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Who're we gonna call? The bias busters!

Robert G. Bednarik

The title of this symposium correctly implies that this discipline is at the crossroads, and its subject is the future directions in rock art studies. In this paper it is proposed that, while more detailed studies, recording and analysis of rock art will gradually improve the value of knowledge claims in our young discipline, the crucial contribution to its future development and viability will be a significant qualitative and paradigmatic shift in the design and testing of hypotheses. The underlying strategies of such a revisionist drive are barely hinted at in this paper, which instead focuses on the effects of Eurocentricity in the interpretation of Eurasian Palaeolithic art. The refutability of several long established, major axioms of Palaeolithic art is explained by presenting more tenable alternatives. The significant discrepancies between simplistic interpretation of the western European corpus, and recent assessment of Palaeolithic art from central Europe to China are sufficient to show that traditional distributional, statistical and compositional characteristics of the evidence provide no adequate basis for interpretation. Epistemologically more sound approaches are suggested.

This paper is a direct response to the question posed in the title of this symposium: where do we go from here, in a post-stylistic era in palaeoart studies? It is now widely recognized that the stylistic taxonomies of researchers, like the stylistic taxonomies archaeologists have invented for artefact typologies, reflect the cognitive categories of the subjective observers, and not those of their makers and users. Thus they are not scientifically relevant, and more rigorous approaches are required (Bednarik 1992a, 1992b).

The lingering doubts about the authenticity of various examples of 'prehistoric' art (see Bahn, this volume) are but one of a variety of factors demanding a reassessment. If it were correct that a certain proportion of Palaeolithic art is not authentic, it would follow that the basis of its acceptance is its compliance with popularly perceived common characteristics of such art. These perceptions of what constitutes the essence of Palaeolithic art would have to be shared by forger and authenticator, if a forgery is to succeed. So the most important heuristic effect of forgeries is that they would confirm and amplify any biases held by scholars, and distort any statistical data in their favour.

If one looks closely at an art body such as the Palaeolithic art of western Europe, it becomes obvious that its study has been conducted largely in an emotive, jingoistic and heavily biased manner, and one cannot help noticing that this trend continues right to the present

time (for recent critiques, cf. Bahn 1991a, 1992). Bearing in mind that Pleistocene art occurs in all continents other than Antarctica, and that it is both older and far more common outside of Europe, any work that discusses this art by considering only the Upper Palaeolithic corpus of Europe indicates a very blatant bias. However, there are many more subtle biases built into the interpretations of Palaeolithic art, and they are the subject of my attention here.

The study of Palaeolithic art has served as a model for the discipline in the past, so in order to extinguish biases in palaeoart studies one should begin with those in Palaeolithic art studies. To show that every possible area of consensus opinion about this corpus of art or non-utilitarian products is permeated by biases, I will formulate a descriptive statement composed of popular concepts about Palaeolithic art:

The Upper Palaeolithic rock art of Europe provides a vivid picture of ritual practices restricted to cave sites. There is a sharp contrast with the preceding Middle Palaeolithic period which lacked an art production. The major features of Ice Age cave art are the masterworks depicting mostly large animal species, no doubt related to hunting rituals. Another characteristic component of this art is the tradition of a female cult in which goddesses of fertility in the form of often obese figurines were revered. Further evidence of symbolic behaviour has been found in the form of frequent grave goods, especially red ochre powder. The

colour red is the most frequently used in all prehistoric arts, suggesting a symbolic function related to blood, life and death.

This is the kind of information one finds in text books around the world, and it is the kind of information researchers in non-European countries often actually use as a guide in their own search for Pleistocene art traditions. Let me examine each and every statement in turn, beginning with the last:

It is true that red is the colour most frequently found in the rock art of the world, but that does not necessarily mean that it was the most frequently *used*. Firstly, the pigments of most red paints are iron oxides or hydrated iron oxides, which generally consist of a range of metastable minerals (Bednarik 1979, 1987a, 1991a). Their reflective properties are determined by a variety of factors, such as the redox state, the content of adsorbed, absorbed, capillary or crystalline water, or the grain size. Without exception, they are convertible under natural conditions, through processes such as hydration, dehydration, oxidation, reduction, heating and grinding, which alter the colour of ferric oxides, and even convert them to ferrous oxides under natural conditions, for instance in the reduction of haematite to magnetite, by means of organic decomposition or fire. This mineral can be oxidized to maghemite, which in turn is metastable in respect to haematite. Magnetite can be oxidized or hydrated to goethite or lepidocrocite, the former can dehydrate to haematite, the latter to maghemite. Aeration, fire, water, insolation, micro-organisms and variation in pH are some of the factors that cause these changes. It would therefore be premature to assume that one knows in which colour iron minerals were originally applied, and then base ethnohistorical reconstructions on these conjectures (Stumfohl 1990). It is also relevant that the oldest rock paintings always possess a particular, characteristic deep-red hue, especially in regions of warm and dry climate, such as north-east Brazil, Mexico, south-west USA, Australia, the Sahara and central India. It is no coincidence that the most stable of the iron minerals, such as haematite, are of that colour. Finally it is relevant to remember that of all mineral pigments, red ochres have the greatest longevity. This is best seen in the many bichrome or polychrome motifs in which only red has survived, and which can be found in the Sahara, in southern Africa, eastern Spain, India and in Kimberley, Australia (e.g. Welch 1990). Moreover, of all the early pigments, haematite is the one best suited for interstitial penetration of sandstones, and for incorporation in a silica skin. In short, we have no proof that red was the most commonly used colour. Conversely, white pigments which turn to black with time have been reported from India (Bednarik 1992c), and black pigments which change their colour to light-green from Australia (McNickle 1991).

Precipitated iron oxides can often be observed in sediments, namely where distinct pH variations occur

in the vicinity of the neutral point. Between pH 8.5 and 6.0, the solubility of iron increases 100,000 times. One would reasonably expect to find a zone of acidity around a decomposing body, and one would also expect that the eventual reinstatement of equilibrium conditions would cause the precipitation of surplus solute, especially on alkaline bone remains. This does not mean that there are no pre-Historic burials with ochre, only that a taphonomic explanation as naturally precipitated iron oxides is to be preferred unless there is more direct evidence for an intentional deposition of pigment (as in some *Bandkeramik* graves in central Europe, or burials in Liguria, *Arene Candide*, on *Palmaria*, Sardinia and *Gozo*). It is also relevant to note here the number of reports of so-called grave goods found in burial backfills, which do not at all differ from the kind of cultural debris generally found in the sediment that was used to fill the grave.

The presumed female sculptures found in Upper Palaeolithic contexts from the Atlantic to Lake Baikal provide a classical example of how perceived distributional, statistical and compositional characteristics can become established in the mind of researchers as if they do in fact define categories of artefacts that had distinctive cultural roles, that link artistic traditions and possibly even identify ethnic entities. Yet this category of female sculptures is entirely arbitrary, as are the many interpretations of the corpus (Bednarik 1990). Having examined a large proportion of the specimens, I found that they share not one common characteristic, the female status of many is not at all indicated, and they were almost certainly used for different purposes and by different cultural traditions. The only factors that tie them together are the fertile Freudian minds of some investigators, and the tendency of others arbitrarily to select perceived common denominators, create imagined taxonomies on their basis, and then present these as the evidence for their preferred hypotheses. These anthropomorphous objects certainly do not form a single class that can be objectively contrasted with other objects (Duhard 1989; Feustel 1971; Gamble 1982; von Koenigswald 1964; Rice 1981; Schelsky 1964; Tokarev 1961; and many others). Here I shall concentrate on a specific observation that renders any claim concerning their perceived distribution or frequency invalid.

In considering just those allegedly female images which are allegedly of the Upper Palaeolithic and which are fully sculpted, it is evident that nearly all are of materials that would survive poorly in acidic soils, and that practically all were found in alkaline soils, i.e. loesses or cave sediments. With the exception of a few specimens, these objects are of organically derived, mineralized calcareous materials such as Tertiary limestones or ivory, which is essentially dentine, other calcium minerals and cartilage. Therefore the correlation of characteristics such as those of the raw material of surviving specimens and the conditions conducive to their survival seems more relevant than the apparent

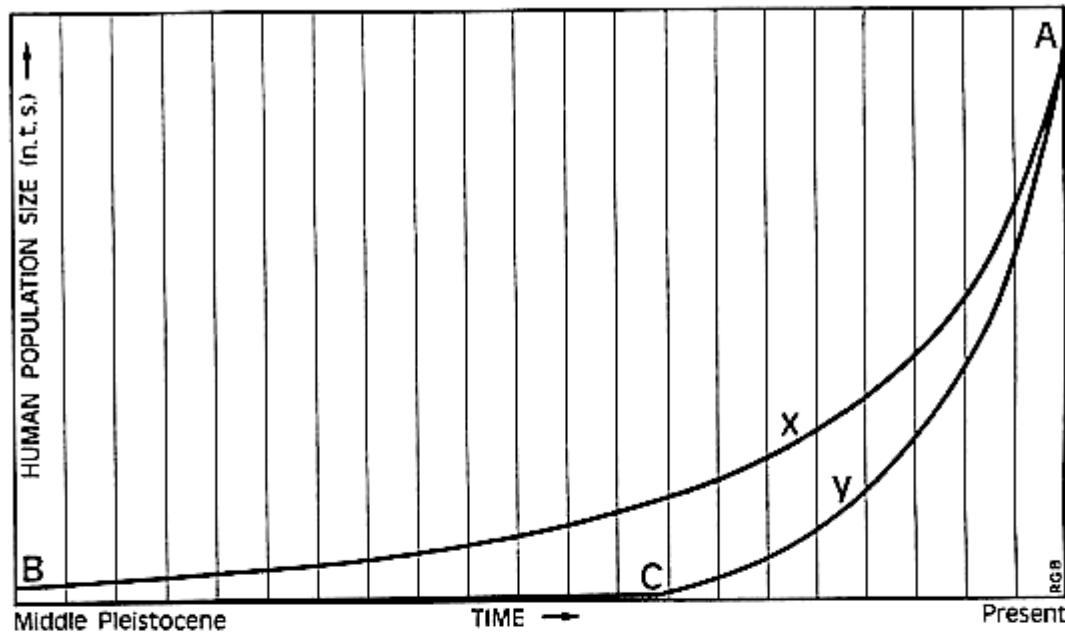


Figure 1. Principles of taphonomic reduction of sample size in a continually increasing population of symbolic artefacts. A. Population of recent artefacts; B. Artefacts produced in Middle Pleistocene; C. Cut-off point at which all older artefacts should have been lost. Area below X = Total production of symbolic artefacts. Area below Y = Total surviving artefacts

geographical distribution of the evidence (Bednarik 1991b). The latter can, in fact, only be relevant under certain qualifications which archaeologists have generally ignored. Some archaeologists consider that the present distribution of the figurines indicates their former geographical distribution. What they are in fact implying is that the people who deposited these images selected soil conditions that would be conducive to preservation. Perhaps Palaeolithic people were so thoughtful (and considerate to archaeologists); but before relying on such an implausible model it would need to be shown that none of the figurines was lost or discarded, rather than 'deposited'. This example illustrates the kind of logic some archaeologists have resorted to in interpreting palaeoart, and it typifies the scientific obsolescence of most interpretations in the discipline.

Next, the often claimed predominance of large animal species in Palaeolithic art is, quite simply, without foundation. Only a fraction of the surviving art seems to be figurative, as far as we can tell, and Leroi-Gourhan (1971), for example, lists a total of merely 2,188 identifiable human and animal figures from the caves of France, Spain and Italy (cf. also the question of hunting magic, discussed in Bahn 1991b). Even most of the western European early art is in fact non-iconic, and from Germany to China, in most of Eurasia, graphic art known or suspected to be of the Pleistocene is almost exclusively non-iconic, as it is in the Americas and Australia (Dorn and Whitley 1983; Whitley and Dorn 1987; Bednarik 1987b, 1988, 1989). Currently, the only evidence of a possibly Pleistocene iconic graphic art in the Americas is from Perna 1, Brazil, and the

massive corpus of Australian petroglyphs of the Pleistocene is entirely non-iconic, except perhaps some final Pleistocene components, particularly the possible depiction of two-dimensional forms (i.e. tracks; cf. Bednarik 1985: 82). (Iconicity refers here to the visual quality of a motif which conveys to most contemporary observers, especially Westerners, that a specific object is depicted; it is not related to the question of whether a motif does in fact depict, because that question cannot be answered in pre-Historic art.)

The model which places the beginning of symbolic behaviour at the division between the Middle and Upper Palaeolithic (wherever that might be) is yet another misconception (Bednarik 1992d). Traces of symbolic activities are in most cases extremely ephemeral, and even those that do survive for archaeologically significant periods generally have a limited life span. This means that, with every millennium, a certain percentage is lost. This loss increases cumulatively with age, in a quasi-linear fashion, and whatever its percentage might be, there must be a point in time at which the loss component approaches total artefact population (Figure 1). In other words, there must be a limit beyond which one would not expect to find evidence in any significant numbers. For all practical purposes, older evidence of symbolism would be exceedingly rare, and the evidence from the Palaeolithic is always most fragmentary. It comes from unconnected or poorly connected geographical regions and is always the result of most unusual conditions of preservation. This taphonomic model (Bednarik 1992e) accounts for the distributional, statistical and compositional characteristics of this art much

better than any cultural, cognitive or evolutionary interpretation. It also rejects the perceived paucity of symbolic evidence from pre-Upper Palaeolithic contexts as being irrelevant. Besides, this perceived paucity is in any case a fallacy, and is merely an asserted proposition of researchers who are inadequately informed about the relevant evidence. A variety of non-utilitarian practices existed prior to the Upper Palaeolithic, and they included archaic art or mark-producing activities. Moreover, even the characteristics of Upper Palaeolithic art can only be properly understood when they are seen in the framework of the same taphonomic model, and this necessitates the rejection of most interpretation attempts we have seen so far.

Finally, there is the frequent claim that the location of Franco-Cantabrian rock art in limestone caves is culturally significant. Once again, the wrong 'crucial common denominator of the phenomenon category' (Bednarik 1992a) was promoted by biased scholars for the best part of a century. So-called 'cave art' was not endemic to caves, it is found in caves not because it was only produced there, but because it only survived there (Bednarik 1986: 41). This is well illustrated by the first Pleistocene rock art ever discovered in central Europe. At the sites Hohler Fels and Geissenklösterle, southern Germany, rock art was recently found on exfoliated cryoclasts (Hahn 1991), which confirms again that the apparent absence of cave art in central Europe is a function of speleoclimate and speleogenesis, not of cultural factors (Bednarik 1992f). It is a *taphonomic* phenomenon. The cave art of western Europe is no more than the tip of an iceberg, it accounts for only a fraction of a percent of the rock art that may have been produced in Europe at that time, and it provides a sample that may not only be spatially distorted, it is likely to be even iconographically non-typical, providing misleading clues for specious confirmationist interpretations (Bednarik 1993). Thus the biases inherent in traditional explanations of this art body are not just of marginal effect and cannot be addressed by cosmetic changes of existing models; they will involve a qualitative and paradigmatic shift in the design and testing of hypotheses if this discipline is to be of scientific relevance.

The archaeological fairy stories about palaeoart that have emanated from Europe for a century are not just harmless fantasies of scholars, they have been the basis

of powerful ideas about human development and the validity of different models of reality which continue to fuel ethnocentric perceptions of the world and of human societies. The global picture of palaeoart that is currently emerging, through the efforts of rock art researchers world-wide, differs in almost every detail from the previous model. The first settlers of Australia, who may have arrived here between 50,000 and 140,000 years ago, probably had language, art and a complex society capable of symbolic expression and forward planning, which suggests that these capabilities must have existed in Asia earlier still. We now assume that extremely complex rock art was produced in Australia between 40,000 and 50,000 years ago (Nobbs 1992, and pers. comm.), art that is much more complex than the simplistic iconographic art of the much more recent Upper Palaeolithic period of Europe. We also know that, leaving aside the anomalous Franco-Cantabrian art (Bednarik 1993), most of the known Pleistocene art of the world is non-iconic, consisting of often extremely sophisticated graphic systems of which we understand absolutely nothing to this day, and which few researchers have even examined (one needs to refer only to the impressive corpus of Russian and Siberian portable engravings, which I shall discuss elsewhere). Yet so far it has been the mythology of art origins based on the concocted ideas about the meaning and purpose of Franco-Cantabrian art that has entirely determined all models of early art development and related subjects, much to the detriment of alternative models and to the detriment of the discipline as a whole. For instance, until 1990 not one researcher had ever considered Asian Ice Age art on a pan-Asian basis, and yet it is readily evident that Asia occupies a geographical and probably evolutionary key position in early art development (Bednarik 1988, 1991c, 1992g, 1992h). The bias evident from this and countless other aspects of palaeoart studies is simply massive, and the discipline has no choice but to completely re-assess each and every asserted proposition in a scientific, epistemologically sound fashion. I expect that the majority of these asserted propositions of the past century will be discredited in this process. Therefore the answer to Lorblanchet and Bahn's question is obvious to me: where do we go from here in our discipline? The post-stylistic era is the reign of the bias busters, and it has already begun.

References

- Bahn, P.G. 1991a. Review of H. Delporte, 'L'Image des animaux dans l'art préhistorique'. *Rock Art Research* 8: 141.
- Bahn, P.G. 1991b. Where's the beef? The myth of hunting magic in Palaeolithic art. In P. G. Bahn and A. Rosenfeld (eds), *Rock art and prehistory*, pp. 1-13. Oxbow Monograph 10, Oxbow Books, Oxford.
- Bahn, P.G. 1992. Review of D. Vialou, 'La Préhistoire'. *Rock Art Research* 9: 143.
- Bednarik, R.G. 1979. The potential of rock patination analysis in Australian archaeology - part 1. *The Artefact* 4: 14-38.
- Bednarik, R.G. 1985. Comment on M. Nobbs, 'Rock art in Olary province, South Australia'. *Rock Art Research* 2: 80-2.
- Bednarik, R.G. 1986. Parietal finger markings in Europe and Australia. *Rock Art Research* 3: 30-61.
- Bednarik, R.G. 1987a. No pictographs at the end of Rochester Creek rainbow. *La Pintura* 15(2+3): 14-18.

- Bednarik, R.G. 1987b. Engramme und Phosphene. *Zeitschrift für Ethnologie* 112(2): 85-8.
- Bednarik, R.G. 1988. Art origins. Paper presented to Symposium K, First AURA Congress, Darwin, 2 Sept. 1988.
- Bednarik, R.G. 1989. On the Pleistocene settlement of South America. *Antiquity* 63: 101-11.
- Bednarik, R.G. 1990. More to Palaeolithic females than meets the eye. *Rock Art Research* 7: 133-7.
- Bednarik, R.G. 1991a. Mehr über die rote Farbe in Vorgeschichte. *Almogaren* 22 (in press).
- Bednarik, R.G. 1991b. Natural line markings on Palaeolithic objects. *Anthropologie* (Brno) 29(4): (in press).
- Bednarik, R.G. 1991c. Asian palaeoart and Eurocentric science. *Purakala* 2: 71-6.
- Bednarik, R.G. 1992a. Epistemology in palaeoart studies. *Origini* 15 (in press).
- Bednarik, R.G. 1992b. Base pour des études de pointe des débuts de l'art. *L'Anthropologie* (Paris) 96: 369-74.
- Bednarik, R.G. 1992c. Developments in rock art dating. *Acta Archaeologica* 63: 141-55.
- Bednarik, R.G. 1992d. Palaeoart and archaeological myths. *Cambridge Archaeological Journal* 2(1): 27-43.
- Bednarik, R.G. 1992e. The stuff legends in archaeology are made of. *Cambridge Archaeological Journal* 2(2): 262-5.
- Bednarik, R.G. 1992f. Premières découvertes d'art Paléolithique en Allemagne. *International Newsletter on Rock Art* 2: 3-4.
- Bednarik, R.G. 1992g. Palaeolithic art found in China. *Nature* 356: 116.
- Bednarik, R.G. 1992h. The Palaeolithic art of Asia, in A.S. Goldsmith et al. (eds), *Ancient Images, Ancient Thought, The Archaeology of Ideology*, 23rd Chacmool Conference, Nov. 1990, Calgary, pp. 383-90.
- Bednarik, R.G. 1993. European Palaeolithic art -- typical or exceptional? *Oxford Journal of Archaeology* 12(1): 1-8.
- Dorn, R.I. and D.S. Whitley 1983. Cation-ratio dating of petroglyphs from the western Great Basin, North America. *Nature* 302: 816-18.
- Duhard, J.-P. 1989. La gestuelle du membre supérieur dans les figurations féminines sculptées paléolithiques. *Rock Art Research* 6: 105-17.
- Feustel, R. 1971. Sexuologische Reflexionen über jungpaläolithische Objekte. *Alt-Thüringen* 11: 7-46.
- Gamble, C. 1982. Interaction and alliance in Palaeolithic society. *Man* 17: 92-107.
- Hahn, J. 1991. Höhlenkunst aus dem Hohlen Fels bei Schelklingen, Alb-Donau-Kreis. *Archäologische Ausgrabungen in Baden-Württemberg* 10: 19-21.
- Koenigswald, G.H.R. von 1964. Die Göttin ohne Gesicht, in *Miscelánea en Homenaje al Abate Henri Breuil*, Barcelona, Vol. 1, 487-94.
- Leroi-Gourhan, A. 1971. *Préhistoire de l'art occidental*. Éditions d'art Lucien Mazenod, Paris.
- Nobbs, M. 1992. Poster display presented to Second AURA Congress, Cairns, 31 August to 4 September 1992.
- Rice, P.C. 1981. Prehistoric Venuses: symbols of motherhood or womanhood? *Journal of Anthropological Research* 37: 402-14.
- Schelsky, H. 1964. *Soziologie der Sexualität*. Hamburg.
- Stumfohl, H. 1990. Die rote Farbe in Religion und Ritus, besonders in vorgeschichtlicher Hinsicht. *Almogaren* 21(1): 143-64.
- Tokarev, S.A. 1961. *Zur Bedeutung der Frauendarstellungen im Paläolithikum*. Beiträge zur Völkerforschung, Leipziger Museum für Völkerkunde, Berlin.
- McNickle, H. P. 1991. A survey of rock art in the Victoria River District, Northern Territory. *Rock Art Research* 8: 36-46.
- Welch, D. 1990. The bichrome art period in the Kimberley, Australia. *Rock Art Research* 7: 110-24.
- Whitley, D.S. and R.I. Dorn 1987. Rock art chronology in eastern California. *World Archaeology* 19: 150-64.