



# 'Out of Franco-Cantabria': The Globalization of Pleistocene Rock Art

# 2

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## Abstract

Since the second half of the twentieth century, globalization has transformed archaeology into a 'geoculture' (using Wallerstein's words) defined by the increasing circulation of ideas within a worldwide scientific community. This change has not only affected the ways in which new paradigms and methods are transmitted, but it has also significantly broadened the geographical boundaries of archaeological research. The example of Palaeolithic rock art can be used to illustrate the various dimensions of this transformation. In Europe, Pleistocene cave art was considered a phenomenon with a 'core' firmly embedded in the Franco-Cantabrian region and a 'periphery' which included some neighbouring areas, such as Southern Spain and Italy. Despite some discoveries in Russia (1957) and Bosnia and Herzegovina (1973), this reductionist view remained unchallenged until the beginning of the twenty-first century. Non-European sites were often disregarded and reduced to the status of 'outliers' in relation to the central core area, resulting in the limitation, rather than invigoration, of research in these regions. However, the new millennium has witnessed a significant increase in the number of European countries with well-dated Paleolithic cave art sites, including the United Kingdom and Romania, among others. Nevertheless, the greatest shifts in the field of rock art studies globally have emerged during the last decade with: (1) the discovery of Paleolithic rock art in locations very distant from the traditional European 'core' (e.g., Australia and Indonesia), and (2) the development of systematic archaeological rock art surveys in areas outside of the 'periphery' (e.g., Southeast Europe). Today, it is evident that Paleolithic rock art is a widespread global phenomenon. Despite this, a vast majority of teams and specialists are still focused

on the Franco-Cantabrian region, and they seldomly develop research in 'new' territories. Hence, globalization has led to an increasing awareness of the 'Franco-Cantabrian bias,' but has archaeological research changed accordingly?

## Keywords

Upper Paleolithic · Rock art · Eastern Europe · South-eastern Asia · Australia

## 2.1 'Ex occidente lux': Southwestern Europe as the Spiritual Reservoir of Paleolithic Societies

The emergence of Paleolithic art and symbolism is considered a major milestone in human evolution (e.g. Mellars 1989; Zilhão 2007). This is related to the fact that art has been traditionally regarded as one of the first expressions of symbolic and cognitive thought in human history (Mellars 1989; Mithen 1996; d'Errico 2003). The development of Paleolithic cave art and symbolism has often been considered a phenomenon with a 'core' firmly settled in the Franco-Cantabrian region and a 'periphery' which includes some neighbouring areas, such as central and southern Spain and Italy. A number of scholars from the first half of the twentieth century claimed that Franco-Cantabrian cave art was 'superior' to 'savage arts' (e.g., Breuil 1906, 135). Among these scholars, Breuil considered Levantine rock art to have stemmed from Paleolithic art (Breuil and Lantier 1951), linking it to an African tradition of – also Pleistocene – rock art (Breuil 1965). This conception changed drastically in the late 1950s and the 1960s. A. Laming-Empeire, first, and A. Leroi-Gourhan, later, highlighted the European 'nature' of Paleolithic art. Leroi-Gourhan, for instance, restricted Paleolithic cave art to France, Spain, and Italy (Laming-Empeire 1962, 162; Leroi-Gourhan 1965, 204). Despite a

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few discoveries located outside of this area (see Sect. 2.2), this conception of Paleolithic rock art as a geographically-restricted phenomenon was widely accepted until the early twenty-first century (Gamble 1984, 1991; Mithen 1991; Barton et al. 1994; Braudel 1998; Mellars 2006). Two main factors explain this fact. First, until the late twentieth century, research, and especially research in the social sciences, was grounded on Eurocentric biases, and rock art research was not an exception. Second, the focus on Franco-Cantabrian rock art was (and still is) fuelled by the impressive extent and richness of Paleolithic images in this part of the world. Several hypotheses have been proposed to explain this limited geographical distribution. For instance, M. Jochim (1983, 1987) developed an ecological interpretation of Paleolithic art, based on the consideration of southwestern Europe as a *refugium* for human groups from 25,000 BP onwards. This would have drastically increased the population of this area, resulting in an intensified use of rituals. According to this hypothesis, decorated caves would have acted as territorial markers and ritual places. The main problem with Jochim's argument is that he assumed that Europe was the only area that met all the requirements for the appearance of cave art (i.e. dense population, increasing sedentism and territoriality), something that is far from evident. Similarly, Paul Mellars (1985, 2006) linked the origins of cave art to the abundance of resources in Southwest Europe during the Upper Paleolithic (UP hereafter). According to Mellars, this led to human groups to become more socially and culturally complex, facilitating the creation of cave art in the region. Steven Mithen (1991) suggested that cave art would have functioned as a means of information exchange between hunters stalking animals. This cooperation would have been triggered by the overexploitation of game, resulting in the dense population of southwestern Europe during the UP. Once again the emergence of cave art is intimately linked to the particular conditions of the Franco-Cantabrian region. The 'information exchange approach' also stressed that "the appear[ance] of parietal art in the Late Pleistocene Europe resulted from the closing of social networks under conditions of social population density" (Barton et al. 1994, 199). Additionally, it is interesting to note that most of the abovementioned works take for granted that UP rock art was a Western-European phenomenon and they tried to provide an explanation for this *fact*. In this setting, it is legitimate to wonder whether recent claims about Neandertal rock art (that are based on limited archaeological evidence, please see Hoffmann et al. 2018) are not the last attempt to save the privileged position of Europe in rock art research. In any case, evidence for Paleolithic rock art outside of Southwest Europe has existed for over 60 years now and the number of known sites has increased considerably during the last 20 years. Wherever and whenever modern humans first created rock art, it is now clear that rock images are something of a global phenomenon.

## 2.2 First Discoveries Beyond the 'Cynosure'

More than 50 years after the recognition of Altamira (Cartailhac 1902) and 80 years after its discovery (de Sautuola and Marcelino. 1880), cave art was still considered to be almost exclusive to Spain, France, and a few sites in Italy. However, in 1959, one discovery changed the geography of cave art. Interestingly, the find did not occur in the margins of southwestern Europe (as one would have been expected), but a few thousand kilometres away in the Ural Mountains in Russia. While working at the Pribelsky branch of the State Natural Bashkir Reserve, zoologist A.V. Ryumin found a number of Paleolithic paintings in Kapova cave. More specifically, he reported the discovery of many zoomorphic figures: "Cave bear, wolf, fox, bison, antelope, cave-lion, horses, a mammoth, and [a] sabertoothed tiger" (as cited in Bader 1963, 27). He was convinced of the Paleolithic age of the artwork, and his discovery attracted the attention of several Soviet prehistorians who visited the cave. When examining the artwork, they realized that most were "tricks of nature; the light and shadow of the primordial cave had played upon Ryumin's zoological imagination" (Kunichika 2018, 118). At the same time, they inferred that a few of the images (in particular those from the main panel in the Chamber of Paintings) were likely UP paintings. The government of the Soviet Union sponsored research at the site, and O.N. Bader was designated to direct a number of archaeological campaigns (1960–1978) seeking to document the rock images and examine the cave's archaeological deposits. These led to the discovery of more than fifty paintings in the middle and upper levels of the caves, which were then cleaned of modern graffiti and calcite layers. The excavations revealed additional evidence of human presence in the cave during the UP (Zhitenev 2018). Based on the presence of extinct Pleistocene species among the represented fauna (woolly mammoth and rhinoceros), the close spatial relationship between the archaeological contexts and the paintings, as well as the strength of the formal analogies with Paleolithic cave paintings from Southwest Europe, Bader consistently argued for the Paleolithic age of the artwork (Bader 1963). Thus, the influence of some early works on cave art that had been translated into Russian (including those of Piette, Breuil, and Reinach) and the role of Western archaeologists (Bader presented his first works on the cave at the IV UISPP world conference in Moscow in 1962) played an important role in the authentication of Kapova's art. Although the UP age of the painting was never called into question, the discovery of Kapova had a little impact in the work of Western archaeologists. For instance, in two seminal books on the study of cave art published during the 1960s, Laming-Emperaire (1962) did not mention Kapova, and Leroi-Gourhan (1965) only briefly referred to the site.

Interestingly, the site *is* mentioned by historian Fernand Braudel in *Memory and the Mediterranean* (a posthumous publication): “[Recent discoveries] in a cave at Kapovaya (sic) in the Urals, seem to indicate that they [cave paintings] cover the same territory as the Venuses of the Gravettian era” (Braudel 1998, 31). Nevertheless, he did not question the eminent place of the Franco-Cantabrian province in cave art: “France and Spain are nevertheless (but why?) the unchallenged centres of an art which is thought to date from the Aurignac to the Magdalenian eras” (Braudel 1998, 31).

In 1974, local people from the town of Stolac (Bosnia and Herzegovina) discovered some lithic artefacts in the nearby rock shelter of Badanj. Đ. Basler, an archaeologist at the Zemaljski Museum of Sarajevo, reported this discovery, recognized the potential of the site and began excavations (Basler 1976, 1979). The site is a large, open rock shelter on a slope 30 meters above the base of a steep canyon. The first excavations revealed an extremely rich and complex site, and archaeologists recovered more than 20,000 lithic remains dating from the end of the Pleistocene (Late Epigravettian) during the first campaign. The finds also included hundreds of personal ornaments and dozens of engraved bone fragments, both rare elements in Paleolithic sites of the Balkan Peninsula (see Ruiz-Redondo et al. 2020a). This first campaign also revealed an even more exceptional discovery: a large, engraved boulder. The carvings are located on the upper face, whose surface dimensions are  $\sim 4 \times 2.7$  m, and the maximum height of the boulder is 2.3 m. Hundreds of deeply engraved features were found on the boulder, and since a great part of it was covered by undisturbed UP layers, the Palaeolithic age of the discovery is undisputed (Basler 1976, 1979). Đ. Basler presented his findings at a conference organized by D. de Sonneville-Bordes in Bordeaux (France, May 1977):

The image seems to be typical of the Paleolithic. Given that this part of the cave was covered with deposits from the end of the Palaeolithic, it is also possible to estimate, in a quite precise way, its chronology. One part of the wall is covered by non-figurative engravings, and, in the other part [...] we have found a horse representation and some symbols characteristic of this period (Basler 1979, 346).

Basler was very clear regarding the context of the discovery and the fact that the engravings were covered by UP layers. During our recent work at the site, we have confirmed that the archaeological deposits are undisturbed after the first 3-5 cm below the surface (Ruiz-Redondo et al., forthcoming). Although archaeologists have long assumed the presence of a horse depiction among the engravings, we have found no evidence to support such an interpretation (Ruiz-Redondo et al. 2020a). Nevertheless, Basler concluded his presentation with a significant remark: “It is beyond question that we need to wait for new discoveries from the west coast of the Balkan peninsula” (Basler 1979, 354). Those discov-

eries did not appear as quickly as Basler would have hoped, and many years passed without any further Paleolithic rock art finds in the area.

In 1978, some members of the speleological club at the University of Bucharest noticed a number of red dots painted on the walls of Cuciulat cave (Romania) while carrying out a first mapping of the cavity. A year later, M. Cârciumar, from the Romanian Institute of Archaeology, visited the site to evaluate the paintings and attempted to contextualize them. He confirmed the anthropic origin of the paintings, all of them made in red and depicting mostly non-figurative motifs, with the exception of a horse and a possible feline (Cârciumar and Bitiri 1983; Cârciumar 1988). Cârciumar was persuaded of the Paleolithic age of the stylistic because of the resemblance between the horse and other UP paintings. In particular, he compared this figure to the horses in Kapova cave: “The most pertinent stylistic similarities were drawn with the Kapovaya Cave paintings in the Urals and analogies with them, determined by the manner of execution and depiction of animal figures, colour and way of painting” (Cârciumar and Nițu 2018, 94). J. Kozłowski shared this opinion and even suggested a chronology for Cuciulat’s rock art: “The analogy between the Kapovaya horses and the ones from Cuciulat cave allow us to assign a chronology for the latter of circa 15–14 ka BP.” (Kozłowski 1992, 89).

Despite these statements, the dating of the paintings remains a complex issue. Since direct dating of the art is not possible, our best chance to determine the age of parietal art is to reconstruct its ‘internal archaeological context’ (‘IAC’ – for a definition and compilation of cases see Medina-Alcaide et al. 2018, and references within). When this is not possible, stylistic analogies may also be helpful, but only if there are a number of them available for comparison, and the art style clearly points to the same chronological framework (Fortea et al. 2004). Unfortunately, the site of Cuciulat does not currently meet any of these criteria. The front portion of the cave, which was the most likely area to have been inhabited by prehistoric humans, was destroyed by quarrying activities at the beginning of the twentieth century. According to local people, it consisted of a large chamber at the entrance, seemingly suitable for occupation by UP groups (Cârciumar 1988; Cârciumar and Nițu 2018). At the time of the discovery, the site was difficult to access, and the entrance was restricted by a pile of limestone blocks obstructing the gallery. Traversing the limestone pile allowed for access to a fossil gallery, which then led to the area where the paintings are located. No Paleolithic remains were found in the cave. Additionally, stylistic analyses can be applied only to the horse figure, as the supposed feline is poorly defined, and the geometric signs consist mainly of stains and red dots, which were common motifs throughout the Paleolithic. Consequently, the comparison between Cuciulat and Kapova is not without problems. Although the general proportions of

Cuciulat's horse may evoke that of Kapova's horses, the latter consist of perfectly defined outlines (in some cases even highlighted in black colorant) that are only partially filled with pigment (Ruiz-Redondo et al. 2020b). Moreover, a landslide prevented access to the cave, resulting in no new information since the 1980s. Despite these concerns about its chronology, Cuciulat's paintings demonstrate the biases prevalent in cave art research: Instead of being examined in a serious way, these paintings, along with Kapova and Badanj, were typically overlooked by Western specialists.

### 2.3 Europe Becomes Larger: Systematic Research in Eastern Europe and the British 'Exception'

After their discovery, research continued at the sites of Kapova and Badanj, more extensively in the former and sporadically in the latter (from 1986–87, led by Z. Kujundžić and R. Whallon). At the Russian site of Kapova, after a succession of campaigns led by O.N. Bader (1960–78), V.E. Shchelinsky completed a comprehensive study of the cave (Shchelinsky 1987, 1990a, b, 1993, 1997, 2001; Ščelinskij and Širokov 1999). He found an UP cultural layer in the so-called 'Chamber of Signs', containing a significant number of limestone blocks (including one bearing an image of a mammoth), along with lithics, faunal remains, stains and pieces of ochre, decayed tree remains, a bone tool, a ceramic cup, more than 150 personal ornaments (made from shells, serpentinite, and other materials). It is not surprising, then, that the next Paleolithic cave art discovery outside of southwestern Europe was made in the southern Urals. In 1980, V.T. Petrin, S.E. Chairkin, and V.N. Shirokov discovered red and black paintings in Ignatievskaya cave, relatively close to Kapova (~250 kilometers away). The site was studied from 1980 to 1986 by V.T. Petrin, and in 1995 by V.E. Shchelinsky and V.N. Shirokov (Petrin 1997; Ščelinskij and Širokov 1999). These scholars recorded over fifty motifs that they identified as Paleolithic due to their iconography, style, and resemblance to Kapova paintings. The archaeological excavation undertaken in the main chamber of the cave revealed remains of ancient human occupations. Three charcoal samples from an archaeological layer yielded late Pleistocene dates of ~18–11 ka cal BP (Ščelinskij and Širokov 1999), which may potentially overlap at ~16 ka cal BP when calibrated (Bronk Ramsey 2017; Reimer et al. 2020). Three direct radiocarbon analyses were later performed on two charcoal lines and a black mammoth depiction (Steelman et al. 2002). The results obtained were incongruous and the ages returned were all post-Pleistocene (the oldest ~8.3–8 ka cal BP). The authors of the study rejected the possibility of modern carbon contamination. However, a number of species among the fauna represented in the cave art were

extinct in the area well before the end of the Pleistocene; I have recently verified the paintings *in situ* and there are clear depictions of mammoths, woolly rhinoceros, and even a Bactrian camel. Furthermore, the graphic conventions of the figurative paintings show many analogies with those found at Kapova, and the direct dates obtained from Ignatievskaya cave paintings do not fit within the chronological frame of human occupations identified in the same site. The authors propose several possibilities to explain these discrepancies (Steelman et al. 2002, 348): (1) the image does not depict a 'mammoth'; (2) the species existed in the area for over 4000 years longer than previously expected; (3) the depiction was not that of a living mammoth; or (4) the charcoal was from a younger (more recent) overpainting of an older image. Concerning the first option, a positive identification of the species can be ascertained from the clarity and detail of the image. The second and third hypotheses cannot explain the discrepancy in radiocarbon ages between the artwork and the prehistoric occupation of the site; they also do not account for stylistic similarities with UP cave art from other sites. As such, the fourth hypothesis seems to be the most reasonable, although I would not exclude the possibility of carbon contamination, especially considering the amount of modern graffiti that can be found on the walls of the caves. More recently, a new study has analysed the calcite layers overlying and underlying a number of the paintings in the cave (Dublyansky et al. 2021). The <sup>230</sup>Th dates obtained on the flowstone that formed above and below the red and black paintings in Ignatievskaya cave situate the chronology of the artistic activity between ca. 78 ka and ca. 10 ka. A number of authors have called into question the reliability of the method in its application to thin calcite layers covering cave paintings (see, for instance, White et al. 2020). That said, the iconography (Pleistocene fauna) and the style of the artwork are compatible with a Pleistocene chronology.

More recently, archaeologists have reported cave art at the site of Serpievskaya 2, located just ~15 km from Ignatievskaya cave (Shirokov and Petrin 2013). In this case, archaeologists have reported a dozen of red paintings and some engravings, most of them non-figurative motifs (with the possible exception of two zoomorphic figures). Although the site has not been studied as extensively as the previous two sites in the Urals, the Palaeolithic antiquity of these artworks seem to be justified *a priori*, based on technical and somewhat iconographic grounds, especially when considering some relevant analogies with Ignatievskaya's paintings. Nevertheless, the evidence is currently too scarce to make a strong case for the Pleistocene age of the paintings, and further research at the site is necessary to establish its chronology.

From 2008 to the present, the research at these three sites has entered into a new phase. Over the past decade, V.S. Zhitenev (Lomonosov Moscow State University) has



led the 'Southern Urals archaeological expedition' which undertakes the archaeological investigations of decorated caves. Due to its archaeological relevance, efforts have mainly been concentrated in Kapova. As a result, knowledge surrounding this site has increased notably in the last decade. Several works have been published, including new data regarding the archaeological context of the UP human occupations inside the cave (Zhitenev 2016, 2018), a number of radiocarbon and U-series dates (Zhitenev et al. 2015; Dublyansky et al. 2016, 2018), new pigment composition analyses (Pakhunov and Zhitenev 2015), and a comprehensive study of the rock art (Ruiz-Redondo et al. 2020b). It is expected that similar research at Ignatievskaya and Serpievskaya 2 will be undertaken in the coming years.

In September 2009, a team of speleologists announced the discovery of a number of possible Palaeolithic drawings at the cave of Coliboaia (Romania). The speleologists and the local authorities contacted Jean Clottes for an international expert assessment. Together with other French collaborators, Clottes visited the cave in May 2010, confirming the UP age of the motifs based on stylistic and iconographic criteria (e.g., some drawings clearly represent Pleistocene fauna). Several animal figures were reported, including horses, bison, rhinoceros, and the possible head of a bear (Clottes et al. 2012), all of them drawn in charcoal. Four samples were taken for radiocarbon dating, three from the IAC of the art, and one taken directly from a horse figure. Based on the result of radiocarbon dating, archaeologists suggested a very early chronology that could correspond to (A) two periods of decoration separated by 4000 years (~37–35 and ~33–30 ka cal BP), or (B) a single period of decoration from 35–33 ka cal BP. The second scenario would imply that three of the samples underestimated the age of the drawings due to modern carbon contamination (Gély et al. 2018). Whatever the case, the members of the team that studied Coliboaia were confident that the drawings are Aurignacian in origin. However, the lack of typical Aurignacian archaeological material from within the cave has led some scholars to question the proposed chronology (Cârciumaru et al. 2019). Instead, Cârciumaru and his collaborators have suggested a Gravettian chronology for the drawings. New research and, eventually, independent evaluations could help to resolve the dating issue in the future. Regardless of the precise chronology, it seems clear that Coliboaia's art is from the UP and, therefore, this place is important to understand the dissemination of Paleolithic parietal art across Europe.

Coliboaia is not far from the Balkan Peninsula, an extensive area that probably played an important role in the arrival of Anatomically Modern Humans (hereafter AMH) into Europe but that has been rarely examined in terms of Paleolithic art. Being aware of this situation and the archaeological potential of the area, I decided to assemble a team to survey potential rock art sites in Southeast Europe. Our work

began in Serbia in 2012. During that first stage of the project, we surveyed twenty-nine cave sites. In Selačka 3, we found two red fingerprints which, based on stylistic criteria, may be Paleolithic in nature (Ruiz-Redondo 2014; Ruiz-Redondo et al. 2018); this argument is strengthened by the presence of Early Upper Paleolithic industry at the site (Kuhn et al. 2014). Although we looked for further evidence that could help to establish a more precise chronology for the red paintings, our efforts were unsuccessful (Ruiz-Redondo et al. 2020a). Despite the limited impact of the discovery, this find reinforced our conviction that the Balkan Peninsula had great potential for establishing the scope and geographic dissemination of UP art. For this reason, a few years later, we enlarged the team and expanded the territory to be surveyed, which then included Croatia (33 sites), Bosnia and Herzegovina (5 sites), Montenegro (5 sites), Bulgaria (1 site), and a number of additional sites in Serbia (18 sites). These sites constituted the core of two consecutive research projects: BALKARTS (funded by the Programme IdEx University of Bordeaux) and PALAEOARTEAST (funded by the British Academy). In this context, we studied the paintings of Romualdova pećina (Istria, Croatia) in 2017. D. Komšo discovered the site during a visit in 2010. While he was the first to suggest a possible Palaeolithic chronology for the paintings, he was unable to elaborate on its initial assessment. For this reason, we decided to include the site in our project. As a result, we were able to document a minimum of 44 graphic units (that include at least four figurative depictions) that, based on a number of iconographic and stylistic criteria as well as the examination of the IAC, are from the UP (Ruiz-Redondo et al. 2019). This is the first site containing UP figurative art discovered in Southeast Europe and, therefore, this research marked a milestone in the study of European cave art, filling a regional gap in the knowledge and contributing to a better understanding of the connection between UP Eastern and Western European symbolic traditions. The discovery of Romualdova pećina also demonstrated the potential of this area for Paleolithic art studies. As such, our current research continues to focus on this territory, and our future plans include intensifying research at a number of key sites (e.g., Badanj, Romualdova), as well as expanding the survey to nearby countries such as Greece and Bulgaria.

On the other side of Europe, three scholars (P. Bahn, P. Pettitt, and S. Ripoll) undertook a number of surveys in the United Kingdom in 2003, aiming to discover Paleolithic cave art. Fortunately, they started their search at Creswell Crags, where they discovered a series of engravings in the cave of Church Hole (Bahn et al. 2003). The discovery of the engravings of Church Hole represented the first convincing evidence for the existence of UP rock art in the British Isles. Among the engravings, archaeologists documented several figurative motifs, particularly animal figures. The Paleolithic

antiquity of the art was initially based on stylistic grounds (Bahn et al. 2003), and was later supported by radiometric dating (Pike et al. 2005). Both methods situated the engravings at the end of the Pleistocene, associated to the regional Late Upper Paleolithic (~15–13 ka cal BP). The discovery of Church Hole's cave art significantly expanded the known territory of cave art in Europe, opening the door to further explorations. Unfortunately, no other convincing evidence from the UK has been reported so far.

## 2.4 Beyond Europe

The geography of Paleolithic rock art research has expanded beyond Europe in recent decades (Fig. 2.1). Due to its proximity to the European 'cynosure,' it is worthwhile to first mention the discovery of the Qurta engravings in Egypt. The motifs, distributed among three sites, display a wide variety of animal figures,

In total there are at least about 160 individual images. The rock art of Qurta consists mainly of naturalistically drawn animal figures. Bovids are largely predominant (at least 111 examples), followed by birds (at least 7 examples), hippopotami (at least 3 examples), gazelle (at least 3 examples), fish (2 examples) and ass (1 example). In addition, there are also (at least) 7 highly stylised representations of human figures (shown with pronounced buttocks, but no other bodily features) (Huyge et al. 2007, 1).

Although archaeologists have not established a precise chronology for this rock art, depictions show a number of similarities with the Magdalenian art from Western Europe. Building on this stylistic foundation, the scientific team linked Qurta's engravings to the Ballanan-Silsilian culture, a Late Paleolithic culture dated to about 15,000 years. While this possibility cannot be ruled out, stronger evidence must be provided to support a Late Pleistocene chronology of these engravings.

On the other side of the world, a number of archaeologists suggested a very old chronology for some Australian picto-



**Fig. 2.1** Paleolithic rock art sites reliably dated out of southwestern Europe (Portugal, Spain, France and Italy). 1) Church hole, 2) Romualdova Pečina, 3) Badanj, 4) Coliboaia, 5) Kapova, 6)

Ignatievskaya, 7) Serpievskaya 2, 8) Qurta, 9) East Kalimantan caves (>4 sites), 10) Leang Timpuseng & Leang Bulu' Sipong 4, 11) Kimberley rock-shelters (>4 sites), and 12) Nawarla Gabarnmang

grams (Chaloupka 1993). For instance, Chippindale and Taçon (1998) developed a number of ingenious indirect dating methods (based on style, superimposition, the introduction/extinction dates of some taxa depicted, and the IAC) to estimate the chronological sequence of Arnhem Land rock art. They set their 'Old Period' at ~50–30 ka cal BP, coinciding with the first human occupation of the region. The first direct radiocarbon dates of Australian rock art were published in the 1990s. Two samples taken from a painted motif in the Sydney region yielded two results: ~34 ka cal BP and ~7 ka cal BP (McDonald et al. 1990). Considering the significant discrepancy of these results and the fact that the samples seem to belong to a single 'drawing event' (McDonald 2000), it is impossible to determine which of the results, if either, are accurate. Indirect dating has been extensively tested in Australian rock art (for a compilation see David et al. 2013a). This has especially focused on the use of both optically stimulated luminescence (OSL) and radiocarbon dating to determine the ages of mud-dauber wasp nests overlying or underlying parietal motifs. In Kimberley (northern Australia), some of these nests overlying an anthropomorphic figure and a hand stencil yielded OSL dates of  $16,400 \pm 1800$  and  $17,500 \pm 1800$  years, which should be considered minimum dates for the paintings (Roberts et al. 1997). A recent investigation surrounding the 'Irregular Infill Animal Period' from Kimberley offered an extensive series of radiocarbon dates on wasp nests related to the rock art (Finch et al. 2021). Based on these results, Finch and his collaborators estimated a timespan for this phase beginning around 17.2 ka cal BP (at minimum) and lasting until at least 15.1 ka cal BP (or possibly as late as 13.1 ka cal BP). In Arnhem Land, a slab with a charcoal painting was found in a stratified context at Nawarla Gabarnmang. The fragment came from the collapse of the ceiling, which still contains other paintings, and archaeologists have established that the slab was decorated prior to its fall. The rock slab was found lying between two sediment layers dating to ~13 ka and ~45 ka cal BP. Moreover, using the radiocarbon method, archaeologists have been able to date the ash that had adhered to the painted stone's posterior to about 28,000 cal BP (David et al. 2013b). Given that the ash remains must have adhered to the slab after its fall, this latter date should be taken as a *terminus ante quem* for the art. The chronological evidence from these sites seems to indicate that Paleolithic art had developed in Australia at least 28,000 years ago, but the origin of image-making is most likely older, especially since this art is connected to the recently discovered Pleistocene cave art on the neighbouring islands of Sulawesi and Borneo.

In 2014, Maxime Aubert and others published a set of U-series dating results of calcium carbonate deposits directly associated with rock art motifs on Sulawesi (Indonesia). A number of them, coming from different archaeological sites in the Maros-Pangkep karsts, are from the late Pleistocene

(Aubert et al. 2014). For instance, at Leang Timpuseng, a figurative depiction of a suid was dated to at least 35.4 ka cal BP; 2). Similarly, at Leang Barugayya 2, a painting of an unidentified suid-like animal has a minimum age of 35.7 ka cal BP. Finally, twelve hand stencils from various sites also yielded minimum ages of between 39.9 and 17.4 ka cal BP. In 2018, a team led by Aubert published several U-series dating results associated with a number of paintings from different cave sites on Borneo (Aubert et al. 2018b). The paintings are from the Pleistocene, including a hand stencil dating back at least 40,000 years. A year later, the team published the 'Earliest hunting scene in prehistoric art' (Aubert et al. 2019), also from a cave site in Sulawesi. This assessment is questionable on several grounds. First, it is purely speculative that the depictions in the purported scene are engaging in any sort of hunting activity. Second, it is far from clear whether the so-called 'therianthropes' are 'anthropomorphic', or even if they are part-human, part-animal representations. Furthermore, even accepting the authors' interpretation regarding these images, the contemporaneity between the 'hunted animal' and the 'hunters' is not conclusive, and only the former has been indirectly dated by U-series. Regardless of whether or not this depiction represents a hunting scene, the dating results for the panel demonstrate beyond doubt the existence of Pleistocene art in Indonesia. Finally, recent indirect dates (U-series on calcium carbonate deposits) were provided for additional cave paintings in Sulawesi, dating some of its art back to possibly ~44 ka cal BP (Brumm et al. 2021).

Despite the many problems and challenges of using U-series analysis for dating rock art (see Plagnes et al. 2003; Aubert et al. 2018a; Pearce and Bonneau 2018; Slimak et al. 2018; White et al. 2020), the results seem reliable considering: (1) The increasing number of coherent UP dates in the area; (2) that several of these results show a coherent stratigraphy within the calcite deposits; and (3) the fact that at least two of the rock art sites have revealed *in situ* archaeological evidence for UP pigment processing (Brumm et al. 2017, 2018) and portable art (Langley et al. 2020). In short, the Indonesian archipelago is now strongly positioned as one of the most relevant emergent areas for Pleistocene rock art research.

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## 2.5 Conclusion: Global Research for a Global Phenomenon?

Globalization is having an impact on our research and knowledge of Paleolithic art. In the past three decades, we have witnessed an expansion of the geographical scope of this phenomenon – an expansion that, as it has happened with the process of globalization that started in the 1950s (Mazlish 2011), has significantly increased during the twenty-first

century. In the case of Pleistocene art, international collaborations and a more efficient dissemination of scientific knowledge has greatly contributed to this shift. This is not something necessarily new. For instance, as we have seen in this paper, the authentication of Kapova's paintings was possible because the work of early French prehistorians was translated into Russian at the time. This allowed Bader to exchange his impressions with other specialists from around the globe at the IV UISPP conference held in Moscow in 1962. Some decades later, the twenty-first century has witnessed a proliferation of Pleistocene rock art discoveries in places other than the Franco-Cantabrian area. For instance, we have now confirmed the existence of UP cave art across Europe from England to the southern Urals. Moreover, Australia and Indonesia have emerged as new centres for research in Pleistocene symbolism. As a result of these developments, the 'oldest' art of humankind can be currently found in several parts of the globe.

The question is whether we can still speak of 'Paleolithic art' as a single unitarian phenomenon. We need to take into consideration a number of issues. To begin, the geographical distance between the discoveries in Asia/Oceania and the traditional European sites is evident. However, the presence of patterns and themes common to both territories (style of zoomorphic figures, hand stencils, pictorial techniques) somewhat link these distant regions. In the current state of the art, our knowledge is still too fragmentary to assess whether Pleistocene art(s) had multiple independent origins or emerged from a common source, either in Western Europe, Southeast Asia, Oceania, or any other area (Levant?). Nevertheless, the fact that we are discussing this issue represents a significant step forward with respect to what happened only ten years ago, when most scholars simply took for granted that rock art had originated in Western Europe.

But are all these new territories ready to reach their full potential for developing rock art research? Australia, due to its long research tradition as well as the numerous resources that this country dedicates to the study of rock art, is certainly ready to face the new challenges of Pleistocene rock art. For instance, research teams from this country are leading different projects in other areas, such as Indonesia. However, in Eastern Europe, the number of sites, projects and specialists is still clearly insufficient, and many rock art researchers working in the area come from other countries and places. In recent years, some of us have tried to establish a solid network of collaboration, but the fact remains that, in Eastern Europe, rock art research is still far (quantitatively speaking) from the investigations into UP art in Western Europe. An example can illustrate this point. While we undertook the BALKARTS project (a single team with nine project members for an archaeological survey in four countries), about 50 projects on UP rock art were undertaken in

Western each year. Considering that Franco-Cantabrian art was discovered about 140 years ago and has a wide array of dedicated resources in comparison with other areas, we can only expect that the difference between the amount of information/data originated in Western Europe and other areas will increase in future years. Additionally, while it is true that the global picture has changed, the fact remains that most countries have not yet yielded any evidence concerning UP art and there are very few teams working in these countries. Hence, although the discovery of Pleistocene rock art in several countries represents a step forward for the body of knowledge surrounding this phenomenon, there are still significant differences between countries and regions. In this setting, we can conclude that if Palaeolithic rock art has become a global phenomenon, its investigation is still far from achieving the same reach.

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