Peer Community In Archaeology

Not Simply the Surface: Manifesting Meaning in What Lies Above.

Marcel Kornfeld *based on peer reviews by* ***Lawrence Todd***, ***Jason LaBelle*** *and 2 anonymous reviewers*

Sara Daffara, Carlo Giraudi, Gabriele L.F. Berruti, Sandro Caracausi, Francesca Garanzini (2024) First evidence of a Palaeolithic occupation of the Po plain in Piedmont: the case of Trino (north-western Italy). OSF preprints, ver. 6, peer-reviewed and recommended by Peer Community in Archaeology. https://doi.org/10.31219/osf.io/pz4uf

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The archaeological record comes in many forms. Some, such as buried sites from volcanic eruptions or other abrupt sedimentary phenomena are perhaps the only ones that leave relatively clean snapshots of moments in the past. And even in those cases time is compressed. Much, if not all other archaeological record is a messy affair. Things, whatever those things may be, artifacts or construction works (i.e., features), moved, modified, destroyed, warped and in a myriad of ways modified from their behavioral contexts. Do we at some point say the record is worthless? Not worth the effort or continuing investigation. Perhaps sometimes this may be justified, but as Daffara and colleagues show, heavily impacted archaeological remains can give us clues and important information about the past. Thoughtful and careful prehistorians can make significant contributions from what appear to be poor archaeological records.

In the case of Daffara and colleagues, a number of important theoretical cross-sections can be recognized. For a long time surface archaeology was thought of simply as a way of getting a preliminary peak at the subsurface. From some of the earliest professional archaeologists (e.g., Kidder 1924, 1931; Nelson 1916) to the New Archaeologists of the 1960s, the link between the surface and subsurface was only improved in precision and systematization (Binford et al. 1970). However, at Hatchery West Binford and colleagues not only showed that surface material can be used more reliably to get at the subsurface, but that substantive behavioral inferences can be made with the archaeological record visible on the surface.

Much more important are the behavioral implications drawn from surface material. I am not sure we can cite the first attempts at interpreting prehistory from the surface manifestations of the archaeological record, but a flurry of such approaches proliferated in the 1970s and beyond (Dunnell and Dancey 1983; Ebert 1992; Foley 1981). Off-site archaeology, non-site archaeology, later morphing into landscape archaeology

all deal strictly with surface archaeological record to aid in understanding the past. With the current paper, Daffara and colleagues (2024) are clearly in this camp. Although still not widely accepted, it is clear that some behaviors (parts of systems) can only be approached from surface archaeological record. It is very unlikely that a future archaeologist will be able to excavate an entire human social/cultural system; people moving from season to season, creating multiple long and short term camps, travelling, procuring resources, etc. To excavate an entire system one would need to excavate 20,000 km2 or some similarly impossible task. Even if it was physically possible to excavate such an enormous area, it is very likely that some of contextual elements of any such system will be surface manifestations.

Without belaboring the point, surface archaeological record yields data like any other archaeological record. We must contextual the archaeological artifacts or features weather they come from surface or below. Daffara and colleagues show us that we can learn about deep prehistory of northern Italy, with collections that were unsystematically collected, biased by agricultural as well as other land deformations agents. They carefully describe the regional prehistory as we know it, in particular specific well documented sites and assemblages as a means of applying such knowledge to less well controlled or uncontrolled collections.

References:

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Daffara, S., Giraudi, C., Berruti, G. L. F., Caracausi, S. and Garanzini, F. (2024). First evidence of a Palaeolithic frequentation of the Po plain in Piedmont: the case of Trino (north-western Italy), OSF Preprints, pz4uf, ver. 6 peer-reviewed and recommended by Peer Community in Archaeology. https://doi.org/10.31219/osf.io/pz4uf

Dunnell, R. C. and Dancey, W. S. (1983). The siteless survey: a regional scale data collection strategy. In Advances in Archaeological Method and Theory, vol. 6, edited by Michael B. Schiffer, pp. 267-287. Academic Press, New York.

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Nelson, N. (1916). Chronology of the Tano Ruins, New Mexico. American Anthropologist 18(2):159-180.

Reviews

Evaluation round #2

DOI or URL of the preprint: https://doi.org/10.31219/osf.io/pz4uf
Version of the preprint: 4

Authors' reply, 09 February 2024

Dear Recommender,

thanking you for the very thorough revision work done, we are pleased to submit the revised version of our work. We have accepted the changes made to the text and addressed some of the comments in the word file that we attach here.

Sara Daffara and the co-authors

Download tracked changes file

Decision by Marcel Kornfeld, posted 07 February 2024, validated 07 February 2024

Accept after edits are made as per the manuscript uploaded by the recommender

Dear Authors,

Attached is your edited submission. The edits are mostly minor clarifications of wording. Please look at the editorial changes carefully and make sure that they do not change your meaning. There are a few queries in marginal comments as well. For example, your frequent mention of 'core management.' I think you mean 'core maintenance.' if this is correct, please make sure it is changed through the entire manuscript. Same with the other queries.

After reviewing my revisions, please accept the ones you agree with and upload the manuscript so that I can upload the recommendation to publish.

Sincerely,

Marcel Kornfeld **Download recommender's annotations**

Evaluation round #1

DOI or URL of the preprint: https://doi.org/10.31219/osf.io/pvwm4

Version of the preprint: 1

Authors' reply, 13 January 2024

Dear Recommender,

we are pleased to submit a revised version of "First evidence of a Palaeolithic frequentation of the Po plain in Piedmont: the case of Trino (north-western Italy)". We would like to thank the reviewers and we appreciated the constructive criticism of their comments that really helped in the improvement of our work. Please find below our response to each of their comments (italics for the text of the reviewers). The modifications we made in this new version of the paper are highlighted in green in the text.

Sara Daffara and the co-authors

Review by Lawrence Todd

Abstract: Perhaps note that methods used are comparable with analysis of excavated sites in the region (e.g., Ciota Ciara cave and Castelleto Ticino) and are fundamental in being able to link the older Trino surface collections to the more recent, controlled datasets. The systematic, inclusive approach to regional analysis is a message that should be applied to many other geographic areas and time periods and noting it in the abstract might broaden the readership.

Done. Two sentences have been added at the end of the abstract.

Figure 1: Assume that the color difference differentiates the alpine/sub-alpine zones, but this should be made specific in the legend. Also, what are the differences between the localities marked with stars versus circles and in the size of the circles – describe either in caption or legend.

Done. We have clarified what the reviewer requested in the caption of Figure 1.

Figure 2: Do the numbers of the localities in "c" refer to the RIT numbers used in the text and tables? If so, specify in the caption. If not, it would make a more useful Figure if renumber to correspond to the RIT #s. Also, when stating that "white dot = collection area of the bifacial tool recently found" if this is the artifact illustrated in Figure 3, it would be helpful to note the illustration in this caption and the location in Figure 3.

Yes, the numbers of the localities in "c" refer to the RIT numbers used in the text and tables. As specified in the caption, not for all collection areas is the location known, which is why not all RIT #s is shown in the figure. The white dot refers to the artifact illustrated in Figure 3. As suggested, we modified the caption.

Figure 3. Add reference to the biface's location in Figure 2.

Done.

Figure 4. Would be helpful if the locations of each RIT location were linked to the terraces shown here. Think this would best be accomplished by adding another column to Table 1 (see comments below) with the terrace were each collection was found indicated.

Table 1. This table is an exact duplicate of Table 7 previously published in Daffara, S., Berruti, G.L.F., Caracausi, S., Garcia-Rojas, M., Arzarello, M., 2023. Techno-economy of lithic raw materials in Piedmont (north-western Italy). A First lifelike scenario. Journal of lithic studies 10, 41 p. doi: https://doi.org/10.2218/jls.7322. While it is clear that these data are needed in the this paper as well, as suggested in comments on Figure 4, perhaps the table could be modified/updated a bit to include some new information, specifically the terrace location (when known) for each RIT collection, and perhaps also the older TR designations previously used for some of these (as discussed in lines 140-156 of the current document).

We tried to make the correlation proposed by the reviewer but unfortunately the data about the location of the collection areas, when present, are too approximate to do so. The only certain locations are those of the collection areas in the 1970s, which are shown in Figures 4 and 5. This point has been clarified in the caption of figure 4. The older TR designation, used in the 1970s, are not included in Table 1 since the detailed composition of the lithic assemblages is not available in literature: what we have is just the total number of artefacts found in each area (mentioned in the material section) and a general description of the techno-typological features.

Figure 5. Although it's obvious, for consistency add the MP and UP codes after the Middle and Upper Palaeolithic descriptors in the caption.

Done.

Figures 9e, 14e, and 19e. Length misspelled on x-axis label. Figure 17e. Neither axis is labeled.

Sorry for the mistake. Figures 9, 14, 17 and 19 have been corrected and replaced.

Review by anonymous reviewer 1

The authors provide a descriptive analysis of lithic collections from the Trino hill area, which have been recovered at various times. While reporting the technical analysis of the assemblages, the authors refer to the non-systematic nature of the collections. Please indicate this when first describing the collections.

Done. The clarification was made in the first sentence of the paragraph "Materials".

The authors take care to understand the geology of the area, reporting that more recent assemblages are found on higher elevation S1 surfaces and older deposits are found downslope. Does this mean that older materials have been transported downslope and is this evident in the artifacts themselves?

The description of stratigraphy (Line 808) needs further clarification. If I understand correctly, the authors are referring to where assemblages of particular ages were found in the 1970s but are not certain about exact find locations and so are being very general in their descriptions? And none of the collections described here

correspond to the locations in Figure 5 designated MP and so forth. Either remove this section or move it up in the manuscript where stratigraphy is first discussed.

Evidently the organization of the text and the exposition were not clear in the first version of the text. As suggested by the reviewer, we combined all the data concerning stratigraphy into one paragraph by editing the text where it was most confusing. As indicated by the reviewer, only some of the lithic artifacts found in the 1970s come from a certain stratigraphic context; for none of the artifacts found in later years can be traced back to the stratigraphic context of origin. This is the reason why we have been very cautious and general in our descriptions.

What we do know for certain is that all the artifacts found are from the loess levels covering the terraces of the isolated Trino relief.

The authors offer a detailed description of each large assemblage. This analysis provides enough detail to invite subsequent analyses, for example, to consider how each Middle Paleolithic assemblage differs from the other nearby assemblages. I found myself flipping from the technical analyses to the figures to see where particular kinds of technical attributes were occurring on the landscape. Subsequent analysis could consider this. Other analyses could further explore how technical aspects relate to material type.

Thank you for the comment. We are just now setting future work focused on lithic raw materials, an aspect that at the regional scale is of particular importance in terms of technological adaptations, as already noted for example at Ciota Ciara.

Note that some maps do not include North arrows or scale bars.

Sorry for the mistake. Maps and figures have been corrected.

Review by Jason LaBelle

I thought the project area, purpose, and results were clearly presented in the paper. My main point of concern, as a reader, was that it would be useful to have a better understanding of HOW the authors classified the artifacts/tools into specific periods. This is described (written) in the methods section, but perhaps adding a flow chart, table, or figure would better visually show their decision making (classification) process, since every inference follows this important classification process.

For instance, core and tool types make sense for temporal classification following conventional approaches (morphology, retouch, etc). However, I was not sure how/why vein quartz should lead to classification as from the Middle Paleolithic era. Here in North America, expedient vs more curated technologies might explain raw material selection (quality, abundance, cost of acquistion), but that is rarely linked exclusively to a period (such as the Middle Paleolithic). I think the paper could be improved by discussing how/why expedient raw material technologies are associated with the Middle Paleolithic – is it restricted mobility? Lack of knowledge of more distance sources? No need for predictable, higher quality knappable sources? Is this pattern common throught the local area, greater region?

Thank you for the comment. One of our concerns about this work is precisely clarity in explaining how we arrived at our interpretation of the Trino lithic assemblages despite the lack of a certain stratigraphic context. A figure has been added in the methods paragraph as requested by the reviewer and the issue of vein quartz has been better specified in the text. At the present state of research and according to the data available, in Piedmont the exploitation of vein quartz appears to be strongly linked to Middle Palaeolithic. This certainly does not derive from the lack of knowledge of better raw material supply areas since it is well attested, especially at Ciota Ciara, the exploitation, in the same period, of radiolarites from nearby Lombardy (about 35 km). Our hypothesis is that during the Middle Palaeolithic there was a good mobility of human groups between Piedmont and Lombardy; during the movements, probably seasonal, towards Piedmont, a region lacking in outcrops of good quality lithic raw materials, some tools/cores in Lombard radiolarite were transported; during the periods of frequentation of Piedmontese sites the dominant lithic raw material becomes vein quartz since it is the lithic resource that is most available regionally. The expedient behaviour in the exploitation of vein quartz

is due to an adaptation of Middle Palaeolithic reduction sequences to the characteristics of this raw material. In contrast, the few data available at the regional scale since the Upper Palaeolithic indicate a strong increase in the presence of imported raw materials from Lombardy and other neighbouring areas while vein quartz becomes a secondary lithic resource. We do not have enough information to make concrete assumptions, but it is possible to speculate that in the transition between Middle and Upper Palaeolithic Piedmont was frequented in different ways and that regional and interregional mobility changed substantially making the exploitation of imported raw materials more favourable rather than the adaptation of technology to the characteristics of vein quartz. In conclusion, our hypothesis that vein quartz exploitation is related to the Middle Palaeolithic is to be considered valid only for the regional context under consideration and cannot be generalized.

In my attached file, I used track changes and comments to list my thoughts/ideas on the manuscript. I hope they are of use in tightening up the paper.

Thank you, we modified the text as indicated by the reviewer.

I think it would be worth talking about the potential for a future project on Trino, to test one of these locales, and see if the artifacts are coming out of the different loess sequences as proposed. Would this be a possibility, to test one/more of these locales, for more fine grained information on the Middle and Upper Paleolithic. Simply mentioning where you think this would be most beneficial would tie together different pieces of your articles (spatial, technological, and stratigraphic information)

We carried out a survey in the area in the past few years in order to see if it was possible to make test pits in at least one of the areas where lithic artifacts were collected. Unfortunately, the intensity of agricultural and quarry activities has severely compromised this possibility.

Review by anonymous reviewer 2

I do, however, think the data presentation could be better organized to improve flow and allow for additional interpretations in the Discussion. Organizing the Discussion section by temporal unit (separate headers), using the detailed patterning highlighted in the description of each RIT, might achieve this.

Done. The Discussion section has been organized by temporal unit.

The text has several single sentence paragraphs. My training was to avoid such paragraphs, so I'd encourage the authors to consider linking those to another paragraph or adding another sentence. Just a consideration as there might be other perspectives on paragraph configuration.

We would prefer not to make this change since the very short paragraphs referred to by the reviewer correspond to those collection areas where a small number of artifacts have been recovered. We believe that the results section will be clearer by keeping the original subdivision than by making the suggested change.

When describing artifacts in the text it would be helpful to note the figure number and associated letter so the reader can more easily find that image without searching the figure caption.

Done.

The figure and table captions should be closely reviewed for consistency and punctuation.

Done.

Most graphs lack y-axis labels (i.e., "Frequency" for the bar charts and, I presume, millimeters ["mm"] next to Width). "Length" is misspelled on the scatter plot. The scatter plots might also benefit from statistical copy (e.g., R2) so it's clear how much emphasis to place on the interpretation.

Sorry for the mistake. Corrections have been made.

70s", "80s", and "90s" should be converted to "1970s", "1980s", etc.

Done.

Artifact descriptions for the RIT's are sometimes awkward. Many paragraphs begin with a statement of interpretation before the data are presented. I suggest writing more inductively such that the data are presented in a way that leads to the conclusion/inference. Another way around this is to improve on the topic sentence of each paragraph.

Done, where necessary we made the requested changes.

Lines 1-5 – the title is really long and should be shortened. Having a two sentence title is awkward and unnecessarily increases the length. Perhaps the first sentence could be dropped with a little additional editing to the second sentence for clarity.

Done. The title has been shortened as requested.

Consider adding country boundaries to Figure 1. This will make it easier to follow the text, especially for those who are unfamiliar with that part of Europe.

Done.

Line 88 – what does "W-E" refer to in relation to "S2? I assume west-east but am unsure and don't see it on Figure 4.

The north arrow was added to Figure 4 to clarify this point.

Line 201 – add Munsell color for the soil descriptions. The Munsell colors are provided in the Discussion section, but not here. I suggest in a later comment that the associated paragraph in the Discussion be moved to this section. Line 223 – I'm wondering whether the section beginning Line 798 might fit better here as a summary of expectations.

As also pointed out by other reviewers, the description of stratigraphy and reference to stratigraphic aspects in the discussion was unclear. As suggested by reviewer 2, the paragraph on stratigraphy originally placed in the discussion was moved and merged with the geological description of the area.

Line 218 – I don't see the location of the biface marked on Figure 5 and it isn't clear from the text.

As also requested by other reviewers, this point has been clarified in the captions of Figures 2 and 3

Line 229-230 – please better justify why you are including artifacts away from the RIT. I think it would make a stronger case if the artifact analysis was entirely related to RIT. I think you include these data so that later in the paper you have something to compare to, but I think this just confuses the issue and I would rather see the analysis focused solely on RIT. Perhaps in the discussion you could include basic findings from outside the RIT to make your point OR just more clearly indicate why the non-RIT artifacts are included here/now and that's probably OK.

The localities of Casotto Diana, Tricerro, Cantone, Bosco della Partecipanza, and Cascina Ariosa are located at the foot of the Trino hill. The lithic artifacts were collected in the same years and presumably by the same people who made the collections on the Trino hill. It also seemed appropriate to us to include these localities as well in order to provide for the first time a complete picture of the findings of lithic industries in the area under study. This point has been clarified in the Materials section.

Line 250 – please briefly define or describe what S.S.D.A is as not everyone will know what this is.

Done.

Lines 274-290 – is your method/criteria for identifying artifacts to time period established protocol or is this a novel approach? I think this should be clarified. I also think that creating a simple table that stipulates which artifact types represent direct evidence for each temporal period would be helpful. This is clear enough from the text and descriptions, but having a simple reference table would help the reader keep track of the expectations. Also, how do temporally nondiagnostic artifact types fit in this (e.g., debris)?

Thank you for the comment. This point has been clarified adding a Figure (Fig. 6) providing a graphic representation of the criteria used for the study. In the text of the methods section other issues related to the criteria used for identifying artefacts have bene clarified.

Lines 321-327 – I think this paragraph could be deleted. It's hard to understand this summary without more context and without data to support the finding.

Thank you for the suggestion but we do not think we should delete this paragraph. Here are in fact some general aspects related to the lithic assemblages examined, i.e. proportion of lithic raw materials, post-depositional alterations. In our opinion summarizing these aspects in one paragraph avoids the need to repeat them for each RIT and allows, in the following paragraphs to focus on the technological aspects.

Line 597 (and elsewhere) – by "large" flakes do you by chance mean "wide"? If not, please clarify.

Sorry for the mistake, corrections have been made in the text.

Lines 636-651 – this paragraph should be reorganized so that it focuses on the MP assemblage, which seems to be the topic sentence of the paragraph but rather the focus is on the Neolithic. Is “collocation” the right word in this paragraph?

The word “collocation” was not appropriate and was replaced in the text with the word “attribution”. It is not clear what the reviewer means: as with the other paragraphs in the Results section, the focus is on the entire lithic assemblage from the area under review (in this case RIT 14). The huge number of lithic artifacts from RIT 14 includes artifacts referable to the Middle Palaeolithic, Upper Palaeolithic, and Neolithic periods, as well as a portion of artifacts of uncertain attribution.

Line 704 – “siret”??

Siret indicates an accidental break occurred during knapping activity. During the detachment of a flake, two perpendicular flaking planes develop, the second one separating the flake into two more or less equal parts. This type of accident is common in flakes removed with a hard hammer.

Lines 717-723 – Any way to include more behavioral interpretations like this paragraph in the other RIT sections. Here the authors infer interesting behaviors that follow from the detailed descriptions of the artifacts. Including more such behavioral interpretations would improve the manuscript and provide more context for the detailed artifact descriptions. I know that sample size of this RIT allows for this, but are there others that could be interpreted similarly?

Thank you for your comment. Unfortunately, the RIT 14 lithic assemblage has enough cores and knapping products for each method to allow considerations regarding technological behaviour. The other assemblages, although the reduction sequences appear to have similar characteristics to those of RIT 14, have too few pieces for each method to make more specific observations than are already proposed in the text. A general interpretation of the context of Trino is provided in the Discussion.

Lines 856-860 – it would be helpful to provide the percentage of and/or frequency of artifacts assigned to each of the 5 groups. These data could also be summarized in a table and perhaps even a pie chart or similar type of figure to visually display the patterning. The paragraph below might possibly work better if attached to this paragraph.

Done. The percentage of each of the five groups has been added in the text.

Lines 867-872 – I agree with the implications of this paragraph but think it should be expanded or elaborated on a bit to better describe the patterning.

Thank you for the comment. We have expanded a little bit the paragraph as suggested.

Lines 949-952 – you suggest that Trino hill functioned mainly as a residence/hunting camp through time. I am wondering, however, if that’s the case, then why are there so few tools? My experience is that residential sites tend to have a somewhat high proportion of broken/exhausted tools, though length of occupation and specific site activities affect this pattern. Thus, I am wondering, given the seemingly high proportion of tool production debris and presence of raw stone, whether a quarry and workshop function also should be considered for the locally outcropping materials? That is, perhaps these surface collection areas/sites, as palimpsests (artifacts from different occupations and/or time periods), represent different functions through time (i.e., perhaps some periods of time represent quarry/workshop activities but other periods of time residential sites) or even by raw material type? It seems like the authors have these data and could address this, especially as a way to try and disentangle the palimpsest nature of these assemblages. That could prove interesting.

Thank you for the comment. We have argued this better and, depending on the different organization of the Discussion, moved the paragraph to the conclusion section.

Download tracked changes file

Decision by Marcel Kornfeld, posted 12 December 2023, validated 12 December 2023

Dear Authors (Daffara et al.),

I have now received four reviews of your manuscript "Technological analysis of lithic assemblages…" submitted to PCI and the overwhelming consensus is that this manuscript deserves publication with **minor revisions**, generally consisting of clarification. It is an important an innovative approach to the archaeological record, and I am in complete agreement with the reviewers. The reviewers provide suggestions for clarifying some arguments and I urge you to address these. Although more extensive suggestions are in the original reviewer files, and I urge you to look at them, the **summary of the suggestions I list below are the most critical**. Please make these revisions and corrections, if you agree, and upload the manuscript for me (the recommender) to review. Also, please upload a letter explaining the **summary revisions** that you chose not to make. After reviewing your revised manuscript, we will proceed with publication. There are two anonymous reviewers referred to below as Reviewer No. 1 or No. 2, the other two reviewers did not request anonymity and I will refer to them as Todd and LaBelle. You can see other reviews on line. Once you have addressed the suggestions summarized in this letter and you have uploaded the revised manuscript I will be delighted to move forward with publication.

Sincerely,
Marcel Kornfeld
PCI Recommender

SUGGESTED REVISIONS:

Below I summarize the reviewer suggestions made by more than one reviewer, including myself. Excerpts of the remaining critical suggestion made by each reviewer follow these combined suggestions.

Several reviewers suggest polishing of the language (English). Perhaps one way to accomplish this is to have a native English-speaking archaeologist edit your revised manuscript. I am enclosing my editorial revisions up to line 219 (Introduction and History of Research), lines 772-817 (Stratigraphic Position of the Lithic Assemblages), and the Conclusion of the manuscript. These sections need no father editing, but I think you want to revise the rest of the manuscript before someone edits the reset of the paper. This is a critical need for publication. Also, please make sure that you adhere to the PCI author guidelines.

- Note that some maps do not include north arrows or scales, please add these.
- As per Reviewer No. 2, please shorten the title of the paper, it is too long.

Reviewer No. 2 and Labelle suggest strengthening the sections of the manuscript on typology. Below are both of their comments regarding this matter. LaBelle states:

I thought the project area, purpose, and results were clearly presented in the paper. My main point of concern, as a reader, was that it would be useful to have a better understanding of HOW the authors classified the artifacts/tools into specific periods. This is described (written) in the methods section, but perhaps adding a flow chart, table, or figure would better visually show their decision making (classification) process, since every inference follows this important classification process.

For instance, core and tool types make sense for temporal classification following conventional approaches (morphology, retouch, etc.). However, I was not sure how/why vein quartz should lead to classification as from the Middle Paleolithic era. Here in North America, expedient vs. more curated technologies might explain raw material selection (quality, abundance, cost of acquisition), but that is rarely linked exclusively to a period (such as the Middle Paleolithic). I think the paper could be improved by discussing how/why expedient raw material technologies are associated with the Middle Paleolithic – is it restricted mobility? Lack of knowledge of more distance sources? No need for predictable, higher quality knappable sources? Is this pattern common through the local area, greater region?

While Reviewer No 2 states:

Line 250 – please briefly define or describe what S.S.D.A is as not everyone will know what this is.

Lines 274-290 – is your method/criteria for identifying artifacts to time period established protocol or is this a novel approach? I think this should be clarified. I also think that creating a simple table that stipulates

which artifact types represent direct evidence for each temporal period would be helpful. This is clear enough from the text and descriptions, but having a simple reference table would help the reader keep track of the expectations. Also, how do temporally nondiagnostic artifact types fit in this (e.g., debris)?

Reviewer No. 1

The authors provide a descriptive analysis of lithic collections from the Trino hill area, which have been recovered at various times. While reporting the technical analysis of the assemblages, the authors refer to the non-systematic nature of the collections. Please indicate this when first describing the collections.

The authors take care to understand the geology of the area, reporting that more recent assemblages are found on higher elevation S1 surfaces and older deposits are found downslope. Does this mean that older materials have been transported downslope and is this evident in the artifacts themselves? **Note from recommender: I think the reviewer makes this comment because there is some confusion regarding the terrace surfaces and the current lad surface, the loess layers overlying the terrace surfaces. Please look at this carefully and if possible clarify.**

The description of stratigraphy (Line 808) needs further clarification. If I understand correctly, the authors are referring to where assemblages of particular ages were found in the 1970s but are not certain about exact find locations and so are being very general in their descriptions? And none of the collections described here correspond to the locations in Figure 5 designated MP and so forth. Either remove this section or move it up in the manuscript where stratigraphy is first discussed.

Reviewer No. 2

The text has several single sentence paragraphs. My training was to avoid such paragraphs, so I would encourage the authors to consider linking those to another paragraph or adding another sentence.

When describing artifacts in the text it would be helpful to note the figure number and associated letter so the reader can more easily find that image without searching the figure caption. [**Recommender: this dovetails Todd's suggestions for revising figures]**

The figure and table captions should be closely reviewed for consistency and punctuation.

Lines 717-723 – Any way to include more behavioral interpretations like this paragraph in the other RIT sections. Here the authors infer interesting behaviors that follow from the detailed descriptions of the artifacts. Including more such behavioral interpretations would improve the manuscript and provide more context for the detailed artifact descriptions. I know that sample size of this RIT allows for this, but are there others that could be interpreted similarly? **[Recommender's note: Consider elaborating on behavioral patterns, the next suggestion of Reviewer No. 2 (Lines 949-952) is an extension of this suggestions]**

Lines 949-952 – you suggest that Trino hill functioned mainly as a residence/hunting camp through time. I am wondering, however, if that's the case, then why are there so few tools? My experience is that residential sites tend to have a somewhat high proportion of broken/exhausted tools, though length of occupation and specific site activities affect this pattern. Thus, I am wondering, given the seemingly high proportion of tool production debris and presence of raw stone, whether a quarry and workshop function also should be considered for the locally outcropping materials? That is, perhaps these surface collection areas/sites, as palimpsests (artifacts from different occupations and/or time periods), represent different functions through time (i.e., perhaps some periods of time represent quarry/workshop activities but other periods of time residential sites) or even by raw material type? It seems like the authors have these data and could address this, especially as a way to try and disentangle the palimpsest nature of these assemblages. That could prove interesting.

Todd:

Abstract: Perhaps note that methods used are comparable with analysis of excavated sites in the region (e.g., Ciota Ciara cave and Castelleto Ticino) and are fundamental in being able to link the older Trino surface collections to the more recent, controlled datasets. The systematic, inclusive approach to regional analysis is a

message that should be applied to many other geographic areas and time periods and noting it in the abstract might broaden the readership.

FIGURES AND TABLES

Figure 1: Assume that the color difference differentiates the alpine/sub-alpine zones, but this should be made specific in the legend. Also, what are the differences between the localities marked with stars versus circles and in the size of the circles – describe either in caption or legend.

Figure 2: Do the numbers of the localities in "c" refer to the RIT numbers used in the text and tables? If so, specify in the caption. If not, it would make a more useful figure if renumber to correspond to the RIT #s. Also, when stating that "**white dot = collection area of the bifacial tool recently found" if this is the artifact illustrated in Figure 3, it would be helpful to note the illustration in this caption and the location in Figure 3.**

Figure 3. Add reference to the biface's location in Figure 2.

Figure 4. Would be helpful if the locations of each RIT location were linked to the terraces shown here. Think this would best be accomplished by **adding another column to Table 1** (see comments below) with the terrace were each collection was found indicated.

Figure 5. Although it is obvious, for consistency add the MP and UP codes after the Middle and Upper Palaeolithic descriptors in the caption.

Figures 9e, 14e, and 19e. **Length misspelled on x-axis label**.
Figure 17e. **Neither axis is labeled.**

Table 1. This table is an exact duplicate of Table 7 previously published in Daffara, S., Berruti, G.L.F., Caracausi, S., Garcia-Rojas, M., Arzarello, M., 2023. Techno-economy of lithic raw materials in Piedmont (north-western Italy). A First lifelike scenario. Journal of lithic studies 10, 41 p. doi: https://doi.org/10.2218/jls.7322. While it is clear that these data are needed in the this paper as well, as suggested in comments on Figure 4, perhaps the table could be modified/updated a bit **to include some new information, specifically the terrace location** (when known) for each RIT collection, and **perhaps also the older TR designations** previously used for some of these (as discussed in lines 140-156 of the current document). **Download recommender's annotations**

Reviewed by Lawrence Todd, 24 November 2023

The paper presents a body of well-researched data on an important series of stone tool assemblages and while the specific methods, results, and conclusions are all meticulously documented, the broader, more general importance of this work can also be seen in terms of its focus on scale (intra-site to regional) and on the incorporation of a diverse set of archaeological collections. The study presents solid primary data that is exceptionally well integrated with comparable analyses from near-by sites with better excavated contexts. Using the controlled excavation datasets as the basis for the surface assemblage interpretations is a method in need of more general archaeological application. The paper not only provides descriptive data, but also develops a series of data-based regional research questions to increase the effectiveness of future research. Using reduction sequence analysis and raw material source investigation provides a solid, replicable set of comparative methods.

One of the more significant aspects of a research project is that the team actively incorporates diverse collections and data sets to develop the most complete regional record possible. Although the work is

geographically and chronologically focused, the integrative approach is of general archaeological relevance. It's all too common for research to dismiss older, less well documented collections. While recognizing difficulties in working with the Trino collections, the effort expended to glean as much information as possible from the un-controlled surface collections is laudable. The alternative – to ignore the surface record because it's difficult to interpret unambiguously – is essentially just an excuse for not tackling tough problems of working with a potential major archaeological information source. The authors of this paper do an exceptional job of bringing appropriate technologically-based analysis to the problem. They recognize that there is uncertainty to the results, and present their observations as the basis for proposing hypotheses about Paleolithic settlement dynamics.

On my first reading of the manuscript, I saw it as a well-reason, well documented piece of research about a geographic I that I knew nothing about. It fell into my 'good work, but of limited interest' categorization. But as I've had time to think about the project, it has shifted into my "this has much wider implications" mental pidgin-hole. I've been a strong advocate for incorporating analysis of surface materials into regional studies since first read Foley's Off-site Archaeology paper decades ago, (1981), and I've tried to implement artifact-based rather than site-based thinking into my view of regional archaeological studies. While Foley's approach calls for much more controlled surface collections than available to Daffara et al. from Trino, when viewed from the regional perspective these surface collections can definitely be seen as appropriate additions to the very few data points provided by well-excavated, stratified sites. It certainly doesn't seem appropriate to limit our examination of the full complexity of the archaeological record to only those few high-integrity/high resolution preserved components of the full record. Kudos to Daffara et al. for taking on the regional record in its full, and often messy complexity.

The second issue that's been making me think about this paper than I originally thought likely, is the explicit attempt to incorporate as many older, previously collected materials into the study as possible. While the results of recent excavations at Ciota Ciara cave seem very information rich, the active incorporation of older collections into the ongoing study is something that needs to much more commonly practiced. Too older collections are often dismissed because of less than contemporary standards of documentation. But just as a solid research project involves a literature review section of background information and thought, it's encouraging to see the collections review approach taken here. We probably should all have a balance of data-collection activities, from both new sources (e.g., excavations, surface inventory, or experimental work) and collections revisits activities as part of every research project we're engaged in. This paper is a great example of the methods and benefits of the broader use of older, existing collections to help inform contemporary investigations.

In sum, this paper uses solid methods, takes into account the basic data problems, and generates thought-provoking results. Most of the suggestions I have are small-scale issues to perhaps improve the information content of the Figures and Tables and have no comments on the body of the text.Suggestions:Abstract: Perhaps note that methods used are comparable with analysis of excavated sites in the region (e.g., Ciota Ciara cave and Castelleto Ticino) and are fundamental in being able to link the older Trino surface collections to the more recent, controlled datasets. The systematic, inclusive approach to regional analysis is a message that should be applied to many other geographic areas and time periods and noting it in the abstract might broaden the readership.

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Foley, R.A. (1981) Off-Site Archaeology: An Alternative for the Short-Sited. In Patterns of the Past: Essays in Honour of David L. Clarke, edited by I. Hodder, G. Isaac, and N. Hammond, pp. 157-183. Cambrige University Press, Cambridge.

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Reviewed by anonymous reviewer 2, 27 November 2023

I reviewed this preprint from the perspective of an archaeologist experienced in survey archaeology and working with surface collections. Please note that I claim no expertise in the Paleolithic sequence of this part of Europe.

The authors provide a descriptive analysis of lithic collections from the Trino hill area, which have been recovered at various times. While reporting the technical analysis of the assemblages, the authors refer to the non-systematic nature of the collections. Please indicate this when first describing the collections.

The authors take care to understand the geology of the area, reporting that more recent assemblages are found on higher elevation S1 surfaces and older deposits are found downslope. Does this mean that older materials have been transported downslope and is this evident in the artifacts themselves?

The authors offer a detailed description of each large assemblage. This analysis provides enough detail to invite subsequent analyses, for example, to consider how each Middle Paleolithic assemblage differs from the other nearby assemblages. I found myself flipping from the technical analyses to the figures to see where particular kinds of technical attributes were occurring on the landscape. Subsequent analysis could consider this. Other analyses could further explore how technical aspects relate to material type.

The description of stratigraphy (Line 808) needs further clarification. If I understand correctly, the authors are referring to where assemblages of particular ages were found in the 1970s but are not certain about exact find locations and so are being very general in their descriptions? And none of the collections described here correspond to the locations in Figure 5 designated MP and so forth. Either remove this section or move it up in the manuscript where stratigraphy is first discussed.

The English needs some more polishing. Note that some maps do not include North arrows or scale bars.

The authors are doing critical work in providing information on legacy assemblages that were collected but not fully reported. Their work complements other more recent work being done in the general area. The cited literature appears up to date.

Reviewed by Jason LaBelle, 25 November 2023

Thank you for providing me the opportunity to review this interesting paper. My personal research relates to prehistoric (pre-contact) Native American archaeology in western North America. I often use surface lithic artifacts (stone tools), often of mixed temporal context, to better understand past periods in prehistory, technology, and raw material use. In that sense, I am quite familiar with the concepts and pros/cons of such approaches in North America, and as applied here in this Italian case study.

Overall, I thought the paper was an interesting case study of such methods, and provides a good data point for northwestern Italy, which appears to lack comparative data on Paleolithic studies compared to surrounding regions discussed in the paper. I all too well also understand the problems with using collections gathered 40-50 years earlier by other field parties, and trying to make sense of those data. Not an easy thing to do.

I thought the project area, purpose, and results were clearly presented in the paper. My main point of concern, as a reader, was that it would be useful to have a better understanding of HOW the authors classified the artifacts/tools into specific periods. This is described (written) in the methods section, but perhaps adding a flow chart, table, or figure would better visually show their decision making (classification) process, since every inference follows this important classification process.

For instance, core and tool types make sense for temporal classification folllowing conventional approaches (morphology, retouch, etc). However, I was not sure how/why vein quartz should lead to classification as from the Middle Paleolithic era. Here in North America, expedient vs more curated technologies might explain raw material selection (quality, abundance, cost of acquistion), but that is rarely linked exclusively to a period (such as the Middle Paleolithic). I think the paper could be improved by discussing how/why expedient raw material technologies are associated with the Middle Paleolithic – is it restricted mobility? Lack of knowledge of more distance sources? No need for predictable, higher quality knappable sources? Is this pattern common throught the local area, greater region?

I thought the paper was easy enough to follow, especially if it is written in a non-native language (I do not know if that is true or not). There are some word/phrasing choices that could be improved with an editor, but really none of them were significant enough that I didn't understand the message that was being conveyed. The authors are to be commended for publishing this paper for an international audience.

In my attached file, I used track changes and comments to list my thoughts/ideas on the manuscript. I hope they are of use in tightening up the paper.

Based on my review, I do recommend the paper be published with minor revisions. I think publishing this paper would encourage others to utilize survey-level surface data in landscape level analysis.

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Reviewed by anonymous reviewer 1, 16 November 2023

Recommendation

I recommend this manuscript be published in PCI Archaeology *after major revisions*.
I greatly appreciate the authors efforts to extrapolate behavioral interpretations from the many surface collections on Trino hill and fill in a regional knowledge gap. I have extensive experience working with palimpsest surface lithic assemblages and am admittedly jealous that they have multiple temporally diagnostic artifact types that enable them to characterize technological strategies through time. I do, however, think the data presentation could be better organized to improve flow and allow for additional interpretations in the Discussion. Organizing the Discussion section by temporal unit (separate headers), using the detailed patterning highlighted in the description of each RIT, might achieve this.General Comments

• The manuscript contains many grammar, syntax, misspelled words, and less than ideal word choices. I'd encourage the editor to assist the authors with this endeavor.
• The text has several single sentence paragraphs. My training was to avoid such paragraphs, so I'd encourage the authors to consider linking those to another paragraph or adding another sentence. Just a consideration as there might be other perspectives on paragraph configuration.
• When describing artifacts in the text it would be helpful to note the figure number and associated letter so the reader can more easily find that image without searching the figure caption.
• The figure and table captions should be closely reviewed for consistency and punctuation.
• Most graphs lack y-axis labels (i.e., "Frequency" for the bar charts and, I presume, millimeters ["mm"] next to Width). "Length" is misspelled on the scatter plot. The scatter plots might also benefit from statistical copy (e.g., R2) so it's clear how much emphasis to place on the interpretation.
• "70s", "80s", and "90s" should be converted to "1970s", "1980s", etc.
• Artifact descriptions for the RIT's are sometimes awkward. Many paragraphs begin with a statement of interpretation before the data are presented. I suggest writing more inductively such that the data are presented in a way that leads to the conclusion/inference. Another way around this is to improve on the topic sentence of each paragraph.Specific Comments

Lines 1-5 – the title is really long and should be shortened. Having a two sentence title is awkward and unnecessarily increases the length. Perhaps the first sentence could be dropped with a little additional editing to the second sentence for clarity.
Line 50 – consider adding country boundaries to Figure 1. This will make it easier to follow the text, especially for those who are unfamiliar with that part of Europe.

Line 88 – what does "W-E" refer to in relation to "S2? I assume west-east but am unsure and don't see it on Figure 4.
Line 201 – add Munsell color for the soil descriptions. The Munsell colors are provided in the Discussion section, but not here. I suggest in a later comment that the associated paragraph in the Discussion be moved to this section.
Line 218 – I don't see the location of the biface marked on Figure 5 and it isn't clear from the text.
Line 223 – I'm wondering whether the section beginning Line 798 might fit better here as a summary of expectations. That is, this text could be used to generate expectations for where the different age artifacts should be found. Doing so would provide more context for the artifact descriptions by RIT and would allow the authors to "test" the model. Also, the paragraph beginning Line 798 is a bit tough to follow but could possibly be easier to understand if it were closer to the original discussion.
Line 229-230 – please better justify why you are including artifacts away from the RIT. I think it would make a stronger case if the artifact analysis was entirely related to RIT. I think you include these data so that later in the paper you have something to compare to, but I think this just confuses the issue and I would rather see the analysis focused solely on RIT. Perhaps in the discussion you could include basic findings from outside the RIT to make your point OR just more clearly indicate why the non-RIT artifacts are included here/now and that's probably OK.
Line 250 – please briefly define or describe what S.S.D.A is as not everyone will know what this is.
Lines 274-290 – is your method/criteria for identifying artifacts to time period established protocol or is this a novel approach? I think this should be clarified. I also think that creating a simple table that stipulates which artifact types represent direct evidence for each temporal period would be helpful. This is clear enough from the text and descriptions, but having a simple reference table would help the reader keep track of the expectations. Also, how do temporally nondiagnostic artifact types fit in this (e.g., debris)?
Lines 321-327 – I think this paragraph could be deleted. It's hard to understand this summary without more context and without data to support the finding.
Line 597 (and elsewhere) – by "large" flakes do you by chance mean "wide"? If not, please clarify.
Lines 636-651 – this paragraph should be reorganized so that it focuses on the MP assemblage, which seems

to be the topic sentence of the paragraph but rather the focus is on the Neolithic. Is “collocation” the right word in this paragraph?
Line 704 – “siret”??
Lines 717-723 – Any way to include more behavioral interpretations like this paragraph in the other RIT sections. Here the authors infer interesting behaviors that follow from the detailed descriptions of the artifacts. Including more such behavioral interpretations would improve the manuscript and provide more context for the detailed artifact descriptions. I know that sample size of this RIT allows for this, but are there others that could be interpreted similarly?
Lines 856-860 – it would be helpful to provide the percentage of and/or frequency of artifacts assigned to each of the 5 groups. These data could also be summarized in a table and perhaps even a pie chart or similar type of figure to visually display the patterning. The paragraph below might possibly work better if attached to this paragraph.
Lines 867-872 – I agree with the implications of this paragraph but think it should be expanded or elaborated on a bit to better describe the patterning. One way to do this might be to tie the temporal results into the proposed temporal model expectations that currently begin Line 798.
Lines 949-952 – you suggest that Trino hill functioned mainly as a residence/hunting camp through time. I am wondering, however, if that’s the case, then why are there so few tools? My experience is that residential sites tend to have a somewhat high proportion of broken/exhausted tools, though length of occupation and specific site activities affect this pattern. Thus, I am wondering, given the seemingly high proportion of tool production debris and presence of raw stone, whether a quarry and workshop function also should be considered for the locally outcropping materials? That is, perhaps these surface collection areas/sites, as palimpsests (artifacts from different occupations and/or time periods), represent different functions through time (i.e., perhaps some periods of time represent quarry/workshop activities but other periods of time residential sites) or even by raw material type? It seems like the authors have these data and could address this, especially as a way to try and disentangle the palimpsest nature of these assemblages. That could prove interesting.

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