and rasp—tools that were an integral part of Graeco-Roman (Palagia 2006, 252) as well as ancient Iranian sculpting practices (Nylander 2006, 130). It should be noted however, that the lack of tooth or claw chisel—an intermediate working tool whose marks are erased during finishing—may be attributed to the difference in the materials. Drills were also used in the Greek world from the 6th century BCE onwards, for rendering details (Palagia 2006, 255). There is no evidence for drill use in Central Indian stone-working processes (Dehejia and Rockwell 2016). Certain reliefs from the Swat region in Gandhara on the other hand, reveal the evidence of drill use. Analyses of relief panels from Gumbat, Saidu Sharif and Panr suggest a very limited use of two types of drill (bow-drill and strap-drill) in the articulation of the final touches on specific kinds of motifs (Vidale et al. 2015; Brancaccio and Olivieri

2019). This was done by distinct specialists who may have had an expertise in rendering classically inspired motifs and scenes (Brancaccio and Olivieri 2019, 139). It is also worth noting that the use of lathe and burin points to technical links between schist sculpting and local wood crafting practices (Vidale et al. 2015, 40).

It has been observed that the pictorial details in Gandharan reliefs were carved out relatively freely, almost independent of the original schema, making space for creativity and agency (Rockwell 2006, 178). Consequently, the inclusion in early Gandharan reliefs of motifs from local crafts (textile and wood furniture) and foreign characteristics, essentially independent of the standard Buddhist religious iconography (see Srinivasan 2006), has interesting implications. The sculpting activities were carried out under the supervision and teaching of a master sculptor who was behind the overall design and conception (Faccenna 1997, 68). Some of these unfinished panels show experimental drawings that may be related to sharing and learning of technical knowledge by new actors through 'legitimate peripheral participation' in the ongoing activity (Lave and Wenger 1991, 29): firm strokes by a skilled master roughly delineating an animal and/or human figure for teaching an apprentice (fig. 3), while hesitant and hurried lines (fig. 4) showing traces of practice by a trainee (Facenna 1997, 75). Another interesting clue comes from the inscriptions of syllables on the back and sides of the relief which have only recently been studied. These have been identified as Gandhari syllables written in local *Kharoshti* script, used as location markers on the sculptural panels to communicate their correct position and sequence for installation on the stupa building using mortice and tenon joinery technique (Salomon 2006, 190). Not only does this have significant implications for questions regarding local or migrant artisans, it also shows how different communities of practice overlapped through the artefact.

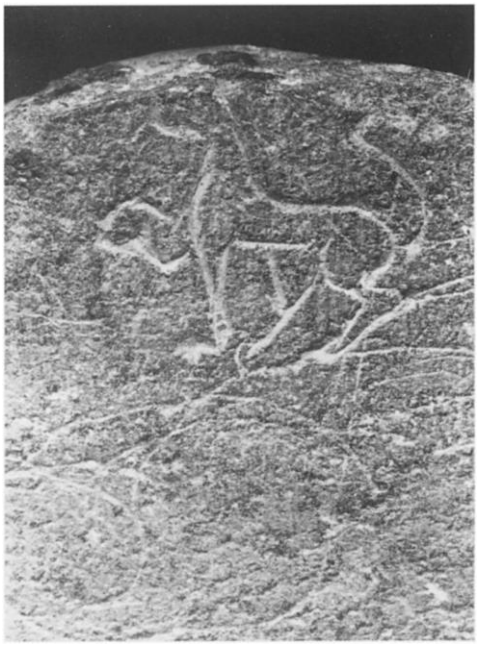

Fig. 3 - Butkara 1 panel. Chlorite-schist. (after Faccenna 1997. Inv. no. 664)

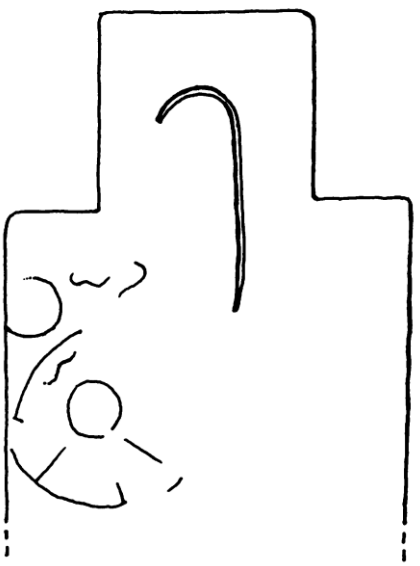

Fig. 4 - Butkara 1panel. Drawing by F. Martore (after Faccenna 1997. Inv. no. 3780).

Therefore, once we treat the Gandharan artefact as an active object on its own terms, its material qualities and physical features emerge, enabling us to reconstruct the *chaîne opératoire* as well as gain other significant insights. We begin to understand how specific material properties inform the artistic process. We also get a glimpse into the coordination and interaction between different sets of workers in the course of the artefact's production and installation. Those responsible for quarrying, rough hewing and transporting the stone, the diversified labour working in the sculptor's workshop, the specialized sculptors intricately carving the panel under a skilled head craftsman, the expert carvers articulating the final details with a drill, and the builders at the construction site responsible for installing the pieces in their correct position, are all brought together through the process of the object coming into being. The choice of subject matter, the overall design conception and installation also highlight the involvement of patrons (monastic and/or aristocratic) and architects in the process. More importantly, a reorientation to Gandharan reliefs' materiality makes us 'see' what these artefacts, as objects, did and the practical events they set into motion. It makes space for the consideration of agency, creativity and difference. Craftsmen, working with the affordances and constraints of schist, available technologies and patrons' desires, intentionally included or excluded styles, forms and configurations out of personal, cultural and/or aesthetic choices and associations. At the same time the material also dictated how iconography (religious or otherwise) and its representation eventually took visual form. The focus on materiality and socially meaningful practice therefore reveals the various *human-thing* engagements and entanglements catalyzing the process of meaning-making, whereby a block of schist is transformed into a 'significative' object (Knappett 2020, 194). This demonstrates that meaning need not only be sought in representation or imagery through the viewer's standpoint, but that it also steadily emerged during the entire material process of its production.

8. Local and global dimensions

The introduction and gradual proliferation of stone sculptures from roughly the 1st century CE onward points to transformation of local visual and material culture as a result of the extensive networks along

which objects, people and technologies were moving. The homogeneity of sculptural phenomenon across Gandharan regions, as well as clear affinities with Classical, Parthian, and Indic artistic traditions not only attests to long distance movement of objects, but also a degree of commonality in aesthetic appreciation. The comparison of material and stylistic features, along with the *chaîne opératoire* on a regional level, has the potential to identify variations and similarities in the immediate geographical locale. The current evidence tells us that the material and artistic technologies are more or less standard in stone relief panels with some slight regional variations (Naiki 2019, 55). Communities of practice seem to extend across the different production centres in the Gandharan region. Craftsmen, it seems, had learnt to anticipate and work with the particular qualities and limitations of using schist. The fact that they used only a limited number of tools may be related to this. Buddhism itself may also have been a binding factor for the strong regional connections between communities. The highly standardized aspect of Gandharan stone relief panels, as it relates not only to the choice of material and technology, but also stylistic, iconographic, and functional properties (use in Buddhist architecture), points to a significant relationship between the monastic community and craft practice.

Similarly, the production sequence can also be compared on a global level with sculpting technologies and traditions from other regions. This would enable us to identify if knowledge and practice were also on the move along with objects, motifs and morphologies on a wider scale. If there is evidence of the reproduction of the whole operational sequence in sculptural production, it would point to the appropriation of the socially situated knowledge and practice. Conversely, if we are confronted with hybrid processes, different kinds of interactions and degrees of mobility emerge, where only some elements in terms of both technology and practice are appropriated. Dehejia and Rockwell argue that Gandharan stone-working practice was unusual: it was characterised by complex technological practices and a different conception of the relationship between sculptor, tool, and stone (Dehejia and Rockwell 2016, 239). Interestingly, Gandharan building and architectural techniques, despite differences, show elements from both Central India and Parthia (Rockwell 2006, 167)—attesting on the one hand, to the versatility of Gandharan stone masons

at appropriating and adapting techniques from different regions, and on the other hand, to the mobility of building technology across great distances. Yet, as our *chaîne opératoire* analysis reveals, when it comes to artistic technologies and operational sequence in terms of sculpting and carving, we see important differences in Gandhara from Indian as well as the Greco-Roman and Parthian production practices. In this sense, despite similarities in material culture in terms of style, form and even iconography, we do not necessarily see a complex transmission or appropriation of behavioural and cultural practices in terms of sculptural production technologies.

What are the implications of this? Does this mean that only motifs and morphologies were on the move, while technologies were locally developed and adapted in order to accommodate the new sculptural traditions? Is it because artistic technologies, in contrast to everyday technologies, are less mobile owing to their inherent mutability (Knappett 2020, 196)? Can we identify in these material connections, an intersection of shared practice and local differences, which come through in the production process of these essentially hybridized objects? Can we investigate communities of practice on the interregional scale?

The evidence of some type of long-distance transfer of certain artistic technologies (e.g. use of drill for finishing touches) does point to shared practices. Yet the use of lathe and burin reveals technical links between stone sculpting and indigenous local craft practices. The use of *Kharoshti* script for location markers also reflects a local production practice. However, before we are in a position to sufficiently answer these questions, we need to conduct more detailed case studies that focus on technologies and practice of sculptural production within Gandharan regional production centres, and also incorporate the diachronic dimension to track changes over time. Comparing these to the technologies and practices in Classical, Parthian and Indian worlds will allow us to trace the global mobility of knowledge and socially situated practice.

9. Conclusions

Past studies on Gandharan art have largely been embedded in taxonomic, iconographic and textual circularities, with little input from

theoretical frameworks such as materiality, phenomenological and cognitive concerns, globalization and network analyses etc., that are progressively being mobilized in archaeology, anthropology and art history. It is time to pose questions that build on these interdisciplinary theoretical and methodological frameworks, that simultaneously dismantle traditional narratives and open up new avenues of research. On the one hand, this paper endeavored to highlight the need for a theoretical intervention in Gandharan art history and archaeology. On the other hand, it has explored the question of how Gandharan art can be harnessed to the lived experience of people interacting with it, while all the time situating it in the global context as well.

A reorientation to materiality enables us to better ground our analysis in the social and cultural contexts that artefacts simultaneously created and inhabited. The focus on materiality through a reconstruction of ancient Gandharan *chaîne opératoire* also provides valuable insights into labour organization. The technology-based approach, itself a conduit to important questions and concerns about agency, choice, artisans, cultural context etc., opens modes of enquiry that may be built upon by scholars interested in questions of Gandharan architecture, energetics and economics. 'Globalization thinking' through material culture enables us to trace the cross-cultural interactions and transformations rendered through the mobility of objects, technologies and practice. Here, analytical frameworks such as hybridization, translation and network analysis emerging out of globalization thinking hold immense promise. The significance of integrating the material and global frameworks lies in their capability to accommodate multi-scalar analyses as well as to bring *agency* back into the discourse.

It is important to note that although these concepts were explored mainly from the perspective of production and practice in this paper, they are equally applicable in terms of reception and use. That does not automatically imply the viewpoint of the viewer, but also of the thinking and sensing bodies living and interacting with the finished Gandharan artefacts. As Tonio Hölscher reminds us, when it comes to artefacts or images it is not only about viewing or interpreting them, but also about "living with them and participating in the social situations in part determined by them" (Holscher 2018, 300). Therefore, whether it is the artisan painstakingly learning and working

with the affordances of schist, and in the process transforming it into intricate relief panels, or it is the circumambulating monk *seeing, touching, interpreting* and variously *engaging* with the figurative imagery carved in stone, both are part of the meaning-making process and practice. For it is within these networks of production and consumption practices that meanings of artefacts emerge (Knappett 2005).

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