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About the age of the Chauvet rock art

Robert G. Bednarik

Abstract. The Chauvet Cave rock art in southern France can reasonably be regarded the most beautiful cave art in the world, and certainly as the most sophisticated. Its chronological position at the very beginning of the European Upper Palaeolithic art tradition, rather than at its end, destroys all models of an evolutionary development of this art, from the most primitive to the most complex. Rather, the most complex appears first. This collapse of the traditional model has prompted a few critiques of the dating of this cave art. Here, it is explained why the dating is valid, and in fact probably understates the true age of this art. It is also shown that, in view of the most recent developments in European dating of human remains of the period, the probability that the Chauvet rock art was created by Neanderthal-like hominins is much greater than the alternative, that it was made by anatomically modern people. This renders the African Eve or replacement model of Europe soundly refuted, and suggests that the origins of art have been hopelessly misunderstood by mainstream archaeology — as has also been shown in India recently, by the EIP Project.

The most painstakingly studied and perhaps also the most pristine Palaeolithic cave art site known is Chauvet Cave in the French Ardèche (Chauvet et al. 1995; Clottes 2001). The standard of the fieldwork being carried out there is peerless (Bednarik 2005). The site's rock art is also the best-dated of the Palaeolithic sites so far subjected to any form of scientific dating (Clottes et a. 1995; Valladas et al. 2004). Interestingly, the Chauvet Cave dating endeavours have attracted more sustained criticism than any of the other attempts to date European Pleistocene cave art (Zuechner 1996; Pettitt and Bahn 2003). The reason for this is that the Chauvet results have severely challenged the traditional stylistic chronology of Upper Palaeolithic rock art (Bednarik 1995). There is considerable disagreement on this point, with some authors defining Chauvet as blending in well with aspects of style and content of secure Aurignacian art, such as the series of portable objects from south-western Germany, while others reject the Aurignacian antiquity of Chauvet on the basis of their individual stylistic constructs, and favour its placement in the Magdalenian.

It is very healthy to subject scientific propositions to falsification attempts, and all current dating claims for rock art, anywhere in the world, are tentative and based on experimental methods. They are presentations of testable data, and need to be interpreted in the context of the considerable qualifications that apply to them all (Bednarik 2002). However, the use of stylistic argument (i.e. rhetoric based on untestable cognitive processes involving autosuggestion) needs to be questioned. The issue is not whether stylistic constructs are valid; the issue is that they are intuitive. To see how such revisionist efforts fare in the case of Chauvet Cave, I offer the following for consideration.

Among the 3703 identified faunal remains found on the floor surface of the extensive cave, those of the cave bear account for 91.8% (Philippe and Fosse 2003), and there are about 315 identifiable cave bear hibernation pits preserved in the cave. Clearly it was a bear hibernation site, like thousands of others across Europe (Bednarik 1993), and probably so for tens of millennia. The most recent cave bear finds in the main cave are about 24 000 years old, while the Salle Morel appears to have remained open to that species until 19 000 years ago. The timing of the collapse of the cave entrances is confirmed by the recent dating to 18 000 BP of a stalagmite grown on one of the uppermost collapse boulders inside the blocked original entrance. The collapse must have occurred significantly earlier, and since about 24 000 years ago, the cave was only entered by small animals, such as snakes, martens and bats. On present evidence a Magdalenian age of the rock art is therefore precluded by this context. It is also precluded by the simple fact that clear depictions of cave bears occur in Chauvet, and that this species is thought to have been extinct in the region by the beginning of the Magdalenian (Rabeder et al. 2000: 107).

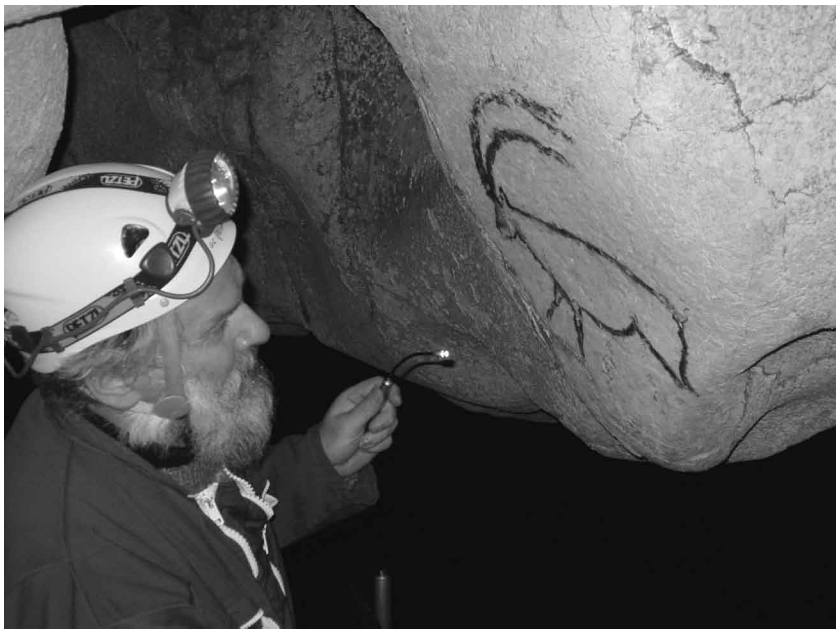

Figure 1. *The author working in Galerie des Mégacéros, Chauvet Cave photograph by J. Clottes).*

So far, three instances of anthropic deposition of cave bear remains have been observed on the cave floor, two in the Salle des Bauges and one in the Salle du Crâne (Clottes 2001; Bednarik 2005: Fig. 1). They are of importance to the relative dating of the human activity in the cave. Evidence for cultural placement of cave bear skulls and long-bones has been reported from many caves, especially in central Europe, but it is temporally restricted to the final Mousterian and Aurignacoid traditions, most notably the Olschewian (Abel 1931; Andrist et al. 1964; Bächler 1940; Bayer 1924, 1928, 1929a, b, 1930; Bednarik 1993, 2007; Bégouën and Breuil 1958; Brodar 1957; Cramer 1941; Ehrenberg 1951, 1953a, b, 1954, 1956, 1957, 1958, 1959, 1962, 1970; Kyrle 1931; Malez 1956, 1958, 1965; Mottl 1950; Rabeder et al. 2000; Rakovec 1967; Stehlin and Dubois 1916; Trimmel 1950; Trombe and Dubuc 1946; Tschumi 1949; Vértes 1951, 1955, 1959, 1965; Zotz 1939, 1944, 1951). This cave bear 'cult', as it was unfortunately called in the mid-20th century, remains unrefuted, despite the endeavours of Koby (1951, 1953; Koby and Schaefer 1960) and others (Jéquier 1975). Generally, this evidence is in excess of 30 000 years old at the known sites, and if the finds in Chauvet are of the same tradition, which seems very likely, the first phase of the cave's human use must also predate that time. That does not necessarily prove that the cave's early rock art phase has to be of the same period, but the onus to demonstrate that it is not is on those rejecting the Aurignacian attribution of this art. No such refuting evidence has been offered, and the doubters seem to be inspired by traditional stylistic reasoning alone.

Some of their arguments are mistaken or simply false:

> Nevertheless, the rock and cave art which is definitely known to be Aurignacian looks pretty crude and simple, a long way from Chauvet — which of course is why the Chauvet dates caused such a shock. […] what are the chances that a single Aurignacian cave would contain so many different features, themes, styles and techniques which, over a hundred years of study, have become so strongly and indubitably associated with later periods? (Pettitt and Bahn 2003: 139)

Very little rock art can be attributed to the Aurignacian (or for that matter to any other period, anywhere in the world) with adequate confidence to make such sweeping claims. The conceptually most complex portable art of the Upper Palaeolithic is of the Aurignacian, including the two therianthropes from Swabia (Hohlenstein-Stadel, Schmid 1989; and Hohle Fels, Conard et al. 2003) and the anthropomorph from Galgenberg (Bednarik 1989), so why should we be 'shocked' to observe a similar level of sophistication in Aurignacian rock art? (See Fig. 2) 'Aurignacians' seem to have been somewhat interested in 'dangerous animals' and vulvae, and these do feature prominently enough in Chauvet. More-

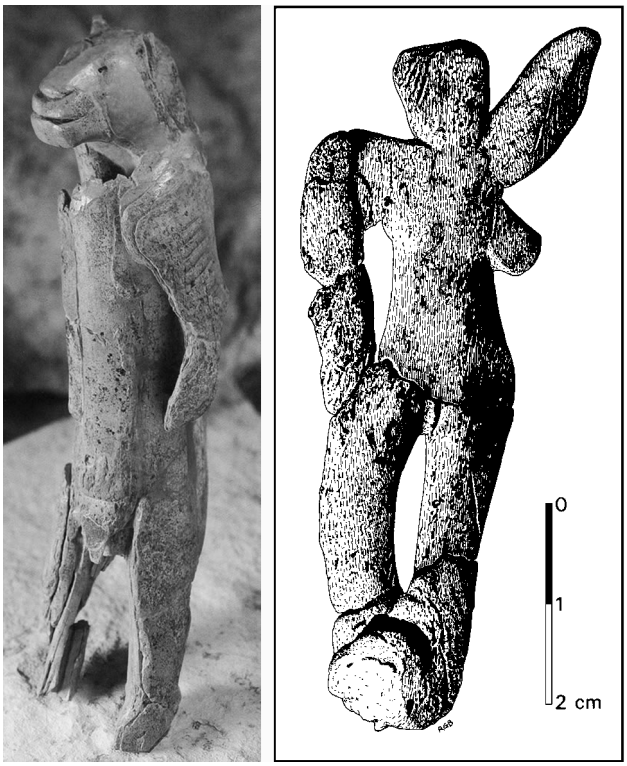

Figure 2. *The Hohlenstein-Stadel therianthrope of ivory (on left) and the Galgenberg female serpentice sculpture (right). Both are about 32 000 years old and of the Aurignacian.*

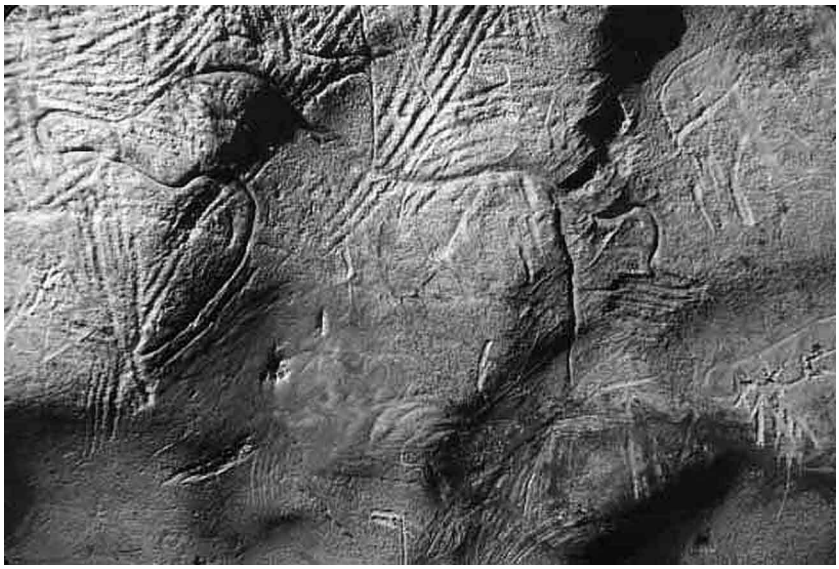

Figure 3. *Petroglyph and finger flutings in Bauma Latrone, southern France, very probably of the Aurignacian.*

over, it is obvious that Chauvet comprises two art traditions, so the variety of content and techniques is also no surprise to those with an open mind. Finally, Chauvet is certainly not alone. I have long considered the early phase of the cave art in Baume Latrone to be of the Aurignacian (which is also very complex, see Fig. 3; Bégouën 1941; Drouot 1953; Bednarik 1986). Moreover, the small corpus of l'Aldène, reflecting the principal faunal elements in the Chauvet art, was created before the decorated passage became closed 30 260 ± 220 BP (Ambert et al. 2005: 276–7; Ambert and Guendon 2005). Other sites will no doubt be found to belong to those early traditions, and the stylistic daters will need to significantly revise their ideas of Aurignacian art.

It is more appropriate to ask, what are the chances that Zuechner's idea, that all of the charcoal images so far analysed in Chauvet are derived from fossil wood, is correct. There are over forty radiocarbon dates from the site now, including of charcoal from the floor. Far more likely than the involvement of fossil wood would be the use of much earlier charcoal, but that argument is not even made in respect of Chauvet, perhaps because some of the dates come from torch marks. The possibility of a systematic error in all of these internally or stratigraphically consistent dates, implied by Pettitt and Bahn, is also specious: why should this affect all the dates from Chauvet, but none of those they are in agreement with from other sites? Their argument can be made if they presented some evidence that points to a systematic distortion at just the one site, but without such data their case remains one of *ignoratio elenchi* (mistaken refutation) or is supervenient upon the empirical data.

The real problems with Chauvet are not even considered by the critics of the dating attempts, who seem only concerned with salvaging a stylistic chronology. Two issues are of paramount importance: all carbon isotope determinations of the European Late Pleistocene Shift in southern Europe need to be considered sceptically, because of the effects of the Campanian Ignimbrite event and the cosmogenic radionuclide peak about a millennium or two earlier (Fedele et al. 2002). The best available ^{14}C determinations for the CI eruption place it between 35 600 ± 150 and 33 200 ± 600 carbon-years BP (Deino et al. 1994), but the true age of the event is thought to be 39 280 ± 110 BP, derived from a large series (36 determinations from 18 samples) of high-precision single-crystal $^{40}Ar/^{39}Ar$ measurements (De Vivo et al. 2001). Alternatively, Fedele and Giaccio (2007) have proposed that a significant volcanogenic sulfate signal in the GISP2 ice core, occurring precisely 40 012 BP, represents the Campanian eruption. Therefore, in southern France, carbon isotope dates only marginally lower than the carbon age of the CI event may well be several millennia too low, and the true age of the early Chauvet phase could theoretically be as high as 36 to 38 000 BP.

The second important issue to be considered is, what kind of people made the Chauvet art? Now that the only securely dated 'anatomically modern' human remains in Europe are 27 700 years or younger, earlier dated finds should be considered to be of Neanderthals. The entire issue of dating nearly all Würmian human remains from Europe has undergone incredible changes in just the last few years. For instance, the sensational exposure of all datings by Professor R. Protsch as fraudulent means that there are now no post-Neanderthal remains in Germany that are more than 16 000 years old (Bednarik 2007). The recently dated Mladeč fossils, between 26 330 and 31 500 carbon years old (Wild et al. 2005), lack credible stratigraphic provenience and are not modern, but intermediate between robust and gracile *Homo sapiens* (Fig. 4a, b). The same applies to some degree to the Cro-Magnon specimens (Fig. 4c), which in any case now appear to be of the Gravettian rather than the Aurignacian (Henry-Gambier 2002). The similarly ambiguous Peştera cu Oase mandible (Trinkaus et al. 2003) and the subsequently found facial bones from a different part of the same large cave, thought to be 35 000 years old, are both without archaeological context and also neither modern nor Neanderthal (Fig. 4d, e). Much the same applies to the six human bones recently dated from another Romanian cave, Peştera Muierii (Fig. 4f), which are clearly intermediate between robust and gracile Eu-

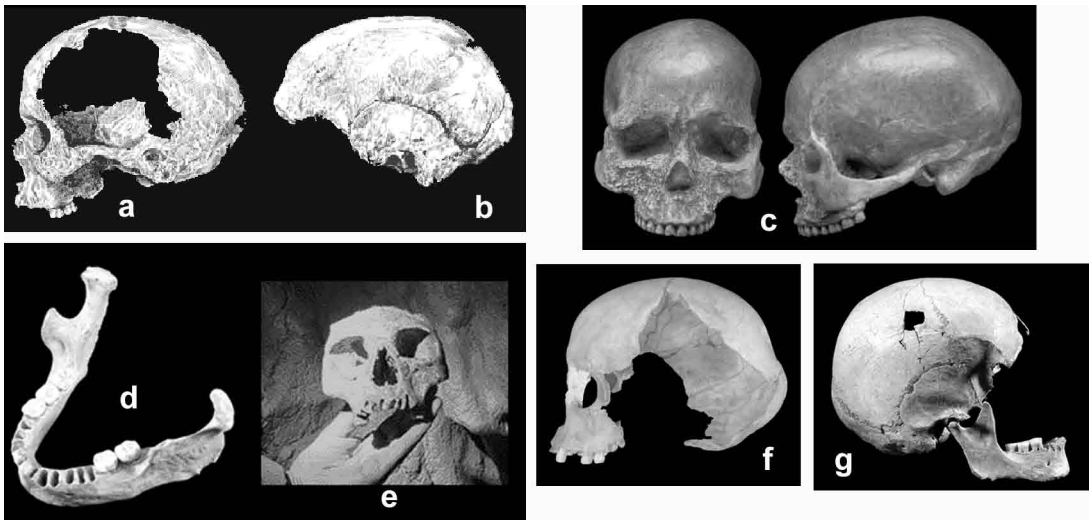

Figure 4. *European hominin remains from: (a and b) Mladeč Cave, Czech Republic; (c) Cro-Magnon, France; (d and e) Peştera cu Oase, Romania; (f) Peştera Muierii, Romania; (g) Vogelherd, Germany. Specimens a to f are between 27 000 and 35 000 years old and are intermediate between anatomically modern people (Graciles) and Robusts such as Neanderthals. Specimen g is of the Neolithic and fully modern, not 32 000 years old as has been claimed widely.*

ropeans (Soficaru et al. 2006). The four specimens from Vogelherd, however, are clearly modern (Fig. 4g), but their claimed age of 32 000 years has now been rejected convincingly: they are Neolithic and are all between 3980 and 4995 years old (Conard et al. 2004). The 'Neanderthaloid' Hahnöfersand skull, formerly 36 300 years old, is now Mesolithic (Terberger and Street 2003), and the Paderborn-Sande skull, also dated by Protsch, is not 27 400 years old, but only 238 years. Another specimen often cited by the African Eve advocates as an early modern, though still fairly robust individual is from Velika Pećina, now safely dated to about 5045 carbon years. The list goes on and on, and there are now virtually no reasonably 'modern' specimens in Europe prior to the Gravettian, but there are numerous Neanderthaloid finds up to 28 000 years ago. In five cases, Neanderthal remains have now been found in occupation layers containing the tools of early Upper Palaeolithic traditions: from the Châtelperronian of Saint Césaire and Arcy-sur-Cure, from the Aurignacian at Trou de l'Abîme, the Olschewian in Vindija Cave, and from the Jankovichian found in Máriaremete Upper Cave.

As the house of cards built by the African Eve advocates is collapsing, they have to prepare themselves for the possibility that not only the Aurignacian proper, but also the Bohunician, the Szeletian, the Olschewian (which I consider relevant to Chauvet), the Bachokirian, the Uluzzian, the Uluzzo-Aurignacian, the Proto-Aurignacian and the Altmühlian might all relate to humans other than their so-called 'moderns'. Twelve years ago I pointed out that we have no evidence whatsoever that the Early Aurignacian is the work of 'moderns', to which I can now add that the ethnicity of the makers of any stone tool tradition of the entire first half of the so-called Upper Palaeolithic — including the entire Aurignacian — appears to be that of robust, Neanderthal-like humans, or of their direct descendants. Chauvet Cave contains not only the world's most stunning cave art, it also contains thousands of human and animal tracks on its floor. Some of these are exceedingly well preserved, and in examining these closely I found that they appear to be of Neanderthals rather than anatomically modern humans (Fig. 5). Naturally the presence of Neanderthal footprints

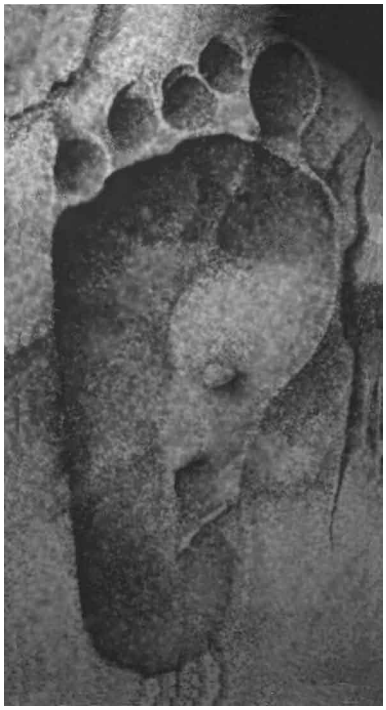

Figure 5. *Human footprint in Chauvet Cave, of an 8 to 10-year-old Neanderthaloid child.*

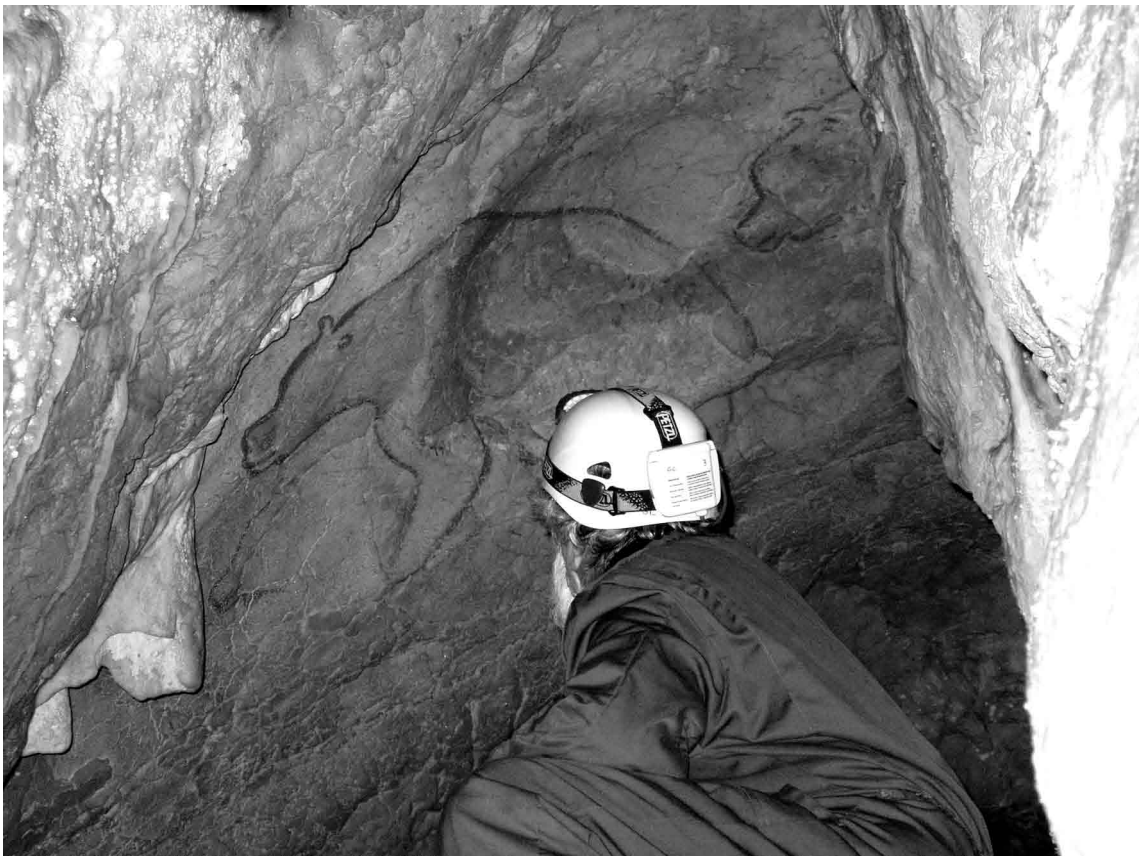

Figure 6. *The Chauvet panel of three highly naturalistic cave bear depictions, demonstrating that the artists were familiar with that species, which renders a Magdalenian age of the art out of the question (photograph: J. Clottes).*

does not prove that the rock art was also made by these people, but surely the possibility needs to be seriously considered. The traditional response, that the Neanderthals could have never been sufficiently advanced to produce such masterworks, is simply no longer adequate now that the Aurignacian appears to be a Neanderthal tradition.

European Pleistocene archaeologists need to adjust to this new scenario, and unless they can demonstrate that Chauvet was made by what they call 'moderns' or 'Cro-Magnons', they are obliged to equally consider the possibility that this art is the work either of Neanderthals or of their descendants who experienced genetic drift rather than 'replacement'. On the basis of the present archaeological and palaeoanthropological evidence, the latter scenario is the more likely: we have Neanderthal remains from the time, and we have no 'moderns'. Science works by falsification, and the proposition to be tested now is that the Chauvet art was created not by 'moderns'. The proposition of its Aurignacian age, too, can be tested — but not by facile and circular stylistic argument as has been proposed.

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