

Thank you for inviting me to review this manuscript.

Summary

The paper describes new analyses of material from the 'pre-Still Bay' layers at Diepkloof. The authors provide a background to the site and a background to the stratigraphic unit (SU) Lynn using multiple lines of evidence including OSL dating, paleobotany and faunal analysis. While summarizing previous publications related to SU Lynn, this paper presents new material that has not been described in previous publications. The study focuses on lithic technology and provisioning strategies and summarize other evidence. They describe a variety of different kinds of raw materials that were used, of which a large proportion was heat treated. They also describe over 50 pieces of ochre that show a surprising amount of geological variability. They assess the lithic technology at the site using *chaîne opératoire* approaches and describe 7 distinct reduction strategies: centripetal Levallois, the production of triangular flakes, production of quadrangular points, blade and elongated blank production, bladelet production, bipolar/anvil percussion on quartz to create *pieces esquillées*, and the production of bifacial pieces. They note that in previous publications they argued that bifacial pieces had come down from overlying layers but state that their renewed study on more material confirmed the presence of both bifacially worked pieces and shaping flakes in SU Lynn. They describe the tool component of the assemblage in great detail, including potential evidence for adhesive residues and a pattern of bifacial and unifacial shaping of otherwise convergent forms. The authors also present a detailed micro- and macroscopic use wear study which suggests that some pieces (n = 6) show impact fractures possibly evident of use as projectiles, whereas two triangular tools showed possible evidence of longitudinal use.

The authors state that SU Lynn may suggest a shift in lithic procurement strategy associated with silcrete exploitation. They describe the presence of double-patination suggesting possible re-tooling, and suggest that knapping took place on site and that exotic materials were carried in likely following individual provisioning strategies moving over 20 km. They also describe pre-SB Lynn as likely a short-lived occupation.

The authors also describe an engraved bone from SU Lynn. They suspect the specimen was from a class size IV bovid like Eland or Buffalo. Based on the geometric configuration of the marks, the authors suggest the markings represent a cross-hatched pattern, and do not appear similar to butchery or trampling marks. The depth and V-shape of the incisions lead the researchers to conclude the marks were made using an unretouched stone tool, possibly with fresh periosteum still covering the bone. They argue based on location of the incisions and SEM analysis that the piece was likely non-functional, and draw a comparison to similar cross-hatch markings from Blombos.

The authors also describe the presence of evidence for heat treatment in the SU Lynn, describing an increase in the number of silcrete pieces. They suggest that tools were heat treated at various stages of the reduction sequence. They describe one core which may show evidence of reheating, and suggest that heat treatment invention may have occurred on accident with discarded artifacts near domestic or natural fires. They call this a new hypothesis

but I was under the impression that it was the null hypothesis. They also suggest that knappers during SU Lynn period were not as skilled at heat treatment as is suggested by later evidence.

They summarize their results by stating the SU Lynn represents a shift in procurement strategy, highly associated with silcrete and production of bladelets. They argue that bladelets may imply composite tool use. They also describe formal tools as comprising three forms (unifacial, partial bifacial, and bifacial points) rather than a continuum. They describe ventral shaping on unifacial points possibly indicative of hafting.

The authors describe the significance of the engraved bone in relation to other known engravings, and symbolism in the 'HP'. They state that based on the similarities with Blombos and otherwise lack of evidence in this time period, it may represent a "pioneer stage" of symbolism in these populations. They conclude by stating that their results show that most of the behavioral novelties that later typify the SB and HP already existed in the SU Lynn.

Review

The paper is clearly organized, easy to read, detailed, and provides much-needed data about this important time period in human evolution. It also relies on multiple lines of evidence and describes a suite of behaviors from SU Lynn based on fauna, ochre, lithics, paleobotany, and an engraved bone. I have a few comments below about the interpretations, and a few minor suggested revisions. Overall however my recommendation is that this paper be recommended by PCI.

Comments

1. I wonder if the authors can comment more about the increase in bladelet production as well as the increase in silcrete use. Is there faunal evidence to suggest a shift in resource acquisition?
2. The authors report two age ranges for SU Lynn. These two age ranges do not appear to overlap. Some discussion on why these ages appear discordant would be helpful.
3. Other than photos, there does not seem to be any evidence provided to support the heat treatment findings. This is a common issue due to the historic reliance on expert knowledge. Perhaps the authors could include enhanced images as they have done in Figure 8 to the relevant heat-treated pieces in Figures 4 and 6. The photos are well detailed but it is difficult to distinguish HINC surfaces from heat-treated ones in those photos despite the labels.
4. Isn't it likely that these results from the "pre-Still Bay" merely reflect variability which has been obscured by the reliance on named stone tool industries? It is not very surprising to me that the unit below the "SB" shows some evidence like heat treatment or bifacial shaping similar to the one above it. It seems that these results are themselves added evidence for the futility of industries in studying population-level variability. Given that the

authors make statements at the end of the paper about 'general population and biological connectedness' across South Africa during MIS 5, I would like to hear their ideas for studying those connections in a technologically oriented way without reliance on those terms.

5. Regarding 'emerging symbols': I appreciate the authors' careful analysis and openness to multiple interpretations for the engraved bone, including one of simply 'waste'. Their interpretations throughout underscore temporal and spatial heterogeneity and they even state that the described shifts were not monolithic. The authors do suggest however a shift in 'social perception of graphic representations from the pre-SB to the HP'. What remains unclear, especially for those of us not working in southern Africa, is if the lack of engravings in earlier levels may also coincide with less occupation?

Suggested Edits

Figure 2 caption might be divided into A, B, and C or 1,2,3 to enable the reader to more easily find the description of the engraved tool in the text.

In describing the heat treatment, the authors default to 'he' when describing knapper behavior. It would behoove them to change this to 'they/their' given that it is unlikely that they know the gender of the Pleistocene knapper.

The last paragraph on page 35 says "but differ from other more recent engraved bones" should be "but differs from..."

The dating description below Figure 1 reads "(US Marc)" and "(US Logan)". Are these meant to be SU instead of US?