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# Subsistence strategies during the Late Pleistocene in the southern Cape of South Africa: Comparing the Still Bay of Blombos Cave with the Howiesons Poort of Klipdrift Shelter

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## ABSTRACT

The Still Bay (SB) and Howiesons Poort (HP) were two significant techno-complexes in the Middle Stone Age and key periods in the expression of behavioral complexity. In this study, we compare the recently excavated fauna from the SB layers at Blombos Cave (BBC) with that from the HP levels at Klipdrift Shelter (KDS) in the southern Cape of South Africa. We consider our findings in the framework of recent models for early human subsistence behavior. In particular, we link our study with models involving resource intensification to examine whether foraging strategies in the HP were more or less intensive than those in the SB. Based on our criteria used to assess intensification—the exploitation of low-ranked prey, the processing of low-utility elements, transport decisions, and occupational intensity—intensive subsistence strategies are more evident at KDS than BBC. Our results suggest that low-ranked elements were processed more heavily and diet breadth was broader at KDS than at BBC. However, foraging ranges may have been more extensive at BBC than at KDS. Taphonomic data also suggests that the SB at BBC was a low-intensity, sporadically occupied period in contrast to the high-intensity occupations during the HP at KDS. We argue that this may be related to differences in mobility and residential patterns between these techno-complexes.

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## 1. Introduction

From approximately 300 thousand years ago (ka) to 30 ka, the Middle Stone Age (MSA) was a key era in both the anatomical and behavioral development of *Homo sapiens* (Foley and Lahr, 1997; Klein, 2009; Wadley, 2015). The period between 80 ka and 60 ka—roughly occurring during Marine Isotope Stages (MIS) 5a and 4—incorporates two techno-complexes, the Still Bay (SB) and Howiesons Poort (HP), which represent significant periods in the development of behavioral and cognitive complexity (Henshilwood and Dubreuil, 2011; Henshilwood, 2012; Wurz, 2013; Henshilwood et al., 2014). Data from SB and HP sites could therefore be useful in exploring aspects of human behavior during an era associated with the geographic expansion of people out of Africa (Henn et al., 2012). Comparing these techno-complexes may reveal links between

technology and behavior that in turn could help us understand how *H. sapiens* adapted to their environment.

Taphonomic studies of faunal assemblages are crucial in assessing the subsistence strategies and demographic factors that frame behavioral modernity. Studies of the fauna from HP sites such as Sibudu (Plug, 2004; Clark and Plug, 2008; Clark, 2011), Diepkloof (Steele and Klein, 2013), and Boomplaas (Klein, 1978; Faith, 2013a) in South Africa have revealed significant information on paleo-environments and subsistence behavior during this period. One of the key areas of research highlighted by the analysis of the Sibudu HP fauna is whether resource intensification linked to nutritional stress was a significant factor in subsistence patterns during the Late Pleistocene (cf. Clark, 2011); this is also an important issue to explore in SB assemblages. Subsistence data from SB sites, however, are scarce since very few SB sites have well-stratified, in situ, and well-preserved fauna. Blombos Cave (BBC) is the only site in the southern Cape of South Africa that meets these criteria (Henshilwood et al., 2001b; Thompson and Henshilwood, 2011). Equally rare are MSA sites with well provenanced fauna that

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contain both SB and HP sequences. The exceptions are Sibudu (Clark, 2014—although the SB data are not yet published) and Diepkloof (Steele and Klein, 2013—although published taphonomic analyses have not yet been presented). Sequences like these are critical in investigating relationships between these techno-complexes and subsistence variability in the later MSA. In lieu of a single site in the southern Cape that contains both the SB and HP, we examine the faunal assemblages from these time periods at two sites in close proximity to one another.

Here, we compare faunal remains from the SB layers (c. 77–68 ka) of the 2011 and 2013 excavation seasons at BBC, with those from the HP sequence (c. 66–59 ka) at Klipdrift Shelter (KDS; Henshilwood et al., 2014; Reynard et al., 2016b). KDS is located close to BBC (~45 km away) and contains a significant HP sequence. BBC and KDS both occur in the Cape Floristic Region (CFR) in the southern Cape of South Africa (Henshilwood et al., 2001b, 2014). Because both sites occur in the same ecological biome and similar techniques and methods were used to analyse the faunal assemblages, the results are comparable and differences in the bone assemblages between these sites are likely due to environmental change through time, differences in human behavior, and/or taphonomic history. We compare fauna from BBC and KDS to investigate: 1) whether subsistence stress is evident at either site and, 2) if so, whether intensification may have played a role in SB or HP foraging strategies.

## 2. Site descriptions

### 2.1. Paleoenvironment

BBC and KDS are on the southern Cape coast of South Africa (Fig. 1), with the mouth of the Breede River located between the two sites. The surrounding habitat is dominated by fynbos vegetation—evergreen, sclerophyllous shrubland—that thrives in the Mediterranean-like climate of the CFR where rainfall occurs predominantly in winter and reaches totals of 300 mm inland to 1000 mm on the coast (Bergh et al., 2014). Modern-day faunal communities in the fynbos biome consist mostly of animals adapted to shrubland environments such as small mammals (e.g., hyrax [*Procavia capensis*] and Cape dune mole rat [*Bathyergus*

*suillus*]), tortoise, and small, browsing bovids (e.g., Cape grysbok [*Raphicerus melanotis*] and klipspringer [*Oreotragus oreotragus*]; Skinner and Chimimba, 2005; Radloff, 2008). Large ungulates such as equids (*Equus zebra*), alcelaphines (e.g., bontebok [*Damaliscus pygargus*]), hippopotamus (*Hippopotamus amphibius*), and African buffalo (*Syncerus caffer*) were more prevalent in the Holocene and especially the Pleistocene (Skead, 1980; Klein, 1983). The transition from MIS 5a to 4 involved significant decreases in temperatures and probable climatic instability (Bar-Matthews et al., 2010). Paleoenvironmental conditions would likely have also been influenced by the broad, shallow continental shelf known as the Agulhas Bank off the present-day coast of the southern Cape, resulting in fluctuating shorelines between glacial and interglacial periods (Carr et al., 2016). Marine regressions would have significantly affected the availability of habitable land and foraging ranges for Late Pleistocene southern Cape populations (Compton, 2011).

### 2.2. Blombos Cave

BBC (34°24'51"S, 21°13'04"E) is located ~25 km west of the town of Still Bay and 300 km east of Cape Town. It is approximately 100 m from the Indian Ocean and 34.5 m above sea level. The BBC MSA sequence occurs below a layer of sterile, yellowish dune sand named 'BBC Hiatus' and consists—in sequence from top to bottom—of four MSA occupational phases: an M1 phase; an upper and lower M2 phase; and an M3 phase (Henshilwood et al., 2001b; Fig. 2). The fauna analysed for this paper was recovered from the SB period, which encompasses the M1 and upper M2 phases. The M1 deposit contains numerous basin-shaped hearths and is characterised by bifacial, foliate lithic points, the fossile directeur of the SB techno-complex (Henshilwood et al., 2001b). The upper M2 contains large hearths, shellfish, fewer bifacial points, and a formal bone tool industry (Henshilwood et al., 2001a). Engraved ochre plaques (Henshilwood et al., 2002, 2009), perforated shell beads (Henshilwood et al., 2004; Vanhaeren et al., 2013), bone tools, and engraved bone (Henshilwood and Sealy, 1997; Henshilwood et al., 2001a; d'Errico and Henshilwood, 2007) have also been recovered from these phases, in addition to three human teeth (Grine et al., 2000).

The SB levels at Blombos Cave have been dated using a number of methods, including thermoluminescence (TL), optically



**Figure 1.** Blombos Cave, Klipdrift Shelter, and Pinnacle Point in the southern Cape of the Western Cape Province of South Africa. Image courtesy of Magnus Haaland.

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