

Interactive comment on “Hominin responses to environmental changes during the Middle Pleistocene in Central and Southern Italy” by R. Orain et al.

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Received and published: 28 December 2012

The authors give a very good overview of Central and Southern Italian archaeology, palaeofauna and –flora, and display the wide ecological flexibility of Middle Pleistocene early humans in this area. This is an important issue, and such a compilation was highly needed. The manuscript is very well written and well structured, and I have only some minor remarks to it. Besides some technical points (see below), there is only one question that I would like to raise:

The authors argue that edaphic conditions and related local humidity can be responsible for the local persistence of forests also during glacial periods, which in turn can

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serve as refuge areas for early humans in the region. This may well be. However, the argument is not straight forward that sedimentology documents such local humidity by the occurrence of lake or river deposits. Generally, most pollen profiles stem from lake sediments as the best pollen archives and therefore always provide aquatic and riparian taxa (e.g. Bertini, A., 2000. Pollen record from Colle Curti and Cesi: Early and Middle Pleistocene mammal sites the Umbro-Marchean Apennine Mountains (central Italy). *Journal of Quaternary Science* 15, 825-840). Nevertheless, not every water body influences the local climate in the way discussed here. Thus, I cannot see “singular conditions” in the occurrence of aquatic taxa (page 5188 line 17).

page 5185, line 8: “. . .records an abundant faunal remains. . .” delete “an”

page 5188, line 13, and figure 3 and 4: “synthetic pollen diagram” use “synthesized”

page 5188, line 22: “the overall milder climate” compared to what? I assume to Northern Italy. Please specify here and page 5193 line 12.

page 5188 line 25 ff: the thematic jump from the specific Boiano pollen profile to a general overview in figure 4 is a bit confusing. And, the discussion of the figure is not very clear. “the last occurrence of Tertiary relicts was not recorded at the same time all along the peninsula. . .” Please be more specific. If you write “Tsuga disappeared during OIS 13” this means Tsuga disappeared at the same time everywhere in Italy. Which is exactly the point you want to make here? The diachronous disappearance of different relict taxa? How does this fact contribute to your argument of emerging heterogeneous environments?

Also the caption of figure 4 is not clear. Which “studied palynological sequences”, studied by whom?

page 5203 table 2: what is “closed grassland”? better use “grassland”

page 5204 Figure 1 “studied archaeological sites” better use “compiled” or “selected” You did not study those in this paper.

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