Adaptation, craftscapes and knowledge networks: introductory remarks on historical ecology and state formation in southern Africa

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Introduction

The human condition in various parts of the globe dictated that since time immemorial, our species interacted with the physical environment in different ecological contexts. Such interaction gestated culturally and temporally specific knowledges that empowered human settlement in arid environments, temperate regions and even snow-covered landscapes. Because of its long-term perspective, archaeology is strategically positioned to explore not only technological and social innovations but also other adaptation strategies and knowledges deployed by humanity throughout the ages (Crumley 1994). In arid regions such as the broader Shashi-Limpopo basin of southern Africa, this places attention on the changing cultural (knowledge) and environmental contexts that shaped, and were in turn shaped, by the evolution of different farming communities that occupied the region from c. AD500 to 1900 (Denbow et al. 2008; Manyanga 2006). Here, speculative work previously suggested that climate change and aridity made communities highly vulnerable and susceptible to collapse (Summers 1960; Vincent and Thomas 1960; Huffman 1996). Not surprisingly, within select arid areas such as the Middle Limpopo Basin where some of the region's first state based societies emerged, climate change was assumed to have promoted the rise and collapse of such social formations (Huffman 2000). While a wet climate promoted the flourishing of human settlements, arid conditions were assumed to have precipitated their collapse. Such an argument however, downplayed humanity's capacity to develop new knowledge and improve on the old to adapt to changing climate over the short and long terms (Smith 2005; Manyanga 2006).

The genesis of this vulnerability argument can be traced to the environmental determinism of the 1960s when pioneer southern African archaeologists such as Roger Summers (Summers 1960) argued that drylands such as the Zambezi and Shashi-Limpopo-Save Lowveld, all of which are very hot, tsetse fly infested and receive less than 400 mm of annual rainfall were marginal and uninhabitable (but see Pwiti 1996; Manyanga 2006 for a critique). Within the context of capitalist agriculture, these areas were clearly not conducive to intensive rain-fed crop cultivation because of their aridity. Capitalist agriculture was however, never adjusted to learn from local knowledge systems of food production. Local agriculture was embedded within the local environmental and climatic shifts which provided food security to the inhabitants of these areas (Mabeza 2016). Other than inappropriate environmental reasons, these arid areas were also remote from newly established urban centres such as Salisbury (Harare), Bulawayo and Johannesburg where archaeologists were based. As such, for reasons to do with access, drylands such as the Zambezi Basin and the Shashi-Limpopo region were poorly archaeologically documented with the consequence that not many sites ended up in official site inventories and registers (see Manyanga 2006; Chirikure et al. 2014). This created the impression, albeit an inappropriate one, that such areas were marginal, tsetse fly prone and uninhabitable by pre-colonial agriculturalists (Summers 1960). And yet, the landscape was an open frontier where people interacted. Regardless of the nature of interaction and contact, a direct and indirect, active and passive exchange of knowledge took place through exchange of commodities, inter-marriages, warfare and even gifts. Because some of the earliest efforts at modelling the distribution of precolonial farming settlements (e.g. Sinclair and Lundmark 1984) used databases that had very few sites from the Shashi-Limpopo- Save and Zambezi basins, it was assumed that a lack of detailed surveys equated with an absence of human settlement in the past (see also Beach 1980, 1994). And yet, dedicated research by Pwiti (1996) and Manyanga (2001, 2006) identified many sites spread across the 2000-year farming community history in these so called marginal drylands (see also Denbow 1984; van Waarden 2012; Klehm 2017). What makes some archaeologists who were born and grew up in these areas uncomfortable is that the designation of drylands such as the Zambezi valley and the Shashi region as marginal landscapes was often made by archaeologists (Summers 1960) and ecologists (e.g. Vincent and Thomas 1960) without the consideration of how local people adapted and understood their landscape (see Manyanga 2006; Mabeza 2016).

While the drylands of Southern Rhodesia and Bechuanaland (Botswana) were viewed as marginal, the ‘discovery’ of Mapungubwe Hill near the Shashi-Limpopo confluence area in South Africa created a focal point for research into the Iron Age occupation of this dryland. Since the 1930s, the gold burials of Mapungubwe and the extensive midden at the nearby K2 captured the interest of researchers, both amateurs and professionals. However, in the absence of research in contiguous areas of Bechuanaland and Southern Rhodesia, cultural connections were made between widely separated sites such as Mapungubwe and Great Zimbabwe without considering the history of human settlement in the interstitial space (see Chirikure et al. 2013; Manyanga and Chirikure 2018 for critique). For instance, given the limited archaeological research coverage of the 1930s, unhelpful connections were made between Mapungubwe and Great Zimbabwe two places separated by a distance of close to 300 kilometres (see for example Fouché 1937). Because some of the excavators at Mapungubwe were the same as those at Great Zimbabwe, until the late 1970s, Mapungubwe was viewed as a peripheral settlement under the state based at Great

Zimbabwe (see Garlake 1973; Manyanga and Chirikure 2018). However, this was revised by Huffman (1982) who suggested that Mapungubwe gave rise to Great Zimbabwe. Researchers such as Robinson (1985) fiercely resisted this interpretation, which made connections between widely separated areas on the landscape without due consideration to evidence in between. The continuation of research on the South African side of the Shashi-Limpopo confluence area and post-independence emphasis on the conservation of drystone walled sites in Zimbabwe meant that the Shashi-Limpopo confluence area of South Africa, became an important place in the understanding of the evolution of socio-political complexity. Sites that were newly discovered in Botswana (e.g. Denbow 1984; van Waarden 2012) were interpreted using a framework that placed Mapungubwe at the centre of cultural developments associated with the Zimbabwe culture. As such, an opportunity was lost to cross the artificial colonially created borders to consider local dynamics across the broader Shashi-Limpopo region stretching from the Kalahari to the Indian Ocean (see Klehm 2017). To transcend this limitation, research was performed at selected sites in southwestern Zimbabwe at places such as Jahunda, Mapela, Little Mapela and Mananzve. These sites are located between Khami in the northwest and the Shashi-Limpopo confluence to the east. They have material culture and knowledges which suggests that their inhabitants networked and shared similar knowledge, with differences being explained by local contexts. Framed within the analytical lenses provided by historical ecology and locally centred approaches, the investigations aimed at generating new insights and to kick start a conversation on knowledge and adaptation strategies deployed by human beings who lived in similar ecological gradients, spread widely on the landscape. The expected outcome was a comparative database of information on early state formation and adaptation strategies in regions contiguous to the Shashi-Limpopo confluence area and beyond (see Manyanga 2006). In the process, this demonstrated that the Middle Limpopo was neither an oasis, nor and island separated from the broader world. It shared knowledge and values with other chronologically overlapping people who made what is now eastern Botswana, southwestern Zimbabwe and northern South Africa, home.

Definition of concepts: historical ecology, adaptation and craftscapes

How best can we understand southern African communities ‘on their own terms’? Assuming that we managed to do so, how might the outcome knowledge look like? Answering these questions requires a framework that speaks to local knowledge and knowhow in a holistic and integrated manner whilst acknowledging that the local is a mix of multiple influences, the external included. Traditionally and as elsewhere, archaeologists in our region tended to use ethnoarchaeology as a way to connect the past to the present. While useful, Gosselain (2016) provides an excoriating analysis of ethnoarchaeology which motivates for other ways of understanding local dynamics. This directs attention to historical ecology as a programme of knowledge production concerned with the interactions through time, between societies and environments, and the consequences of these interactions for understanding the formation of contemporary and past cultures, habitats, and landscapes (Crumley 1994; Bale´e 2006; Redman 2005; Lane 2011). Historical ecology is often concerned with how contemporary landscapes came into being and were shaped by changing human-environment interactions through time (Crumley 1994; Bale´e 2006; Redman 2005). In

multiple contexts, historical ecology offers a method and a theoretical lenses essential for integrating local knowledge with data sets from different disciplines to understand the long history of human-environment interaction (Lane 2011). In southern Africa, this means that oral traditions of land use, ethnographies of adaptation strategies, and documentary records of human-environment relationships can be integrated with archaeology's long term outlook to offer perspectives on how humanity responded and contributed to landscape and environmental change through time.

Different triggers – both social, cultural and environmental – have since time immemorial made humanity vulnerable to multiple internal and external shocks. In most cases, humanity was not passive in the face of risk: it adapted through time thereby achieving resilience (Crumley 1994; Redman 2005). Oral historical information, ethnographic observations, documentary sources and archaeological data show that the inhabitants of southwestern Zimbabwe deployed various adaptation strategies to cope with aridity in the area. Because the area receives low rainfall, the communities identified the necessity of properly understanding the agricultural season, and timing the cultivation of specific soil types with when the rains fell (Manyanga 2006; Nyamushosho 2017). They could alternate clay soils, loamy soils and sandy soils to spread the risk and ensure that they obtained a yield (Mabeza 2016). Furthermore, after the harvest, they had long term strategies of storing grain in underground pits and above ground containers plastered with clay mixed with insect repellent sap from trees (Mabgwe and Manyanga 2017). These grain bins could in some cases contain food to last three seasons of no rain. The communities in the Gwanda area also cultivated various flood plains for use as gardens in the dry season. Furthermore, they also turned to pastoralism and controlled tsetse flies using various indigenous techniques such as smoking the forests and forest clearance (see Mavhunga 2018). A combination of these strategies and inherent knowledges made the inhabitants of the Shashi region as broadly defined, resilient through time. Manyanga's (2001, 2006) work has documented an uninterrupted sequence of farming community occupation of the Zimbabwean side of the Shashi-Limpopo from AD700 up to the present. Similarly, Denbow (1984) and Mothulatshipi (2006) exposed a similar sequence in the adjacent regions of north-eastern Botswana which matches the sequence on the South African side. This contradicts earlier claims by Summers (1960) and those after him who designated this landscape as marginal for human habitation. What is even more important is that most communities in regions such as Gwanda and north-eastern Botswana have not been moved off their land by colonialism and as such have a long term intimate relationship with the landscape.

Crafts and technologies such as metallurgy and pottery were also important knowledges for developing daily life strategies. Consequently, the idea of craftscapes – which are landscapes where crafts and technologies were innovated, improvised and experimented with, is also critical in understanding long term adaptation in southwestern Zimbabwe (Chirikure 2017; Iles 2018). Drylands such as the Shashi region are also mineral rich: they host important resources such as iron, copper, and gold that were worked pre-colonially at sites such as Jahunda (iron, copper and bronze), Mapela (iron, copper, bronze, zinc) and Khami (gold, copper, bronze, tin, iron) (Bandama et al this volume). Such communities could exchange iron and copper for agricultural produce thereby achieving insurance against agricultural failure. This often made these areas important nodes in networks of

knowledge and interaction that connected various areas in the region and beyond (see Bandama et al this volume; Fredriksen and Bandama 2016). Iron was also used to make implements for hunting that made collecting food and resources such as ivory from the bush easier (de Luna 2016). The resources from the bush were also traded and exchanged to meet various needs including managing risk to achieve food security. Therefore, the landscape was a craftscape where various interventions, technological, social and otherwise were deployed to achieve long term resilience.

Historical ecology and its elements such as adaptation and craftscapes provides explanations for the source and role of change in adaptive systems, particularly the kinds of change that are transforming (Redman and Kinzig 2002; Gunderson 2000; Manyanga 2006; Lane 2011). In 2014, Shadreck Chirikure, Per Ditlef Fredriksen and Munyaradzi Manyanga secured funding for a collaborative project entitled Historical ecology of the Shashi Limpopo region of southern Africa through the South Africa-Norway Cooperation (SANCOOP). The project aimed to develop a long-term perspective on how human beings sustained a living in the drylands to the northwest of the Shashi-Limpopo confluence area to generate comparative datasets. The project collected historical information on land use and adaptation strategies. Archaeological and oral historical surveys located traces of settlements, crafts, and other socio-economic activities from Mapela in the south to Khami in the northwest. In the Shashi region of Gwanda, excavations were performed at Mapela Hill (Chirikure et al. 2014), Little Mapela (House 2016), and Mananzve (Nyamushosho 2017) and generated exciting artefactual and chronological evidence with huge potential to enhance our understanding of communities that lived-in the broader Shashi region. Additional comparative work was carried out at Khami World Heritage site (Mukwende 2016; Dyvart 2016). The archaeology of these sites shows that at different points in time, communities resorted to different season specific adaptation strategies such as flood plain agriculture, cultivating crops on different soils, and the production of metals as insurance against agricultural failure as well as hunting and gathering. This is a theme that runs through all the contributions in this volume. Not surprisingly, this vast area hosts traces of human activities and supported societies at various levels of socio-political organization including early and historical states. This suggests that state formation in southern Africa must be understood within the mosaics and knowledges shared within the broader region and not just the Shashi-Limpopo confluence area. As such, there is need to move beyond the Shashi-Limpopo centric discourse on early state formation, and in the process mint less colonial histories by considering how various communities lived successfully in arid but resource rich areas now making up northern South Africa, southwestern Zimbabwe and north-eastern Botswana.

Historical ecology and concept revision: what are drylands and margins?

One of the most interesting observations about the Shashi region is that it is currently described as a dryland and as marginal for rain fed agricultural production (Vincent and Thomas 1960). And yet, evidence from the literature and from our own archaeological work has identified a successive history of occupation by various communities. A question that however springs to mind is: what is a margin and who defines a margin? A literal definition suggests that a margin is an area of low productivity that is often harsh and not conducive to human settlement. Our

archaeological work, interviews and engagements with local communities in and around Mapela, Jahunda and Mananzve exposed very useful insights (Fredriksen *and Bandama forthcoming*). The communities have a deep understanding of their environment and make decisions and choices based on their local knowledge. For example, this region produces some of the best cattle and goats which are sold as and when necessary. Furthermore, there is a great deal of scheduling of season specific activities which makes the communities cope with whatever challenges of the day. The communities also grow sorghum and millets, taking advantage of their nutritional and drought resistant characteristics. The nutritional value of these traditional crops is far much better than that of maize which is now the staple in many areas. At the end of one community engagement, we asked the then local member of parliament (MP) why he has not considered moving elsewhere in response to the aridity and erratic rainfall (Nyamushosho et al this volume). His response was that the Shashi region had very high levels of productivity in terms of cattle and other resources such as gold. The MP argued that they refused to be resettled by the government because of the wealth in their area. This discussion unequivocally shows that the definition of a margin like that of a drought, is context and culturally specific. A margin to an outsider is not the same thing as a margin to an insider such at Honourable Mlilo. In fact, it is mostly ecologists and archaeologists who labelled drylands as margins, mostly without fully understanding why such areas have hosted successive populations in deep and recent histories.

Extended into the deep past, the fact that human beings 'have always made a plan' explains why drylands such as the Shashi and Zambezi regions have successfully hosted farming populations throughout the first and second millennia AD. The Zhizo, Leopard's Kopje, Khami and Great Zimbabwe farmers all made this area home just as their contemporaries occupied the Middle Limpopo Valley. This suggests that archaeologists must invest more towards understanding knowledge and adaptation strategies deployed by people in the past before either labelling their homes as margins or depicting the inhabitants as always having been at the mercy of climate change. This is essential because climate change and aridity were no barriers to human occupation of drylands. The outcome of such an approach shows that adaptation strategies hitherto only associated with the Shashi-Limpopo confluence (e.g. floodplain agriculture) were more widespread and shared than previously assumed. In fact, it is common knowledge that most farming community sites of the first millennium AD were located on floodplains demonstrating continuity in practice moderated by local specifics (see Pwiti 1996; Mitchell 2001; Phillipson 2005). This requires new research and interpretive frameworks that locate agency and casualty within the broader region and not at fixed points on the landscape (see Chirikure et al. 2014; Klehm 2017).

Historical ecology and multi-linear evolution of state formation in southern Africa

The location of Mapungubwe in a dryland similar to other regions designated as margins motivated for explanations why it and no other ecologically similar areas hosted successful civilizations in the past. Huffman (1996) argued that between AD900 and 1300, the area around Mapungubwe experienced favourable climate which supported floodplain agriculture. This favourable climate deteriorated after AD 1300, precipitating the collapse of Mapungubwe after which the inhabitants of Mapungubwe migrated northwards and southwards. While no studies

are yet to be performed on the climate change in other contiguous drylands, Smith (2005) suggests that climate may have been wetter during the time that Mapungubwe is assumed to have collapsed. This observation is supported by a re-appraisal of the archaeology of the Shashi-Limpopo region that shows that this area was never abandoned, and actually witnessed the arrival of new groups such as the Sotho-Tswana speakers at the same time that the environment is assumed to have deteriorated (see Manyanga 2006; Mothulatshipi 2006). Continuity in occupation by similar groups and an influx of new people shows that humanity always adapted which is why it stayed on the landscape whatever the climate was.

For so long, one of the 'myths' that still remains unchallenged is that the Shashi-Limpopo confluence area sustained populations during the flourishing of Mapungubwe because of floodplain agriculture (see Huffman 2000; Hannaford et al. 2016). It is believed that during floods in the rainy season, the confluence of the Shashi and Limpopo rivers creates a dam that backs up the Kolope river, creating a floodplain that was cultivated after the floods had receded in a way that resembles the Nile Valley (Huffman 2000; Hannaford et al. 2016). This analogy however invites an evaluation of the agricultural cycle in this summer rainfall region of southern Africa. Here, the rainy season starts in October and stretches all the way to April or May. In between, there may be episodes of no rain. Everything being equal, the planting of crops takes place in the first part of the rainy season (October to December) but locals often plant crops in different soil types based on the timing of the rainfall. For example, heavy clay loamy soils are only planted when rains fall at a specific time (Mabeza 2016). Also, often the planting is timed with first rains, intermediate rains and late rains. This risk management strategy is aimed at ensuring that regardless of periodic lack of rain during the agricultural season, some crops will be harvested. Local knowledge and recent weather patterns indicates that the flooding of the Shashi and Limpopo rivers takes place between late December and March when most of the rains fall. However, this is after the planting season and when plants are supposed to be maturing. While the floods start to recede from March onwards, this is also the time that harvesting starts (lasting from March until May or June). Subsequently, preparations for the next agricultural cycle begin. For example, the rain calling shrine of Njelele in the Matobo is opened for celebrations of harvest and so on (Chirikure et al. 2017). Meanwhile, the end of the agricultural season often resulted in cattle being allowed to roam, grazing on plant remains in the fields. In terms of scheduling, letting cattle roam released labour for other activities such as mining, hunting and so on. What this knowledge suggests is that even if the Kolope floodplain was suited for agriculture, the benefits of flooding were only realised too late into the agricultural season to exploit its advantages. It may be possible that the flood plain was cultivated from late August and early September in a way *dambos* were farmed in other areas (Mabeza 2016). However, no empirical studies have been done to study the moisture retention qualities of the soils in the floodplain to determine if it could sustain the critical stages of planting, flowering and maturation of the plants after the end of the rain season. Without this knowledge, the assumption that the Shashi-Limpopo confluence area resembled Pharaonic Egypt which was sustained by the Nile floodplains (e.g. Hannaford et al. 2016) remains hypotheses that require empirical testing. From a logistical point of view, the confluence is a very good 10 kilometres away from Mapungubwe making it difficult for its inhabitants to shuttle to and from the fields on a daily basis. So far, no evidence for temporary agricultural camps or gardens has been found in the area, further placing the applicability of the Nile valley analogy into doubt. Manyanga's (2006) work

on the Zimbabwean side of the Shashi-Limpopo river and Smith's (2005) work in the Tuli Block of Botswana identified long term adaptation strategies that were adopted by inhabitants of this area from the late first millennium AD to the present. These include cultivating along floodplains of rivers in the areas, growing crops in *vleis* and *dambos* and taking advantage of different microclimates. These strategies and embedded knowledges are by no means unique to this area - since the first millennium AD, communities in southern Africa were building their homes along rivers to take advantage of floodplains and to have easy access for water and animals. Amidst localised innovations, this shows continuity of adaptation strategies through time.

Floodplain agriculture or no flood plain agriculture, a look into the broader landscape locates archaeological sites such as Mapela and Little Mapela that boast of continuous occupation from AD900 to after the presumed collapse of Mapungubwe in AD1300. Other sites in the region such as Mananzve, Mtanye, Jahunda and many others have similar evidence just as Bosutswe in Botswana. This brings in a very interesting environmental dynamic: a critical review of the physical environment in the Shashi-Limpopo confluence area and the broader Shashi region to the southwest and northwest shows striking similarities. The broader region receives annual rainfall of 400 mm or less and is dominated by mopane woodlands. The inhabitants of the area practice floodplain agriculture along major rivers such as Shashi, Tuli, Umzingwane and among others like Ngezi (Mabeza 2016). Therefore, from physiographic and climatic points of view, there is nothing much that separates the Shashi-Limpopo confluence area from the other regions to the northwest and southwest (see also van Waarden 2012; Denbow et al. 2008). This suggests as others have pointed out before (e.g. Manyanga 2006; Mothulatshipi 2006), that if climate change was the determining variable, then the record of continuous occupation that is attested in the broader region ought not to be there. In any case, the Mapungubwe area was never deserted because of climate change.

These weaknesses in some of the more established positions and the presence of poorly studied sites in the broader Shashi region and lands further to the west and northwest showed that from a long-term perspective successive communities at various levels of socio-political organisation variously sustained themselves through time. With calls for decolonized knowledge (Schmidt and Pikirayi 2016) and concept revision (e.g. Chirikure et al. 2017) becoming increasingly louder in the global south, more significance is now being attached to the local context and the embedded local ways of knowing in building interpretations about the past. This is essential to ensure that archaeological reconstructions are aligned with local meaning and understanding (see Chirikure et al. 2017). Such an approach highlighted the existence of polities at Mapela and Jahunda that possess attributes similar to those of the chronologically overlapping site of Mapungubwe. This demonstrates the emergence of early states in our region was polycentric. This finding has resonance with other world areas such as the Americas where old approaches assumed that there was one big Maya state. And yet, more research exposed that there were multiple Maya states.

What are the implications of having coeval but widely spaced communities on the landscape with similar cultural attributes on our understanding of state formation and existence of social networks? As a follow on, does the model of a single empire of Mapungubwe and capital of Mapungubwe controlling the vast broader Shashi Limpopo basin best fit the data? Clearly, the research at Mapela, Jahunda, Mananzwe and many other places such as Mupanipani

in Botswana shows that this was not the case (see van Waarden 2011; Chirikure et al. 2016). In fact, Chimhundu (1992) suggests that the size of states in southern Zambezia was likely smaller than older frameworks imported from elsewhere seem to suggest (see also Beach 1994 for similar conclusion). In this regard, Mapungubwe was one of the many polities that emerged in southern Africa in the early second millennium AD. While some collapsed, others persisted while continuous processes of fission and consolidation created different historical entities. This also explains why even the southern African historical record from the 16th century onwards does not mention the presence of only state in the region which collapsed for others to emerge. Rather, at any given point in time from the late first and early second millennium AD, there were many competing and possibly cooperating entities. For this reason, the rise and flourishing of early states in the Shashi region was multi-linear.

Khami World Heritage site: material culture, chronology, δ13C and δ15N isotopes, environment and food culture

The World Heritage site of Khami is comprised of multiple platforms on which houses were built. These interspersed platforms were surrounded by settlements on flats. Since the inception of detailed professional work at Khami, no detailed work targeted the unwalled settlements at the site. Consequently, it was not clear how occupations on the flats related to the platforms. The contribution by Mukwende and colleagues for the first time reports in detail the chronology and material culture of such areas. The work finds no major differences in the nature and distribution of material culture between flats and platforms. Overall, the terminal dates from the excavations reach convergence with historical data which suggests that Khami was abandoned around the mid-17th century. Is it possible to use the distribution of animal body parts as a proxy for class and status? As a follow on what was the environment like during the flourishing of Khami? These questions are addressed in the paper by Dyvart and others. Standard approaches to animal bone from platforms and platform-less settlements were combined with isotopic (δ13C and δ15N) studies. The results showed no differences in the age of animal consumed as food in the two areas. This suggested that animal culling expressed through the exploitation of young animals in different areas was most likely an outcome of practical necessity rather than as a consequence of hierarchical predisposition. The isotopic evidence suggests the presence of favourable and consistent rainfall regimes optimal for stock keeping and agriculture from the initiating phase of habitation at Khami until the 1600s.

Southwestern Zimbabwe craftscapes: metallurgy, values and networks

As broadly defined, the Shashi region hosts important mineral resources that include iron, copper, and gold. The inhabitants of places such as Mapela and surrounding areas smelted iron in quantities that suggest consumption beyond local needs. In fact, the Zhizo site of Nyambi Hill is a large iron smelting village that covers by rough calculation more than two hectares of slag, broken tuyeres and remnant furnaces. While iron smelting sites are very common on the southwestern landscape as broadly defined, excavations at Little Mapela, Jahunda, and among others Khami yielded finds of copper based wires which were coiled around a vegetal core to produce bracelets and necklaces. The copper based decorative ornaments from Little Mapela and Jahunda were selected for a detailed

technological and sociological study because copper and tin ores do not exist naturally in these areas. This suggests the existence of networks for transferring commodities, knowledge, as well as meanings and values from raw material sources to consumers and between consumers in down the line exchange from source areas. Archaeometallurgical studies exposed a high frequency of tin bronzes and few unalloyed copper objects at Jahunda with the reverse being typical of Little Mapela. The Jahunda tin bronzes predate those at places such as Mapungubwe, which in the absence of research on the broader landscape were traditionally assumed to the earliest in hinterland southern Africa. Rather than being the earliest, Jahunda bronzes simply reflect that this alloy was commonly used on the landscape more than the traditionally limited research had allowed archaeologists to imagine. Pure copper and bronze have different colours which appeals to different senses, values and contexts which may have motivated their differential utilisation at the two sites. Because there are no known sources of tin in this area, the implication is that this metal was sourced through networks of exchange and trade in southern Africa from various source areas. One of the potential candidates is Rooiberg located at least 300 kilometres south of the Shashi region. Copper would have been sourced from north-eastern Botswana, Musina and other places. The fact that decorative objects were made of copper wires that appear standardised in cross section and appearance suggests that there existed a wider network of knowledge transfer within various communities. Thus, while the ornaments are small objects, they attest to bigger ideas circulating in society and transfer of values at multiple but nested scales.

Conclusion

In conclusion, the region of southwestern Zimbabwe, like adjacent areas of South Africa and Botswana is dry and arid. Traditionally, the area was viewed as marginal and unsuited for occupation. However, research has demonstrated that it is not the aridity that matters: rather it is the adaptation strategies deployed by humanity to enjoy their life. The documentation of Zhizo, K2, /Mapungubwe, Khami and other ceramics shows that this region was continuously occupied by farmers from the mid first millennium AD to the present. The presence of stone walled sites with glass beads, *dhaka* floors and other categories material culture at Mapela, Little Mapela, Mananzve, Jahunda shows the presence of multiple places on the landscape with similar attributes of state formation. Various adaptation strategies were also deployed which ensured sustainability through time. Consequently, labels such as ‘marginal’, drylands and so on do not mean much when used without a consideration of local knowledge and strategies. Once this is achieved, it becomes clear that the Middle Limpopo valley where K2 and Mapungubwe are situated lacked some of the resources that were abundant in areas further afield. The inhabitants of those places were not docile: they developed a battery of innovations and improvisations which enabled them to form states, produce metal and work metal and to network with others. This shows dynamism of practice across space and time.

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