

Letters to the Editor

A Forum for Commentary on Articles and Research Issues

An Evaluation That Misses the Mark

A recent paper by Riel-Salvatore, Miller, and Clark (2008) attempts to provide an empirical evaluation of the dispute between Mellars and colleagues (Mellars 2004, 2005; Mellars and Gravina 2008; Mellars et al. 2007) and Zilhão and colleagues (Zilhão 2007; Zilhão and d'Errico 1999; Zilhão et al. 2006, 2008) concerning the nature of the stratigraphic succession at the Châtelperronian eponymous site, Grotte des Fées de Châtelperron. In this present comment, I take no position in this dispute other than a sincere agnosticism concerning the stratigraphy of the Grotte des Fées. It is, however, clear to me that the Riel-Salvatore, Miller, and Clark article (hereafter RMC) does not, in fact, perform an adequate "empirical evaluation" of the dispute, and it provides no relevant new data that would permit a choice to be made between the conflicting positions.

The fundamental flaw in the RMC paper is the way the authors use (and misuse) artifact type counts based on the de Sonneville-Bordes and Perrot 92-type list from the 1950s (Sonneville-Bordes and Perrot 1954, 1955, 1956a, 1956b). This is, at the best of times, a rather blunt instrument, but its utility has been further diminished by the way it has been used here. One problem, probably more symptomatic than consequential, is the apparent misdefinition of the Aurignacian scraper index, IGA, as involving Types 11–15. The defining paper of de Sonneville-Bordes and Perrot (1953), which is the one cited by RMC, specifies that IGA includes Types 11–14, excluding Type 15 (*grattoir nucléiforme*). The exclusion is appropriate, because so-called nucleiform scrapers are not "Aurignacian diagnostics."

Another problem is RMC's treatment of *rabots* (Type 16) and bilaterally retouched blades (Type 66). They include these artifact types in what they call a "modified Aurignacian index" (MGA), adding them to the types in the Aurignacian group index (GA) of de Sonneville-Bordes and Perrot. GA as defined includes Types 4, 6, 11–14, 32, 67, and 68 (Sonneville-Bordes and Perrot 1953: 327). Types 16 and 66 were added by RMC for two reasons. First, they claim that both types were illustrated by Gravina, Mellars, and Bronk Ramsey (2005: 53, Figure 2) as "Aurignacian artefacts" from the Grotte des Fées. This is incorrect. None of the pieces in that figure can be called a *rabot* in the sense of Type 16, and the bilaterally retouched blades illustrated would be assigned to Type 67, not Type 66.

The second reason for creating an MGA that includes Types 15 and 66 is that Demars and Laurent (1989: 48–49, 76–77) included what they called *rabots* and *lames retouchées* in their 1989 typology as types that are often found in Aurignacian assemblages. Despite the use of similar names, these forms do not cover the same range of morphological

variation as the de Sonneville-Bordes and Perrot taxa. In any case, it is methodologically inappropriate to mix disparate typologies like this.

A final comment on the typological makeup of RMC's modified Aurignacian index (MGA) is their inclusion within it of Type 5, the end-scraper on a marginally retouched blade. This *could* include end-scrapers with so-called Aurignacian marginal retouch, but if the typology is used correctly, such pieces would be classed as Type 6, reserving Type 5 for artifacts that are *not* distinctive Aurignacian tools.

The comparisons of type frequencies offered by RMC seem to be inconsistent in at least one respect. They say that according to Zilhão et al. (2006: 12646, Table 4) "'Aurignacian diagnostics' account for 8.6 per cent (or 5/58) of all retouched pieces in Level B4." However, the Zilhão et al. table shows 4 Aurignacian of 51 total retouched pieces (7.8%) in B4 or 5 of 61 (8.2%) in B4 + B4a combined. Now admittedly these latter figures are close to what RMC report, but they are not the same. Why is this?

Moving beyond the obvious problems with the use of the type list, we can now examine the conclusions drawn by RMC from their analysis. It seems that, in broad terms, they accept that between 8% and 9% of the retouched pieces in Level B4 are "Aurignacian diagnostics." This information, which is based on the recent detailed examination of the relevant material by Zilhão and his colleagues, should be accepted as correct. However, the RMC authors go on to say that "the frequency of 'Aurignacian' tools at Châtelperron is not abnormal for a Châtelperronian assemblage." The data of their Table 1 cannot be used to support this conclusion. Their MGA and MGA* are conceptually flawed (as discussed above) and must be ignored. If we limit consideration to those types originally included by de Sonneville-Bordes and Perrot in their Aurignacian group index, GA, plus Type 90, the *lamelle Dufour*, which is now generally accepted as an Aurignacian diagnostic, the message of Table 1 is clear. Percentage frequencies of Aurignacian pieces in the 19 tabulated assemblages other than the Grotte des Fées range from 0 to 7.2, with a mean of 1.9% and a standard deviation of 2.2%. The frequency of Aurignacian pieces in Level B4 is indeed abnormal for a Châtelperronian assemblage.

The type-frequency data of Harrold (1978) that were used in the RMC paper are good, but many of the samples are small. There have been for several decades published data on a much larger Châtelperronian series from the site of Les Tambourets, which has no known Aurignacian occupation. Méroc and Bricker (1984) reported on a large surface collection from the site (3,510 retouched pieces) and a smaller excavated series (584 pieces). The frequencies of

Aurignacian tools (= GA) are 1.77% in the surface collection and 2.15% in the excavated series (1984: 58–61, Tableau II), frequencies very much in line with the mean of the RMC sample of sites and very far from the 8% or more at the Grotte des Fées.

The latter part of the RMC paper, concerning mobility patterns and other behaviors, is of dubious relevance because the data on which it is based (interpretation of type frequencies) are so flawed. The elegance and currency of the theory cannot overcome the empirical weakness.

In a sense, the most disappointing aspect of the RMC paper is its lack of a meaningful conclusion. Time and time again its authors speak of “putative Aurignacian tools,” but do they really doubt that at least most of the objects in question are products of an Aurignacian tool-making tradition? If they do, then they have written the wrong paper. If they *are* Aurignacian objects—typologically and technologically distinct and made on different and exotic raw material—then how did they get into the Grotte des Fées? The authors’ answer is that “the presence of such artifacts is best explained as the result of both sample size and forager mobility patterns.” But if we are dealing here with truly Aurignacian artifacts, sample size is not the answer (increasing the size of a sample of oranges is not going to produce a few apples). The “forager mobility patterns” explanation is so general as to be nonexplanatory. Despite its title, this paper sheds no light on the dispute about the stratigraphic sequence at the Grotte des Fées.

REFERENCES

- Demars, Pierre-Yves and Pierre Laurent. 1989. *Types d'outils lithiques du Paléolithique supérieur en Europe*. Centre National de la Recherche Scientifique, Centre Régional de Publication de Bordeaux, Cahiers du Quaternaire, 14. Paris, Editions du C.N.R.S.
- Gravina, Brad, Paul Mellars, and Christopher Bronk Ramsey. 2005. Radiocarbon dating of interstratified Neanderthal and early modern human occupations at the Chatelperronian type-site. *Nature* 438: 51–56.
- Mellars, Paul. 2004. Neanderthals and the modern human colonization of Europe. *Nature* 432: 461–465.
- Mellars, Paul. 2005. The impossible coincidence. A single-species model for the origins of modern human behavior in Europe. *Evolutionary Anthropology* 14: 12–27.
- Mellars, Paul and Brad Gravina. 2008. Châtelperron: theoretical agendas, archaeological facts, and diversionary smoke-screens. *PaleoAnthropology* 2008: 43–64.
- Mellars, Paul, Brad Gravina, and Christopher Bronk Ramsey. 2007. Confirmation of Neanderthal/modern human interstratification at the Chatelperronian type-site. *Proceedings of the National Academy of Sciences, USA* 104: 3657–3662.
- *Méroç, Louis and Harvey M. Bricker. 1984. L'industrie lithique châtelperronienne des Tambourets (coll. Méroç) à Couladère et Saint-Christaud (Haute-Garonne). *Bulletin de la Société Préhistorique de l'Ariège* 39: 45–83.
- Riel-Salvatore, Julien, Alexandra E. Miller, and Geoffrey A. Clark. 2008. An empirical evaluation of the case for a Châtelperronian-Aurignacian interstratification at Grotte des Fées de Châtelperron. *World Archaeology* 40: 480–492.
- de Sonneville-Bordes, Denise and Jean Perrot. 1953. Essai d'adaptation des méthodes statistiques au Paléolithique supérieur. Premiers résultats. *Bulletin de la Société Préhistorique Française* 50: 323–333.
- de Sonneville-Bordes, Denise and Jean Perrot. 1954. Lexique typologique du Paléolithique supérieur. Outillage lithique: I Grattoirs—II Outils solutréens. *Bulletin de la Société Préhistorique Française* 51: 327–335.
- de Sonneville-Bordes, Denise and Jean Perrot. 1955. Lexique typologique du Paléolithique supérieur. Outillage lithique—III Outils composites—Peçoirs. *Bulletin de la Société Préhistorique Française* 52: 76–79.
- de Sonneville-Bordes, Denise and Jean Perrot. 1956a. Lexique typologique du Paléolithique supérieur. Outillage lithique—IV Burins. *Bulletin de la Société Préhistorique Française* 53: 408–412.
- de Sonneville-Bordes, Denise and Jean Perrot. 1956b. Lexique typologique du Paléolithique supérieur. Outillage lithique (suite et fin)—V Outillage à bord abattu—VI Pièces tronquées—VII Lames retouchées—VIII Pièces variées—IX Outillage lamellaire. *Pointe azilienne*. *Bulletin de la Société Préhistorique Française* 53: 547–559.
- Zilhão, João and Francesco D'Errico. 1999. The chronology and taphonomy of the earliest Aurignacian and its implications for the understanding of Neanderthal extinction. *Journal of World Prehistory* 13: 1–68.
- Zilhão, João, Francesco D'Errico, Jean-Guillaume Bordes, Arnaud Lenoble, Jean-Pierre Texier, and Jean-Philippe Rigaud. 2006. Analysis of Aurignacian interstratification at the Châtelperronian-type site and implications for the behavioral modernity of Neanderthals. *Proceedings of the National Academy of Sciences, USA* 103: 12643–12648.
- Zilhão, João, Francesco D'Errico, Jean-Guillaume Bordes, Arnaud Lenoble, Jean-Pierre Texier, and Jean-Philippe Rigaud. 2008. Grotte des Fées (Châtelperron): history of research, stratigraphy, dating, and archaeology of the Châtelperronian type-site. *PaleoAnthropology* 2008: 1–42.

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