

### The Origins and Spread of Pastoralism in Southern Africa

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### Summary and Keywords

Pastoralist societies arose in the arid and semi-arid western regions of southern Africa over the last 2000 years. These were both Bantu-speaking and Khoekhoe-speaking groups who practiced diverse combinations of carnivorous and milch pastoralism but also maintained some dependence on hunting and gathering, with varying but generally minimal reliance on agriculture. Historical sources provide many insights into pastoral culture and husbandry practices, but archaeological and ethnographic evidence is critical to the understanding of precolonial pastoralism. Most research has concentrated on the Cape Khoen, but increasingly, a broader view has come to include archaeological and ethnographic evidence from other parts of the region, casting new light on the origins and growth of pastoralism in southern Africa.

Keywords: southern Africa, pastoralism, hunter-gatherers, social organization, husbandry

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## Background to Southern African Pastoralism

About 2000 years ago large-scale population movements brought the first farming communities into southern Africa. One major migration route followed the eastern Rift Valley before spreading outward south of the Zambezi River, where it was joined by a second, western stream. These Bantu-speaking peoples practiced a mixed agricultural economy based on cereal crops and livestock, including cattle, sheep, and goats. The arrival of a new population and the increasing dominance of food production had profound consequences for a regional social landscape that had until then been the exclusive domain of groups ancestral to historic and mainly Khoekhoe-speaking<sup>1</sup> hunter-gatherers.

Cereal cultivation is dependent on reliable summer rainfall, however, and this restricted settled farming mainly to the eastern side of the subcontinent.<sup>2</sup> In the west, marginal rainfall conditions served to shift the balance of economic emphasis toward livestock production. Some farming communities established centers of agricultural settlement, while also keeping livestock at distant outposts beyond the limits of rain-fed agriculture, thus maximizing their ecological opportunities.<sup>3</sup> Fully pastoral groups, with minimal reliance on agricultural products, arose in the more arid parts of the interior and in the hyper-arid

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west. Semi-nomadic pastoralists in southern Africa included both Bantu-speaking groups and Khoekhoe-speaking pastoralists, who emerged from a long process of cultural and genetic interaction (see figure 1).<sup>4</sup>



*Figure 1.* Southern Africa, showing the approximate western limits of rain-fed agriculture (broad gray line), with major physiographic regions and ethnic groups mentioned in the text. Key archaeological sites mentioned in the text are numbered as follows: 1. Toteng; 2. Toutswe; 3. //Khauxa!nas; 4. Kasteelberg; 5. Boomplaas. Author diagram.

European settlers arriving at the southern tip of the subcontinent in the mid-17th century encountered a complex mosaic of Khoekhoe-speaking communities, with wealthy pastoralists at one end of a continuum and apparently impoverished beachcombers at its opposite end. The distinctions between these groups were sometimes unclear, as the colonists attempted to establish formal trading relations with herders who were generally reluctant to part with their animals. Relations deteriorated, conflict ensued, and within little more than a century the last remnants of the pastoral Khoen had moved deep into the interior, beyond the frontier of the Cape Colony.<sup>5</sup>

Khoen pastoral society in the Cape disintegrated before European colonists were able to gain more than a superficial understanding of it, and historical descriptions, which are nearly all that remains, provide very limited insights into Khoen social customs and herding practices. This is a stumbling block to the work of historians and archaeologists. Beyond the Cape, in what is now Namibia, pastoral communities presented a more determined and effective resistance to colonial settlement, mounting a series of protracted insurrections.<sup>6</sup> Indeed, the last remaining traditional pastoralists in southern Africa still occupy the remote northwestern parts of Namibia.

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The paucity of detailed ethnographic descriptions from the earliest moments of contact has meant that understanding of pastoral society on the Cape is heavily reliant on archaeological evidence. A significant concentration of archaeological research in this part of the subcontinent has, however, resulted in a Cape-centered view which does not provide a representative basis for a regional appreciation of pastoralism as one of the most important economic developments in precolonial southern Africa. Moreover, an abiding emphasis on technological, artifact-centered evidence has characterized an approach that pays relatively little attention to social and ecological aspects, which are equally critical to a general understanding of this phenomenon.<sup>7</sup>

## African Pastoralism

Most African pastoralist societies practice a combination of carnivorous and milch herd management. Dairy animals are generally kept on reserve grazing in the vicinity of the homestead, while the greater part of the herd is driven to more distant pastures, usually under the care of young men. Milking and the processing of milk is usually the preserve of women. Bleeding of cattle as a source of nutrition is a specialized East African practice. Herds are universally owned and managed by family groups with complex alliances and stock loan systems forming a web of relationships that provide an effective means to offset risks of disease, raiding, and the patchiness of pastures.<sup>8</sup>

As an arid-zone strategy, pastoralism in Africa is primarily limited by the availability of grazing within reach of water. Access to water is necessarily dependent on access to pastures, and grasslands beyond reach of permanent water can only be exploited when ephemeral rainwater catchments are available. Due to the considerable watering requirements of cattle, communal wells are a common feature of the pastoral landscape. Sheep and goats require less water and have a more adaptable feeding pattern, the latter being primarily browsers and therefore able to exist in marginal environments where cattle would not survive.<sup>9</sup> The combination of large and small stock reflects local conditions, although wealthier cattle owners generally dominate optimal pastures, with poorer small-stock herders occupying marginal areas.<sup>10</sup>

Nomadism in the strict sense is not a feature of African pastoralism. The regulation of access to pasture and water has almost universally imposed a form of semi-nomadism involving the use of relatively permanent homestead sites, located in areas of dry-season grazing and near to reliable sources of water. Homesteads are occasionally abandoned under conditions of prolonged drought, which may require the family to move, usually to an alternative site within its landscape of social alliances. Catastrophic loss of livestock due to drought or other causes can reduce a wealthy pastoralist to poverty, with the sole prospect of serving a more fortunate or strategically adept owner as a client herder. Successful owners also generally engage client herders when their stock exceeds the labor capacity of the household, a limiting factor in many instances.

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A common misconception regarding African pastoralism concerns a reputedly ingrained reluctance to slaughter livestock. In reality, pastoralism is not viable without regular and judicious slaughter, which is undertaken for consumption purposes and to create an optimal ratio of male to female animals. Under natural conditions the birth ratio of nearly all ungulates approximates 1:1; by slaughtering surplus male livestock, pastoralists will aim to achieve a more advantageous sex ratio of 1:30, thus ensuring the highest possible reproductive potential of the herd. Enhanced reproductive potential greatly improves the possibility of herd recovery following episodes of disease, drought or raiding. Under optimal conditions a rapid increase in herd size may lead to marked expansion in the geographical range of pastoral groups.<sup>11</sup>

In general, African pastoralism entails extensive, mobile land use, combining the use of short-lived annual pastures and relatively fixed points of settlement based on reliable water sources within grazing distance of pastures that are either perennial or susceptible to management as dry-season reserves. The geographical extent of movement, as well as the sustainability of grazing patterns, are subject to local environmental conditions and limited by the vicissitudes of rainfall. The adaptive resilience of this system depends not only on ecological conditions but on a combination of family-level ownership and higher-level sib-based alliances of loosely related families which usually govern pasture and water management within a segmentary lineage system providing for levels of unity and cooperation based on common descent.

African pastoralism has relatively few distinguishing material cultural traits, and the technology of herd management exists mainly in the realm of customary practices and ecological knowledge rather than in the use of specific artifacts that are exclusive to pastoralism. In an archaeological sense, therefore, African pastoralism is characterized by the material expression of social arrangements and land-use practices rather than diagnostic assemblage items. For this reason, African pastoralism is sometimes pessimistically described as invisible to the archaeologist.<sup>12</sup> The challenges of identifying the presence of pastoralists on the archaeological landscape are particularly apparent in the case of the Cape Khoen, addressed in the next section.

## The Archaeology of the Cape Khoen

In the southern and western Cape of South Africa, including the coastline and the adjacent interior Karoo drylands, archaeological knowledge of the last few millennia is based mainly on the results of excavations in rock-shelter sites and coastal shell middens. These investigations have yielded a detailed picture of hunter-gatherer adaptation and settlement, involving subsistence strategies to exploit a wide range of marine and terrestrial resources, in an environment characterized by seasonal availability especially of plant foods. Hunter-gatherers evidently practiced a mobile way of life and used a specialized microlithic technology, with an array of snares, hunting nets, and other tools including the bow and composite poisoned arrow, used to bring down prey ranging in size from

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small antelope to large animals such as the giraffe. There is also abundant evidence from rock art of ritual practices based on a belief in supernatural causality.<sup>13</sup>

Archaeological evidence has added considerable texture to accounts of hunter-gatherers by early European visitors and colonists. In contrast, there is relatively little evidence that serves unequivocally to identify the pastoralist communities described in the same sources. Pastoralists were highly mobile (see figure 2) but instead of using fixed sites such as rock shelters, they occupied open-air encampments of huts constructed from reed mats covering a light wooden framework that could be disassembled and transported on the backs of oxen. While rock shelters and coastal middens are enduring features, often with well-preserved and stratified occupation sequences, pastoral encampments were relatively ephemeral and in large parts of the Cape the landscape in which they were situated has been transformed by modern agriculture and urban expansion, obliterating the archaeological record.<sup>14</sup>

In these circumstances, archaeologists in the Cape have depended to a large degree on the historical record to provide a general description of Khoen pastoralism. The evidence of rock-shelter excavations has been viewed as a reflection of hunter-gatherer settlement, the two being seen as relatively distinct components of the cultural landscape. Many rock-shelter sites, such as Boomplaas, have yielded evidence of domestic sheep, sometimes found together with pottery.<sup>15</sup> Conventionally, these are treated as *fossiles directeurs* of pastoralism during the last 2000 years. Since their archaeological context was indistinguishable from that associated with hunter-gatherer occupation, they were thought to reflect the acquisition of sheep and pottery by exchange or through raiding, as suggested by some historical sources. Some archaeologists have favored a paradigmatic distinction between hunter-gatherer and pastoralist, based on a culturally essentialist interpretation of ethnographic sources to the effect that hunter-gatherers were unable to adopt pastoral values of ownership due to their fundamental cultural commitment to egalitarianism.<sup>16</sup>

At the archaeological level, this distinction was supported by the evident fact that the acquisition of pottery and livestock was not accompanied by any important material cultural changes in stone artifact technology or in the continuing reliance on hunting. The assumed separation of hunter-gatherer and pastoralist seemed to be supported by the evidence of rock art which appears to show that hunter-gatherer populations in the Cape and more widely in southern Africa formed part of a single ideological tradition based on egalitarian values. Notwithstanding difficulties in the dating of the rock art, a general view emerged according to which a canon of hunter-gatherer beliefs remained virtually unchanged over time, showing only minor adjustments in recent colonial history.<sup>17</sup> Consistent with this essentialist notion is the argument that Khoen pastoralists had a distinctive rock art tradition, and that its distribution marks the routes of their migration as a separate people arriving in southern Africa approximately 2000 years ago.<sup>18</sup>

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Figure 2. Kora-Khoikhoi preparing to move to new pastures, Samuel Daniell 1805. Aquatint by Samuel Daniell, 1805. Permission-free image.

Recent reappraisals of the archaeological evidence suggest that pastoralism spread through the subcontinent not only by migration of fully pastoral communities, but also through a diffusion process in which hunter-gatherers acquired livestock by serving pastoralists as client herders, so becoming absorbed into the expanding and increasingly dominant pastoral economy. The notion of hunter-gatherer ideological conservatism is no longer considered as a barrier to social and economic transformation. This shift in thinking is, however, not based on new evidence from the Cape indicating that hunter-gatherers were receptive to innovation; it is instead a reasonable scenario, given the lack of evidence in support of the previous view. In the context of 1st-millennium CE hunter-gatherer occupation, the evidence in hand remains very largely of pottery and sheep, and there has been limited progress toward reliable identification of fully pastoral settlement during the last two millennia.<sup>19</sup>

At several sites in this region there is evidence in the form of dung accumulations which implies that the early acquisition of sheep by hunter-gatherer groups formed the basis of a nascent pastoral economy which endured through the first millennium CE.<sup>20</sup> Sites with major concentrations of livestock bone such as Kasteelberg also show a continued reliance on hunting, in this case of fur seals (*Arctocephalus pusillus*). There are indications that the adoption of livestock involved a shift in the relative importance of some elements of stone artifact technology as possible diagnostic evidence of pastoralism. Some archaeologists in the Cape region believe that hunter-gatherer and pastoralist occupation can be distinguished on the basis of evidence such as changes in the diameter of ostrich-eggshell beads and in differences between stone tool assemblages,<sup>21</sup> but without an independent demonstration of the presence of pastoralism, such trends are circumstantial rather than definitive evidence.

A persistent difficulty lies in the reliable identification of domestic livestock. Sheep in particular fall within the same size range as a number of wild ungulates, and bone assemblages and species-diagnostic skeletal elements are often absent from archaeological samples. Moreover, the particular breeds of sheep and goat described by early European

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settlers were later displaced by cross-breeding for the purposes of stock improvement, which commenced early in the colonial era. This has had a marked effect on the morphology and size characteristics of animals derived from ancestral populations. Such variation can affect the reliability of osteological identification, introducing an uncertainty that can only be resolved by genetic characterization of key specimens. The problem of livestock identification is further exacerbated by the highly fragmented nature of bone assemblages as well as by taphonomic processes such as the modification of bone to manufacture tools and the removal of bone by scavengers. In these circumstances it is important to note the value of genetic techniques in the identification of key specimens.<sup>22</sup>

It has been suggested that evidence of early Khoen pastoralist settlement at the Cape remains elusive for the simple reason that until the 2nd millennium CE, pastoralism as found in early historical descriptions did not exist in this region.<sup>23</sup> This hypothesis holds that the Cape Khoen of documented history only arose in the 2nd millennium CE, by a combination of local economic transformation among hunter-gatherer groups and further southward expansion of fully pastoral communities. This would account for the evident bias toward early indications of pastoralism and introduces a possible scenario in which the Khoen pastoralists described by early visitors to and settlers at the Cape represented a rapidly evolving indigenous economy. The wealth in livestock attributed to historical Khoen pastoralists may therefore reflect an economy that had recently expanded, with the landscape so extensively occupied that hunter-gatherers and pastoralists who had lost their livestock were pushed to the periphery. This would also allow for the possibility that pastoralism in the Cape as described by early European settlers represented a response to contact rather than a glimpse of pre-contact pastoral society.

A recurrent theme of early historical accounts is the reluctance of Khoen herders to part with their livestock, most especially breeding animals. Persistent difficulties in securing sufficient livestock to resupply ships calling at the Cape settlement contributed to the rise of settler ranching enterprises.<sup>24</sup> These encroached on Khoen pasture areas and resulted in open conflict, the so-called Khoen Wars which the pastoralists waged against the Dutch in the late 17th century, and in which it appears that the Khoen were able to act in concert to oppose a common foe, thus demonstrating a fundamental characteristic of segmentary lineage organization. The general absence of centralized authority among the Khoen during times of peace meant that settlers were obliged to negotiate multiple trading agreements with individual and independent stock owners. To simplify and expedite procurement, the Dutch authorities attempted unsuccessfully to impose a form of artificial chieftainship on the Khoen by identifying compliant and politically ambitious individuals, who were given chiefly regalia.

The extent to which the Dutch colonists understood Khoen pastoralism is uncertain, but they would have surely appreciated that maintaining breeding stock was fundamental to Khoen herd management and cultural survival. The Khoen would also have understood that if the Dutch acquired breeding stock they would eventually become competitors for the same pastures, without being subject to the kin-based alliances which formed the loose regulatory framework of Khoen society. These alliances were essential to the man-

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agement of communal resources and although such groups based on descent and filiation are inherently hierarchical, chiefly authority is a potential rather than necessary feature of social organization. Indeed, as Khoen society disintegrated in the 18th century, it was characterized by small kin groups who lived as the vassals of European settlers.

## Beyond the Cape Frontier

The retreat of Khoen pastoralists toward the north and the Orange River frontier brought them into a zone of near-permanent conflict and lawlessness. This led to the rise of a pastoral economy based on cattle raiding to feed the burgeoning livestock demand at the Cape. Cape Khoen at the frontier were to an extent encapsulated within settler society and when they spread still further north beyond the frontier, they had become a people familiar with the use of firearms and horses, and who were partially literate and at least nominally Christian. Thus, the vanguard of colonial expansion into what is now Namibia was an amalgam of traditional Khoen society and the evolving settler economy, giving rise to the soubriquet *Oorlam*, or “knowledgeable people.”<sup>25</sup>

Due to the extreme aridity of southern Namibia and the predatory nature of the raiding economy, the Oorlam moved steadily northward, eventually mounting cattle raids into southern Angola, 2000 km north of the Cape market. Their initial settlements were within reach of the frontier and therefore vulnerable to reprisal by colonial settlers. A short-lived center at //Khauxa!nas was an elaborate walled settlement which incorporated elements of colonial construction such as drainage holes and rubble-filled walling. The layout of the site also expresses the social relations of seniority and hierarchy in the kinship group of the clan; it thus combines elements of both traditional and colonial culture. The Oorlam became a social class of increasingly Europeanized Khoen, subsuming traditional Nama communities, who continued to live in much the same way as the precolonial Cape Khoen.<sup>26</sup>

Archaeological evidence shows that, as in the Cape region, pottery and domestic sheep were present in the arid to semi-arid interior of southern Africa approximately 2000 years ago. However, evidence from the Namib Desert adds several new aspects to the archaeology of this pastoral innovation. Sheep bones were used in ritual assemblages, and the rock art shows a marked elaboration in style and technique, which centers on the rise of specialist shamans.<sup>27</sup> During the 2nd millennium CE, specialist shamans were involved in rainmaking, and the acquisition of metal and other non-local objects and materials suggests that these services were performed for wealthy pastoralist communities expanding into the region from the east.

A further important development shown in this rock art is the adoption of men’s and women’s initiation, indicating the emergence of a complex syncretism in which concepts and cultural metaphors of hunter-gatherer ritual traditions were combined with the material culture and social practices of food production. Men’s initiation was based on circumcision and the idiom of *mankala*, a game of skill introduced via immigrant farming communities and used to inculcate male values of strategy, guile and mental agility through



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the metaphor of livestock control.<sup>28</sup> Women's initiation inculcated values of social cooperation in the context of the harvesting, processing and storage of wild grass seed, an innovation that depended on the widespread use of pottery. These developments clearly show that the hunter-gatherer cultural response to the introduction of livestock was not merely a process of technological acquisition but involved a fundamental social and ideological shift.<sup>29</sup>

Rock art showing an ideological response to the introduction of livestock provides a nuanced appreciation of the shifting social landscape inhabited by hunter-gatherers and pastoralists during the last 2000 years. Conventionally, undated rock art showing sheep and cattle is cited as evidence in support of a pastoral migration route following the western margin of the subcontinent leading from northern Namibia to the Cape. In this view, paintings of livestock are treated not as items of iconography in an evidently responsive hunter-gatherer ritual art, but as depictions of a technological innovation brought by an immigrant pastoral people. Examples of livestock paintings incorporated as part of friezes containing multiple references to hunter-gatherer ritual practice show, however, that paintings of sheep and cattle are not archaeological evidence equivalent to the physical remains of livestock sometimes found at the same sites (see figure 3).<sup>30</sup>



*Figure 3.* Rock paintings of cattle in the Namib Desert. Author diagram.

Fully pastoral settlement is apparent on the Namib Desert landscape from the early 2nd millennium CE. The relatively limited impact of modern development, especially in remote areas, has ensured exceptional preservation of the archaeological record. The outlines of portable reed mat huts are an elusive feature of the Cape landscape but these are relatively common in the Namib Desert where the archaeological landscape is less disturbed. The lack of timber in the most arid parts of the Namib meant that most pastoral settlements were constructed entirely of stone, and these remain highly visible. Internal arrangement of stone hut settlements indicate that these were groups of family units, each consisting of a large and complex central dwelling surrounded by simpler huts, cooking shelters, and storage structures. Temporary aggregations of household units occur in areas with ephemeral grazing, while single units are found in the vicinity of perennial water and dry-season grazing. Livestock enclosures are generally found at some distance from aggregation sites, at isolated water sources within reach of grazing. Livestock enclosures do not necessarily form an integral part of pastoral settlements, and the fact

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that livestock bones are rarely found on these sites presents a clear difficulty for conventional approaches to the archaeology of pastoralism.<sup>31</sup>

These observations are corroborated by the fact that European ships visiting the Namib Desert coast from the 17th century onward found little livestock to purchase at the pastoral settlements they encountered. Only after lengthy negotiations and a wait of several days were the animals they required brought from distant stock posts. Desert pastoralists prevented traders from exploring the interior and the routes used to bring livestock for barter avoided the actual settlements. This is shown by cattle tracks preserved in coastal silt beds near Walvis Bay, which also preserve the tracks of the herders themselves, as well as of their dogs. Archaeological sites show that glass trade beads were an important medium of exchange between indigenous pastoralists and European visitors, and that this augmented an existing circulation of copper and iron beads produced in the interior of the country. Items such as beads were redeemable against livestock within the indigenous pastoral economy, although their value-equivalence was eventually eroded through the introduction of exotic trade goods whose value was not linked to livestock production.<sup>32</sup>

Evidence from the Namib Desert sites is of a pastoral economy based on alliances of independent herd owners forming an extensive regional-scale network through which exchange items, including livestock, circulated over considerable distances. The unpredictability of rainfall and pasture conditions required an array of risk-management strategies, and one of these was the dispersal of animals to stock posts sometimes located at great distances from settlements. The evidence also suggests that if the size of herds increased beyond the labor capacity of owners at least two mitigating strategies could be employed: animals could be placed under the care of client herders, or livestock could be converted temporarily into high-value trade goods both indigenous and imported.

Small-stock pastoralists were present on the less arid eastern edges of the Kalahari Desert from the early 1st millennium CE at sites such as Toteng, and by the middle of the 2nd millennium cattle-keeping agro-pastoralists were well established in that region.<sup>33</sup> Stock posts located on the western edges of the Kalahari probably answered to the authority of large permanent settlement centers such as Toutswe and Bosutswe.<sup>34</sup> It is conceivable that the separation of stock posts from major centers introduced a degree of political instability which could have led to the rise of independent pastoral entities, particularly as a consequence of interrupted communication during prolonged dry spells in the last few centuries. Thus, while groups such as the Ovaherero believe that they migrated to the region from the Great Lakes of East Africa, it is possible that the verse from their tale of origin stating “they came from a land of reeds that never dry up” (*va za kehi rotuu tu tu hakava*)<sup>35</sup> might refer to a less distant area, such as the Okavango marshes of the northern Kalahari.

As in the Cape, European traders eventually gained a foothold on the Namib Desert coast and forged alliances with Oorlam cattle raiders in the interior. On the eve of German colonial rule in the late 19th century, Ovaherero pastoralists still controlled most of the prime

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grazing areas in the central parts of the country and other groups were displaced into areas of marginal grazing value.<sup>36</sup> The political instability of the region and the high demand for firearms and other goods formed an ostensible motive for colonial intervention. Ovaherero pastoralists whose livestock represented the main source of supply for traders and increasing numbers of German settlers showed the same reluctance to part with their cattle as had earlier Khoen pastoralists at the Cape. An anticolonial insurrection in Namibia in the first decade of the 20th century resulted in a catastrophic genocidal war that left both the Ovaherero and Nama reduced to poverty.<sup>37</sup> Such was the colonial apprehension of indigenous (especially Ovaherero) cattle husbandry skills that both groups were forbidden to keep cattle at all in the aftermath of the uprising.<sup>38</sup>

In the late 19th century, the Ovaherero had just emerged from an earlier catastrophe, having lost almost their entire wealth to the *Rinderpest* epidemic, they succeeded in rebuilding their herds to their earlier levels within little more than a decade. An illustrative example of such herd growth potential is the recovery of Ovahimba livestock numbers in northwestern Namibia following the extreme drought of the early 1980s which resulted in the mortality of approximately 90% of cattle. Figure 4 shows a precipitous drop in cattle numbers caused by successive dry years, followed by a steady recovery with improved rainfall, bringing herds to their former level within little more than ten years. This growth was achieved by maintaining a high ratio of breeding female stock so that the aggregate reproductive potential of the herd was maximized. Wild ungulate populations, which also diminished as a result of drought conditions, recovered far more slowly due to their lower natural ratio of breeding females to males.<sup>39</sup>

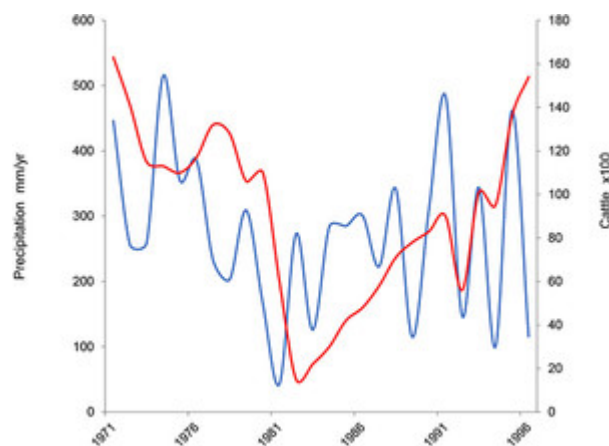


Figure 4. The response of cattle numbers (red) to rainfall variation (blue) in northwestern Namibia, 1971 to 1996. Author diagram.

During the late precolonial and early colonial eras various forms of pastoralism had been practiced in the arid and semi-arid interior of southern Africa. Fully pastoral peoples such as the Ovaherero and Nama had minimal or no dependence on agriculture. There were important centers of Ovaherero settlement in the central parts of the country and these became the focus of missionary efforts, which were largely unsuccessful, as local populations varied dramatically from year to year in response to unreliable rainfall. Ovaherero

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on the western fringes of the Kalahari established networks of wells which represented large investments of communal labor in what was evidently an intensively managed grazing system.<sup>40</sup> Agricultural peoples such as the Aawambo in the central northern parts of the country had stock posts up to several weeks' journey from permanent farming settlements, in a constantly shifting pattern of livestock movement and conflicting claims to pasture and water.<sup>41</sup>

### Ethnographic Evidence

Important insights into indigenous pastoralism that also illuminate some paradoxes in the archaeological record are provided by the Ovahimba, an Ovaherero sib who, due to their remote location in the northwest of Namibia, remained largely unscathed by early colonial conflicts. The Ovahimba are semi-nomadic cattle pastoralists who inhabit the arid fringes of the northern escarpment and desert country to the west. They practice an unusual system of dual descent linking each person to two lineages: a patrilineal group (*oruzo*) and a matrilineal group (*eanda*), both having entirely separate functions. Residence patterns, religious observance, and authority are the domain of the patrilineage, while the control and inheritance of moveable wealth are that of the matrilineage. One simple and immediate consequence of this system is that while residence is patrilocal, cattle are acquired through the matrilineage, usually the mother's brother.<sup>42</sup>

Because a man does not therefore acquire cattle from his father, his status as a herd owner is immediately, if nominally, independent of the residence group to which he belongs. The residence group is centered on the homestead (*onganda*) of the senior male representative of the *oruzo*. It is usual for the *onganda* to occupy a north-facing position from which the rising and setting of the sun are visible. Sites in narrow valleys are thus generally avoided. Also, the slope leading up to the *onganda* is usually less than 3°, in consideration of the fact that cattle in the dry season are often in poor condition and reluctant to climb steeper slopes. These practical principles of settlement and herding provide useful guidelines for the detection of archaeological sites.

The *onganda* site is generally occupied for the lifetime of the lineage head, in practical terms for a period of about 30 years extending from his majority to his eventual death. The site is abandoned at this point although the new lineage head may establish himself in the same locality, resulting in a palimpsest of adjacent and overlapping settlements both occupied and abandoned. The *onganda* is located in an area of dry-season or reserve grazing and immediately after rain has fallen the herds are driven away to temporary stock posts (*ohambo*), of which there may be several under the control of a single residence group.<sup>43</sup> The dispersal of livestock serves to conserve grazing in core areas near to water, and under ideal circumstances cattle will remain at successive stock posts for most of the year, leaving a small number of milk cows and their calves at the *onganda*.

Thus, the number of animals at the *onganda* in no way reflects the pastoral wealth of the herd owner. Wealth and therefore status are a matter of common knowledge and do not need to be manifested at the residence site by the presence of large herds. Although it

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may remain virtually empty for much of the year, a large timber cattle enclosure is a central feature of the lineage residence. Construction of the enclosure requires the felling of several hundred trees, leaving an enduring landscape scar, which, together with a small number of grindstones and ash middens, constitutes the major archaeological signature of an Ovahimba settlement. Consumption of timber and heavy browsing of shrubs in the vicinity of the *onganda* and its associated wells and other water points contributes to a piosphere of degraded vegetation in the area surrounding the site. Stock posts, in comparison, have small brushwood enclosures and huts that quickly vanish from view as the vegetation recovers.<sup>44</sup>

The layout of the *onganda* provides a formalized expression of social relations. The hut, or *otjizero*, of the lineage head faces the entrance of the cattle enclosure and the corridor in between is a ritual precinct (*omuvanda*) containing the ancestral fire (*okuruwo*), which is placed in a semicircle of stones and contains a single, permanently smoldering stump of wood that is stirred into flame only when important rituals are performed. To the right are the huts of the *oruzo* members, including the successor of the lineage head, while to the left are ranked the huts of the *eanda*. Expressed in this way, the structural principles of the Ovahimba society are found in the physical appearance of the homestead and not necessarily characterized by the actual presence of the pastoral herds. These relationships are played out in daily life through the management of the herd, which is also subject to specific prohibitions governing the ownership of cattle according to combinations of color and pattern.<sup>45</sup> Among the Ovahimba, cattle are slaughtered as a source of food and to manage the sex ratio of the herd. Traditional fines are paid in cattle, as is bride wealth, and animals are slaughtered on many occasions such as to celebrate puberty or to welcome a new bride. A wealthy man will choose to be buried in the hide of his favorite ox, which will be one of many slaughtered to provide for his funeral feast. There are historical records of up to 250 cattle being slaughtered at a single funeral, with between 10 and 60 animals being slaughtered at the funerals of less wealthy individuals. The meat of sacrificial cattle may not be eaten by members of the same patriline as the deceased.<sup>46</sup> In general, there are strict provisions for the distribution of meat from different parts of the carcass. For example, the upper hind leg (*etumbo nokurama*) is reserved for the most senior male (*ovya tate*), while the lower leg (*epindi*) is reserved for the senior wife of the lineage head (*oromukazendu omuini wonganda*).<sup>47</sup> Nearly every part of the animal carcass is either consumed or used, including hides, horn, and hooves.

Livestock bones are rarely seen on Ovahimba settlement sites no matter how wealthy its inhabitants may have been. The most visible concentration of cattle remains is found at the grave site of a lineage head where the skulls of oxen from his ancestral herd are displayed on wooden posts after the funeral feast. Graves are not located within settlements but usually on customary routes between them. At the homestead *onganda*, bone as well as discarded hide, horns, and hooves, are assiduously collected and disposed of where they cannot be eaten by cattle. This is in response to the fact that Ovahimba pastures, in common with most southern African arid-zone grazing areas, are phosphorus deficient. As a consequence, cattle develop a pica syndrome, or osteophagia, and will eat livestock bone or even the carcasses of small rodents and other animals to assuage their mineral

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deficiency.<sup>48</sup> Animal bones host the exotoxin *Clostridium botulinum*, and the generally fatal results of botulism are well known to the Ovahimba as *omutjisse oumbindu*. The disposal of bone or the grinding of bone to a fine meal which can be used as a mineral supplement for cattle, reduces or even eliminates an important potential source of archaeological evidence.



Figure 5. Grave of Ovahimba lineage head at Omuramba, northwestern Namibia, with cattle skulls on timber posts (left), and ancestral sacrifice oxen of Ovahimba lineage head Kapokoro Tjiramba at Okandombo, northwestern Namibia (right). Author images.

Another aspect of mineral deficiency in arid-zone pastures which has archaeological consequences is that the dung of cattle creates cumulative and highly persistent phosphorus concentrations within stock enclosures. This has been observed on the southeastern margins of the Kalahari Desert at sites such as Toutswe, where patches of phosphorus-tolerant grasses provide clear botanical evidence of ancient settlements.<sup>49</sup> In some situations, phosphorus anomalies are so clearly delineated that they may be used to determine the actual dimensions of livestock enclosures.<sup>50</sup> Phosphorus concentrations associated with Ovahimba settlement are as high as  $500\text{mg/kg}^{-1}$ , more than fifty times higher than background levels. The local woody vegetation cannot germinate on these sites and the core area occupied by the cattle enclosure will remain bare for an indefinite period.<sup>51</sup> An exception is the grass species *Cenchrus ciliaris*, which colonizes old stock-enclosure scars. Because it is highly nutritious, cattle continue to be attracted to these patches of grazing.

Ovahimba herding practices show that the uncertainties of arid-zone pastoralism require multiple strategies to mitigate against risks of livestock losses. Dispersal of livestock to stock posts therefore extends beyond the area occupied by a single household through the mechanism of stock loans.<sup>52</sup> The purpose of stock loans as a risk-management strategy is twofold: it disperses livestock to areas of higher grazing value and it forges alliances between stock owners over a wide kin-based network, sometimes extending over 100 km in any direction. Loans may link owners of similar means but may also be used to establish relationships with client herders who benefit from milk and meat offtake. If the labor capacity of a stock owner and his loan partners is exceeded by the number of livestock to

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be managed, Ovahimba herders convert some livestock into equivalent value commodities: traditionally, Ovahimba women would be adorned with copper and iron jewelry, which served as heirloom wealth that could be redeemed as livestock in the event of need.

There are informative parallels between Ovahimba pastoral practices and the archaeological evidence of pastoralism in the wider context of arid-zone pastoralism in southern Africa. The most striking parallels are found in the social organization of pastoral settlement and in husbandry practices. The household kin-group level of Ovahimba pastoralism is evident in the archaeological evidence of the spatial layout of Namib Desert pastoral sites in which the household group is identifiable, and in the occupation of independent dry-season sites. There is also a close parallel in the practice of herd dispersal to temporary stock posts as a pasture conservation strategy. Other risk-management strategies such as stock loans and the conversion of stock into redeemable commodities are common to both.

## Discussion of the Literature

There are three distinct threads in the literature dealing with the study of pastoral origins and spread in southern Africa—historical, archaeological, and ethnographic—and these are interwoven to varying degrees. In the Cape, detailed studies of early records provide a portrait of Khoen society as seen through the eyes of European settlers and administrators.<sup>53</sup> The historical accounts show a degree of fluidity between fully pastoral settlement and that of impoverished herders occasionally reverting to hunting and gathering. This suggests that pastoralism and hunting and gathering were alternative and to some extent overlapping economic systems, a view that archaeologists have tended to reject in favor of a paradigmatic distinction between the two economies. However, historical sources and archaeological evidence from the Kalahari have rekindled this debate, giving rise to opposing views on the integration of hunter-gatherers in pastoralist society. Interpretations of the historical ethnography support the notion that hunter-gatherers were encapsulated within a dominant food-producing economy as an impoverished underclass, although the archaeological evidence does not clearly corroborate this position.<sup>54</sup> The Kalahari debate illustrates the difficulty of reconciling historical and archaeological evidence and remains essentially unresolved.

The archaeological thread is primarily concerned with demonstrating the origin and spread of pastoralism through the occurrence of livestock bones and other assemblage items such as pottery, stone tools, and ostrich-eggshell beads. The archaeological literature privileges livestock bones as definitive evidence of pastoralism, although it is widely acknowledged that their archaeological context is frequently ambiguous.<sup>55</sup> A dominant theme in the archaeological literature is the need to distinguish pastoralists from hunter-gatherers, but the archaeological evidence from the Cape in particular is of a difference in degree of dependence on pastoralism rather than a qualitative distinction. While the field of pastoral archaeology in southern Africa remains primarily concerned with distin-

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guishing two economic modes, new perspectives, such as the view that early 1st-millennium CE pastoralism represented an elaboration of hunting and gathering that only developed into a fully pastoral economy in the 2nd millennium, better accommodate the archaeological evidence.<sup>56</sup> It is possible that this position can be reconciled with the revisionist view that Kalahari hunter-gatherers participated as client herders on the periphery of the pastoralist economy.

Until recently, the ethnographic thread was the least developed of the three components of pastoral studies in southern Africa. This is a reflection of the fact that pastoralist societies had largely succumbed to colonialism in the Cape region before the advent of modern ethnographic studies and scholars have had to rely on historical ethnographic accounts, collected without critical knowledge of indigenous languages and customs. Although the historical ethnography is an invaluable resource, which in the Cape context provides details of trading relations between the Khoen and Dutch settlers,<sup>57</sup> it contains few reliable insights into Khoen society and is often based on antagonistic and pejorative views. Archaeological studies of agropastoral societies in the Kalahari and adjacent parts of southern Africa<sup>58</sup> show a more detailed integration of ethnographic perspectives and anthropological theory.<sup>59</sup> Correspondences between the layout of settlements and the ideological precepts of cattle-keeping Bantu have been challenged by approaches that rely on empirical evidence such as of livestock bone, rather than principles of social organization.<sup>60</sup> The ethnographic perspective has broadened, with recent studies drawing on material from East Africa,<sup>61</sup> but although this has the potential to encourage a more ethnographically informed view of southern African pastoralism it pays insufficient attention to ethnographic material from within the region and relies on the suggestive possibilities of ethnographic analogy rather than critical anthropological theory.

Historical sources from Namibia provide important insights into late precolonial and early colonial pastoralism, casting light on the evolution of a Khoen raiding economy linked to the Cape market, and the relations between Oorlam Khoen and Bantu-speaking Ovaherero pastoralists.<sup>62</sup> This extended historical record contains many elements that have the potential to cast new light on precolonial Khoen pastoralism, such as the importance of kinship-based alliances, which formed a foundation for both cattle raiding against the Ovaherero and eventual resistance to colonial rule. Historical descriptions of Ovaherero social organization and husbandry practices also contribute to the understanding of pastoral society outside the particular historical setting of the Cape.<sup>63</sup> Unlike the Cape historical record, that of Namibia allows for the identification of specific sites that were centers of Khoen pastoralist settlement and interaction with early European traders. The Namibian historical records therefore provide a unique continuity between the documented past and the archaeological record.<sup>64</sup> These and related sites further provide a material record of indigenous exchange networks based on kinship alliances between pastoral communities in the precolonial era and have the potential to create a relatively continuous archaeological record of pastoral settlement over the last two millennia.



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Fundamental similarities between the archaeological record of pastoralist social organization and husbandry practices, and that of extant Ovahimba pastoralists in Namibia provide crucial evidence that is of broad relevance to an understanding of the origins and spread of pastoralism in southern Africa. The most important lines of evidence from this ethnographic material concern the material expression of pastoral social organization in the formal layout of pastoral encampments, and the material consequences of husbandry practices which militate against the archaeological occurrence of livestock bone. The Ovahimba ethnography, which essentially concurs with the broader ethnography of African pastoralism, suggests a viable research framework for the identification of pastoral settlement without relying on the occurrence of livestock bone as a diagnostic indicator.<sup>65</sup>

The broadening of the general field of inquiry to consider ethnographic accounts as a framework of pastoral research in southern Africa is an important development.<sup>66</sup> However, the ethnography needs to be employed as a heuristic device rather than as a corpus of possible analogies and scenarios. To achieve this, it is necessary to derive from the ethnography archaeological hypotheses with observable material consequences such as would explain the absence of livestock bone or the visibility of pastoral settlements in the archaeological record. At the same time, ethnographic descriptions relating to the management of pastoral herds need to be seen by archaeologists in the light of both land-use practices and the manipulation of herd structure, rather than in terms of social customs such as the supposed aversion to slaughter. New directions in the archaeological investigation of southern African pastoralism suggest that a more critical synthesis of historical, archaeological, and ethnographic perspectives is emerging, with the possibility of an overarching theoretical framework that would also accommodate evidence from cognate fields such as linguistics, genetic studies, rangeland ecology, and veterinary science.

A regional perspective on southern African pastoralism is needed to draw together the predominantly Cape-centered approach together with the increasing evidence of pastoral development from interior regions such as the Namib and Kalahari deserts. Differences in levels of archaeological preservation and the rise of new research questions from outside the Cape region have provided many additional lines of evidence and have prompted interpretations that both support and augment the approach based on historical, archaeological, and ethnographic research in the Cape. These new lines of evidence support a general model of southern African pastoralism based on anthropological principles of social organization and herd management that is more revealing of the fundamentals of African pastoralism in the archaeological record than the artifact-centered approaches that have prevailed until now.

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scientific papers, including those cited in this article. Original archaeological material is housed at the South African Museum, Cape Town. The National Archives of Namibia contains historical documentary material relating to colonial interaction with Namibian pastoralist communities, while the National Museum of Namibia houses archaeological material from numerous excavations, some of which have been published and are cited in this article. Smaller archival and archaeological collections relating to southern African pastoralist groups are housed at the National Museum of Botswana, Gaborone, and at several regional museums and archives in South Africa, such as the MacGregor Museum, Kimberley. Important research collections are also held by the University of Cape Town and the University of the Witwatersrand, South Africa.

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### Notes:

- (1.) There is considerable variation in nomenclature regarding Khoe-speaking peoples, with terms such as Khoi, Khoisan, Khoekhoe, and Khoikhoi being applied to the people themselves and the term Khoe used to denote their language. Here, the nominal term Khoen is used throughout, with reference to the language as Khoekhoe, following Wilfred Haacke and Eliphaz Eiseb, *A Khoekhoegowab Dictionary with an English-Khoekhoegowab Index*. (Windhoek: Gamsberg Macmillan, 2002).
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