

Newly discovered rock paintings from Berinag (Uttarakhand, India) as mythograms *

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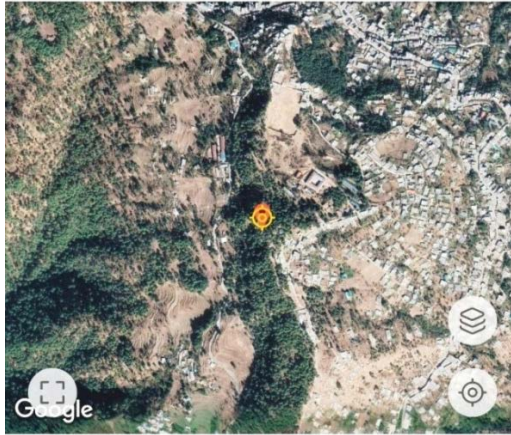
1. Introduction

Berinag, a small settlement, is situated in District Pithoragarh, a border district in the state of Uttarakhand, India. It borders Tibet in the north and Nepal in the east. Uttarakhand Himalaya is yet to be subjected to adequate prehistoric investigations despite the fact that sporadic discoveries of prehistoric remains have been reported from this region from the nineteenth century CE onwards. Thus, Henwood's report (Henwood 1856) on the discovery of "Rock-Basins at Deo (Devi) Dhoora" in Kumaon Himalaya (Uttarakhand) in 1856 is taken as the earliest published study of the palaeo-"art" in the world (Pradhan 2001: 3). Twenty years later, Rivett-Carnac (1877) wrote that the motifs such as found in the petroglyphs of Kumaon are widely distributed the world over. Therefore, he hypothesized that the petroglyphs represented the "ancient form of 'writing'" (Rivett-Carnac 1903: 518). Interestingly, cupmarks/cupules (Henwood's basins) are found all over the world and Bednarik's study compelling shows that at least in the Auditorium Cave, Bhimbetka (MadhyaPradesh, India), cupules were executed during the Lower Palaeolithic. Together with the evidence of Daraki-Chattan, another important petroglyph site in Madhya Pradesh, Bednarik (2007; 2009: 3) believes that in India cupules may date back to "several hundred millennia". Cupules are ubiquitous in Central Himalaya and some of them that are situated in the rocky forested tracts may be among the earliest human creativity in Central Himalaya cannot be ruled out, especially in the context of their functional significance as containers filled with sedative and saline liquid to

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attract game (Joshi 1987; Joshi *et al.* 2017). There is no doubt that all the palaeo drawings exhibit, what the noted archaeologist and palaeo drawing specialist Leroi-Gourhan (1993: 107) says: “a progressively growing faculty for symbolization”. Therefore, one should be wary of using the term “art” in describing palaeo drawings.

The present paper purports to report the first ever discovery of an interesting rock painting site. The paintings are done on now inaccessible surfaces of a cliff facing north-east. The cliff is situated at Jhaluvā Dhungā in Berinag (District Pithoragarh, Kumaon Himalaya) (Pl. I). The site is notorious as “Suicide-ridge” because in the past the steep incline of the cliff was used to commit suicide by some persons.¹



GPS Coordinates

Latitude

29.774786

Longitude

80.048877

Location

Line 1

[Q2FX+QF4](#) बडा झलवा ढुग, PG College Rd, Berinag, Uttarakhand 262531, India

Plate I

¹ The site is located close to the Government Post Graduate College, Berinag, District Pithoragarh.

The cliff consists of successive overhanging rocks (Pl. II). The awful vertical incline of the cliff cannot be negotiated without mountaineering skills. So far, some ten locations showing paintings in the cliff have been sighted. There is every possibility that a thorough search in the cliff would yield many more painted spots. The paintings are found at such awkward points that they cannot be photographed from adequate angles.

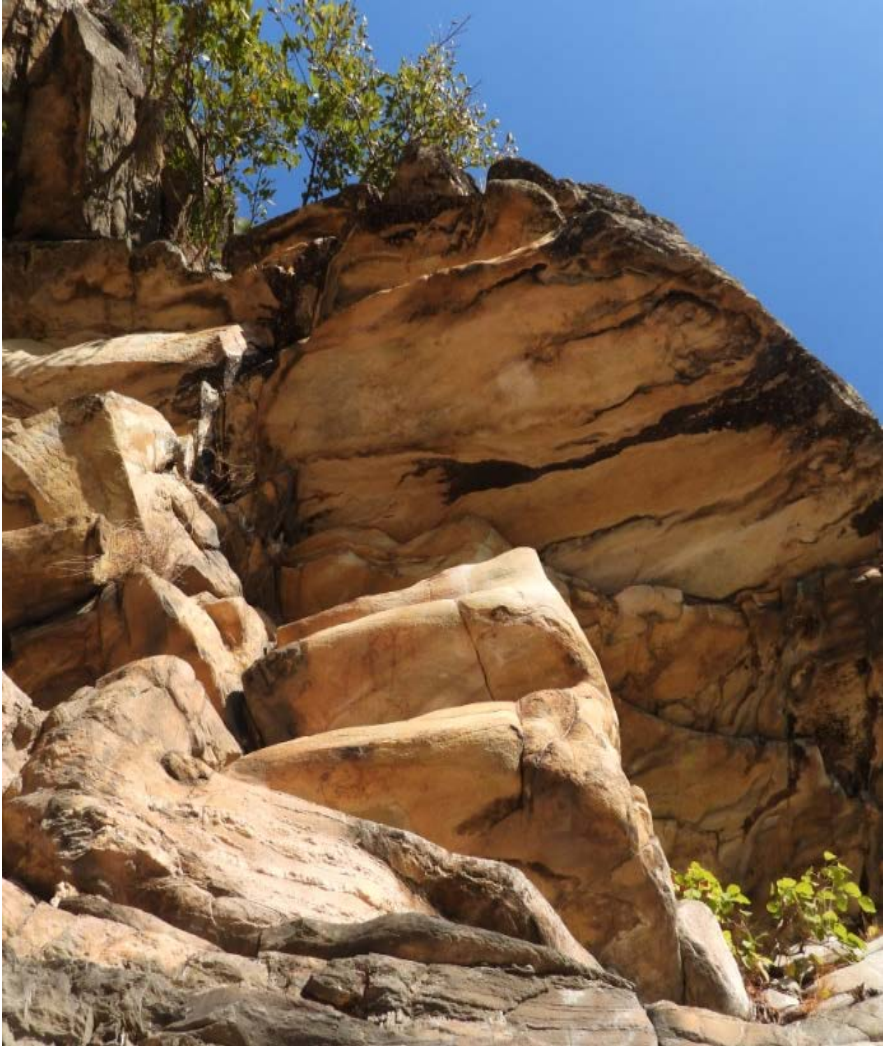


Plate II

2. The paintings

Rappelling from the “Suicide-ridge” point some 7.5 metres downwards there is a big overhang and immediately below it lies a receding step-like overhanging rock which houses the most interesting paintings of the site. The three naturally smooth surfaces of the overhanging rock have been used in executing the paintings. It is worthy of note that presently this overhanging rock cannot be accessed for close examination (Pl. III).²

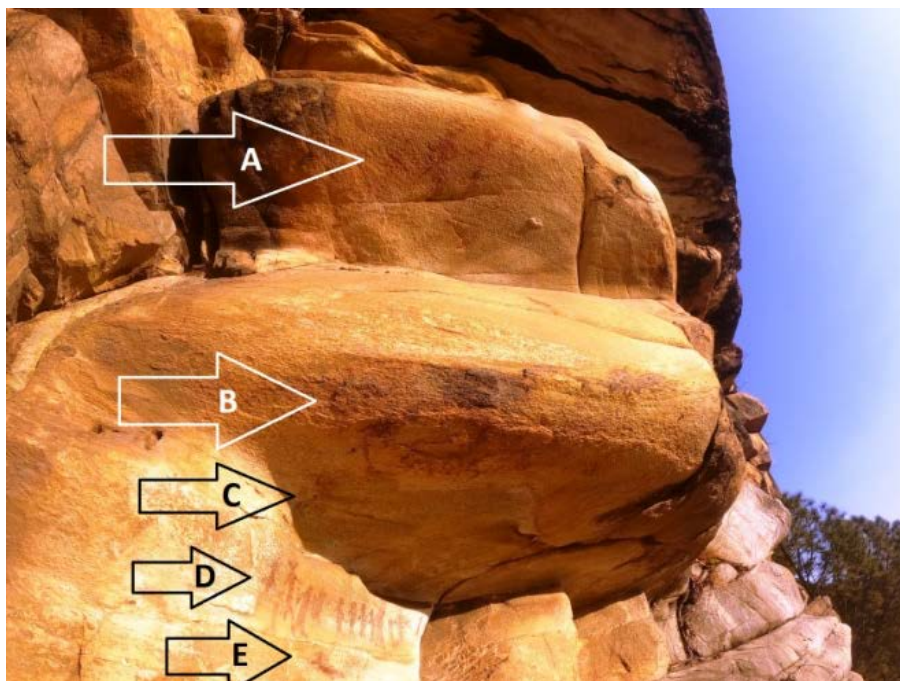


Plate III

The ceiling of the upper overhang shows four stylized anthropomorphic figures juxtaposed slightly obliquely as if in descending order (or vice versa?). All of them are adorned with a “horned” head-dress and their elbows turned outward, nearly akimbo. The two figures shown in the middle are taller and flanking them the remaining two are shorter. Below them is a shaft like pattern terminating on the

² The nearest point to reach the main paintings that can be negotiated on foot by climbing is about three metres away.

left into a "U"-like curve in outline and filled with geometrical pattern, on its right a quadruped (?), and further right an indistinct motif. On the extreme left of these motifs is a wavy line which looks like a flying bird or a snake, and on the extreme right a quadruped or else a prostrate anthropomorphic (?) figure. There are few oblique lines across the surface of the ceiling. We do not know whether they are natural or manually drawn to suggest terrestrial or extraterrestrial planes/pathways in relation to the anthropomorphic figures (Pl. IV).



Plate IV

The outer side of the lower ceiling depicts some five figures. The one on the extreme left is a bird like grotesque figure with round body and a headgear (?) resembling a bird's spread wings. On its right is an anthropomorphic figure to right as if chasing an animal flock. The left side of the inner part of the ceiling shows a long python like thick wavy line, and on the right side there is a medley of diverse enigmatic geometric and floral motifs (Pl. V).



Plate V

Immediately below on the left wall of the ceiling there are altogether thirteen representations done in solid (Pl. VI). The one on extreme left may represent either a prostrate quadruped having a thick tail or else a human figure (Pl. VII. 1).³ On the right, there are nine anthropomorphic figures wearing diverse headgears (Pl. VII. 2-10). Further, the motif on the extreme right appears to be a pointed stick (Pl. VII. 13). There are at least two more representations on the left of the pointed stick. The one on the immediate left of the pointed stick seems to be a tall human figure with slightly bowed head towards right. The tall figure appears to carry a tiny figure (a baby?) with rabbit like ears (headgear?) shown horizontally at the chest level of the tall figure (Pl. VII. 12).⁴ The adjoining figure on the left of the tall figure looks like a short anthropomorphic figure whose right hand seems to hold/touch the tiny figure's feet (? Pl. VII. 11). There appears to be a galloping deer (? Pl. VII. 14) below the two anthropomorphic figures (Pl. VII. 5-6) shown nearly in the middle of the composition. On the right of the deer there is an indistinct motif. There is no doubt that this composition portrays an elaborate narrative scene as evidenced in distinction in representation of the anthropomorphic figures in a circle. We will return to it in section 5 of this paper.

³ If this figure (Pl. VII. 1) represents a male, the tail like projection may represent the male genital organ, or else menstrual signal in case of a female (Power 2009; cf. Joshi 2014: in press, Pl. 19).

⁴ As in case of the figure on the extreme left (Pl. VII. 1), figure numbered VII. 12 may represent either a quadruped with a long tail, or else a male or female anthropomorphic figure somewhat similar to numbered VII. 1.



Plate VI

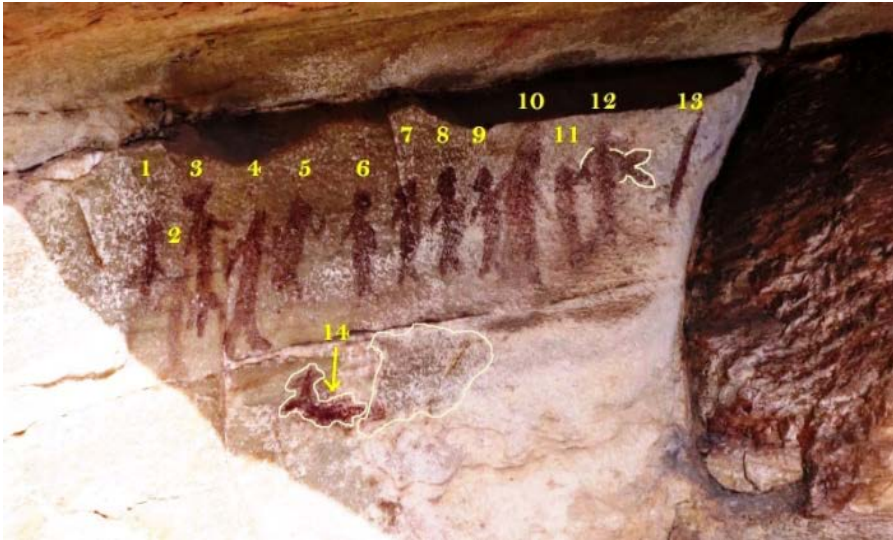


Plate VII

Below this composition towards right there are few geometrical patterns painted on a rough surface of the rock (Pl. VIII). On extreme left there are at least two stylized anthropomorphic figures. On their right there appears to be a pair of concentric circles with few stick-like projections radiating from the circle (?). On the right of this motif

there are few more stick like patterns which may represent stylized anthropomorphic figures (?).



Plate VIII

About two metres downwards the above-mentioned overhanging painted rock, there is a slight outcrop of rock. It has been dressed like a circular platform with a cup-mark dug into the left half (Pl. IX). Some seven metres away from this cup-mark towards right there is a tree like motif with large branches hanging down on left and right, somewhat like a willow plant, painted in red, and on the left an indistinct quadruped in grey colour (Pl. X).



Plate IX



Plate X

Further downwards, some eight metres from the cup-mark there are stalks of two tubular plants painted in dark grey on a smooth surface of a rock (Pl. XI).



Plate XI

3. Painting techniques

The Berinag rock paintings show both solid and transparent techniques in drawing. Thus, the anthropomorphic figures are invariably done in solid, others either in solid or in transparent technique. Interestingly, the animal figures and some other motifs done in transparent technique are filled with geometric patterns, which clearly display the painter's expertise in handling micrographic objects.

As noted above, the most interesting paintings of the site cannot be approached for close examination, therefore measurements of the painted motifs are rough. However, it is clear that the anthropomorphic figures in the Berinag paintings are done in two sizes, the larger ones measure approximately ± 20 cms, and the smaller ones between approximately ± 7 and ± 10 cms. The larger ones are found only on the upper ceiling of the overhanging rock. Animal figures

and some of the floral motifs are micrographic. The largest representation is that of the tubular plant like motif which measures above 30 cms.

With the exception of the quadruped and the tubular plant like motif, which are done in dark grey, the rest of the motifs are painted in different hues of red. It may be noted here that some of the rocks in the cliff are naturally red due to iron contents (?). Since pigments obtained from iron oxides and hydroxides are "metastable" and change colours (Bednarik 2002), nothing can be said about the original colours.

Interestingly, despite plenty of space one can notice superimposition of figures in the Berinag rock paintings. It is clear that this superimposition is synchronically imposed as it is linked with animation, to wit, the animal flock, or the tall anthropomorphic figure superimposed on the "baby" depicted horizontally as if the former is carrying the baby.

Paintings on the two ceilings of the overhanging rock described above are undoubtedly representative examples of prehistoric painters' mastery of awareness of framing, perspective, and animation to painting narrative scenes naturalistically. Thus, of the four anthropomorphic figures adorned with horned headgear on the upper ceiling the middle two are larger and flanking them on right and left are smaller. They are configured slightly obliquely, as if descending from a far-off quarter into the horizon. However, the eye-catching composition is found on the left wall of the lower ceiling of the overhanging rock showing thirteen objects (Pl. VI). Ten of these are clearly anthropomorphic figures arranged in a circle demonstrating their dancing gestures towards right (Pl. VII. 2, 4-6, 10-11) as well as left (Pl. VII. 3, 7-9). The composition exhibits superb perspective and animation as evidenced in the naturalistic gaits of the circularly configured larger and smaller figures.

4. Dating

When even scientific methods are not accepted as reliable, and considering diverse methods employed in dating prehistoric paintings, it would be an academic misadventure to date Berinag rock paintings. However, Joshi says that the earliest Central Himalayan pictographs do not depict any advanced tool technology, and anthropomorphic figures are barehanded. They show simple iconicity and small variety of aniconic motifs. On these grounds they compare well with the earliest rock paintings of Bhimbetka (Joshi 2019a: 113). Since the earliest Bhimbetka rock paintings are assigned to 40000-15000BP (Wakankar 1984: 51; cf. Allchin 1987: 145; Neumayer 1993: 32-4; Sonawane 1987;

Tewari 1990: 43), rock paintings of the Central Himalaya may be placed in the same time frame. This observation also seems to hold good in case of some of the Berinag paintings albeit anthropomorphic figures in them show marked distinction. In addition, it is also worthy of note that animal figures are painted in transparent technique and filled with geometric patterns. It draws our attention to the “en-graved Mesolithic core from Chandravati, Rajasthan” (Sonawane 1987). It bears geometrical patterns resembling with some of the painted “designs” found in the rock paintings at “Bhimbetka-IIF-20, III C-13, C-21, Chiklod-I-9, Modi-6, Kathotia Karad, Jaura, Kota, Badami and other sites” (Sonawane 1987: 55). Likewise, Tewari (1990: 43) informs about similarity between certain motifs depicted in the rock paintings and ostrich egg-shell engravings, the latter dateable to about “25000 BC”. Furthermore, in some places surfaces of the painted rocks are patinated, which indicate that some of the Berinag paintings were done during those times when the surfaces under reference were easily accessible for painting, and in all probability before patination. It is to be noted here that despite severe criticism, dating the palaeo drawings on stylistic considerations coupled with circumstantial evidence still holds, for new laboratory tests on rock drawings are not only expensive but “equally inconsistent” (see Clottes 1997; Watchman 1997).

5. Interpreting Berinag rock paintings

Of all the rock paintings found in Uttarakhand Himalaya, the Berinag paintings form a class by themselves. They feature naturalistic representation of the anthropomorphic figures in perspective as evidenced in sharp distinction, particularly in their height and hairdo, and pattern and direction of their gaits, all remarkable examples of animation (Pls. VI-VII). This issue draws our attention to “The Birth of Graphism” (Leroi-Gourhan 1993: Ch. I. 6) and the process of externalization of memory (*ibid*: II. 7 and II. 9). They exhibit humankind’s symbolic behaviour, which being the defining characteristic of human species (see for details, *ibid*: *in passim*; Renfrew 2001; Renfrew 2008: Ch. 6, and *in passim*). Admittedly, human interest in aesthetics has deep antiquity as noticed in the production of “artifactual symmetry” in the Acheulean artefacts which is taken as “the first episode of development” in cognition (Wynn 2002: 398-400). Aesthetics has “different levels – *physiological, technical, social, and figurative...* within which human sensations are ordered” (Leroi-Gourhan 1993: 272; see, Joshi 2019: in press, for further references). Thus, to style aesthetics as an “art” object would be misleading. Likewise, describing prehistoric rock drawings as examples of “art” amounts to assigning the modern

concept of "art" to a society which was always in the move to gather food. Thus, interpreting prehistoric rock drawings (pictographs and petroglyphs) as "art" is a risky proposition, for the word "art" does not exist in the vocabulary of many societies known for "splendid rock paintings" (Mithen 1998: 175). Contextually, we believe that the Berinag paintings should be read "as symbols and mythograms representing visual version of a now lost oral context" (see for details and further references, Joshi 2019: in press). Since the scope of this aspect is wide, we will confine our interpretation to the anthropomorphic figures described above.

It may be noted here that Berinag is situated in Eastern Kumaon. This area along with adjoining Far West Nepal is noted for being the habitat of the foraging tribe "Raute, Raji or Banraji" (Fortier 2009; Rastogi 2017). Origin of their language named "Raji or Raute" remains disputed (Krishnan cited in Zoller 2016: 3). However, it is included in the "Himalayish group of Tibeto-Burman" (Pokharel 2020: x). Further towards east in Nepal is the habitat of another foraging tribe who call themselves "mihaq Ban Raja" and speak "Kusunda", a language isolate (Watters 2006: 14). It is also to be noted that Burushaski is another language isolate which is spoken in the central Hunza Valley of the northern Pakistani Himalaya (Turin and Zeisler 2011: 1). Joshi postulates that it is likely that the forebears of Kusunda and Burushaski speakers represented the authors of the prehistoric material culture of the Himalaya for archaeologists have discovered prehistoric remains in the vicinity of the present habitats of those peoples (Joshi 2019a; 2019b).

In support of his postulations Joshi adds that Burushaski is considered to be one of the branches of Basque, and Basque is "related to the language spoken by Cro-Magnons, the first modern humans in Europe" (Cavalli-Sforza 2001: 112, 121, 141-2, 149, 158). Likewise, can the narrative scenes of the Berinag rock paintings be explained in the light of religious beliefs and practices of the Raji, Raute or Banraji? Thus, the Raji refer to the world as the "children of god". For them both animate and inanimate entities are supernaturally living "non-human persons". Their belief system recognises "supernatural manifestation" of divinities that include supernatural animals. "Shamans" play central role in their religion, and they are capable of making "direct communication" with deities "during dance and ritual shamanic performances" (Fortier 2009: Ch. 8).

Keeping in mind the Raji religious belief system we begin with the assumption that the paintings on the upper and the lower ceilings of the overhanging rock are contemporaneous and interconnected. Accordingly, in the light of religious beliefs and practices of the Raji, depiction of the four anthropomorphic figures adorned with identical

horned headgear and bodily posture on the upper ceiling of the overhanging rock suggests their extraterrestrial association. Since these figures are juxtaposed slightly obliquely, therefore it is likely that the same figure is repeated in different sizes as an example of animation and framing to communicate that the extraterrestrial being (a solar deity?) is descending from a higher plane (sky?) to the lower one towards the earth. It draws our attention to the Raji solar deity "Damu" who first created foods, waters, forests, birds, insects, monkeys, tigers, snakes, trees, and even the stars (Fortier 2009: 147). Alternatively if the figure is ascending from the earth towards the sky, it may represent a deceased person for the Raji believe that "humans don't just deteriorate—they go into the sky" (Fortier 2009: 150).

Next, the lower ceiling of the overhanging rock shows at least five figures which include a bird like figure, a human figure and a flock of animals on the outer side, and serpentine, floral and geometrical motifs on the inner side. The human figure does not hold anything and therefore cannot be identified as a hunter. The overall presentation of this medley of motifs may have been intended to portray floral and faunal surroundings in relation to human species as creation of the extraterrestrial agency, the above-mentioned solar deity of the Raji (?).

The most interesting example of the Berinag rock paintings that clearly represents a mythogram is found on the side wall of the lower ceiling. As mentioned above, it shows thirteen motifs of which ten are clearly anthropomorphic figures configured in a circle. Their gaits are naturalistic and vividly illustrate not only their movements towards right as well as left but also their oral gestures (Pl. VII. 6-7). Admittedly, this visual version of an oral communication cannot be retrieved, but it clearly demonstrates that the group represents a ceremonial congregation.

In a discussion on the symbolic cognition of the rock paintings of Central Himalaya, Joshi suggested that some of them may be associated with spirit possession and trance journeys, and some with ancestor worship, which may have stemmed from the then existing religious beliefs and practices (see for details and further references, Joshi 2014: in press; Joshi 2019: in press; Joshi 2022). Paintings interpreted as representing spirit possession scenes fall in the domain of "shamanistic" interpretation. Be that as it may, in case of the thirteen figures in circular configuration, there is no doubt that they depict assemblage of at least three types of anthropomorphic figures differentiated according to their respective headdresses (Pl. VI). Thus, from left to right, figure numbered VII. 3 is adorned with a headgear resembling a rabbit's long ears, figures numbered VII. 2, 4, 5, and 6 are shown with horned headdresses, and hairdos of figures numbered

VII. 7 to VI. 10, and probably numbered VII. 11 as well, seem to have been arranged in top knot. As noted above, portrayal of the larger and the smaller figures in perspective and naturalistic dancing gestures exemplifies superb animation. According to Leroi-Gourhan (1982: 36), assemblage of figures denotes space, and animation for time, "for measuring spatio-temporal symbolism". He also suggests that painted caves may be considered as "a 'temple', that is, as a cult place accessible to all or at least a relatively large proportion of the community" (Leroi-Gourhan 1982: 75).

Applying this information to the rock paintings of the Central Himalaya in particular, it was observed that spirit possession and trance journeys called *jāgara*, *ghaḍyāli*, *ghayālu*, *ghayālo*, etc., may be traced to the prehistoric times (Joshi 2014: in press). They are comparable to those of the San shamans of Africa who "induce an altered state of consciousness by intense concentration, audio-driving, prolonged rhythmic movement, and hyperventilation (swift, shallow breathing)" (Lewis-Williams 2012 [2002]: 141). The Central Himalayan trance journeys are not induced by means of hallucinogenic plants. They are "ritual trance" (cf. Helvenston and Bahn 2005: 25) officiated by a priest called *jaḡari* who induces participants to go into trance journeys by means of audio-driving. The priest conducts the possessed persons as if controlling the spirits. Interestingly, while in trance the possessed persons called *daṅgari*, *autari*, etc., move in a circle and make such gestures as if transformed into some or other "form" narrated by the *jaḡari* (see Bernède 2001). When the *jāgara* ritual is in progress, depending on its theme, irrespective of caste and gender, any number of mediums can go into trance and enact accordingly. For example, in the *Jiyārānī/Maulā jāgara* as many as twenty mediums go into trance, and each one is possessed by a discrete spirit (see Joshi 2014).

To return to the thirteen figures depicted on the left wall of the lower ceiling of the overhanging rock, one can clearly discern distinction in representation of anthropomorphic figures as noticed in their respective headgears, bodily gestures, sizes and movements. Applying shamanistic interpretation to this representation, we may take the anthropomorphic figures as persons in trance journey. We do not know whether depiction of figures with rabbit like ears (Pl. VII. 3) or with "horns" (Pl. VII. 4, 5, 6) is intended to show "shamans" in action assuming the forms of extraterrestrial entities (divinities?), it is clear that a figure whose hair is done in top knot is engaged in face to face oral communication with a "horned" figure (Pl. VII. 6-7). Dialogue between the priest and the possessed person is an indispensable part of the spirit possession séance in Uttarakhand Himalaya. Be that as it may, we strongly believe that this composition is a visual representa-

tion of the externalised memory of the authors of the Berinag paintings.

As stated above, we assume that all the paintings on the ceilings of the overhanging rock described above are interconnected. If so, it may be suggested that the painter conceived the four anthropomorphic figures on the upper ceiling of the overhanging rock as divine beings descending from the extra terrestrial plane into the earth. The earth is symbolically represented by the floral and faunal motifs depicted on the lower ceiling of the overhanging rock as creation of the divinity. Below them, on the left wall of the lower ceiling of the overhanging rock there are 13 motifs, ten of which depict anthropomorphic figures undoubtedly arranged in a circle. Following shamanistic interpretation of the rock paintings, it may be suggested that they represent “shamans”/human mediums in trance journey assuming the form of those beings that are conceived as spirits from the sky descending from the extraterrestrial plane, as depicted on the upper ceiling of the overhanging rock. The above interpretation conforms to the Raji belief system which recognises existence of animals spirits. We are told that when Raji “drum leaders (*gurau*) become possessed, they sometimes transmogrify into the form of a tiger” (Fortier 2009: 152-5). Likewise, in antiquity the “shamans” may have been transmogrifying into the form of a rabbit-like being or a horned animal as depicted in the Berinag rock paintings described above. Thus, the Raji religious belief system accords with our assumption that these three painted rock surfaces might be interconnected.

In this connection it is worthy of note that on the basis of the San folklore and religious beliefs and practices, Lewis-Williams and Clottes (1998), Lewis-Williams (2012 [2002]: Ch. 5, and *in passim*; 2013), and Lewis-Williams and Pearce (2004) have given compelling shamanistic explanation of certain motifs occurring in the palaeo drawings of Africa. Likewise, we strongly feel that the Berinag rock paintings are representative examples of shamanistic interpretation to explaining the semiotics of the Central Himalayan prehistoric narrative drawings.

6. Concluding remarks

While discussing material culture as proxy for language, Joshi draws our attention to the fact that in Central Himalaya there is no tradition of painting in the trance journey. However, Joshi suggests that like the San in Africa (Lewis-Williams 2012 [2002]: 125, 135, and *in passim*), the authors of figurative paintings on the rocks expressed their perception of extraterrestrial/divine agency due to deficiency in spoken language. The Berinag paintings are the representative exam-

ples of externalization of memory exhibiting the symbols in action. They are mythograms, visual version of a now lost oral context. They help us reconstruct the prehistory of the Himalayan languages (see for details, Joshi 2014: in press; Joshi 2019a; 2019b; Joshi 2019: in press). We conclude with Leroi-Gourhan's following observation on the Prehistoric rock paintings of Europe:

They are really "mythograms," closer to ideograms than to pictograms and closer to pictograms than to descriptive art (Leroi-Gourhan 1993: 191).



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Bibliography

- Allchin, Bridget. 1987. South Asian rock art. *Journal of the Royal Society of Arts*, 135 (5366): 138-56.
- Bednarik, Robert G. 2002. Rock art, taphonomy and epistemology. Available at: <http://www.ifrao.com/palaeoart-epistemology/> (accessed on March 2, 2024).
- 2007. Lower Palaeolithic rock art of India and its global context. Available at: http://www.ifrao.com/wp-content/uploads/2014/06/Man_in_India_2007.pdf (accessed on March 2, 2024).

- _____. 2009. The global context of Lower Palaeolithic Indian palaeoart. *Man and Environment*, xxxiv (2): 1-16.
- Bernède, Franck. 2001. Le geste divinisé: Regards sur la transe ritualisée au Kumaon (Himalaya occidentale). *Cahiers de musiques traditionnelles*, 14: 143-66.
- Cavalli-Sforza, Luigi Luca. 2001. *Genes, Peoples and Languages*. Translated by Mark Seielstad. London: Penguin Books.
- Clottes, Jean. 1997. New laboratory techniques and their impact on Paleolithic Cave Art. In: Margaret W. Conkey, Olga Soffer, Deborah Stratmann and Nina G. Jablonski (ed.), *Beyond Art: Pleistocene Image and Symbol*: 37-52. Wattis Symposium Series in Anthropology, Memoirs of the California Academy of Sciences, Number 23. California, San Francisco.
- Helvenston, Patricia A. and Paul G. Bahn. 2005. *Waking the Trance Fixed*. Louisville: Wasteland Press.
- Henwood, W. J. 1856. Notice of the rock basons at Deo (Devi) Dhoora near Almorah in Upper India. *Edinburg New Philosophical Journal*, New Series, IV: 204-06.
- Joshi, Maheshwar P. 1987. Dots, cup-marks and pits vis-à-vis the megaliths: new evidences from Kumaon. *Puratattva*, 16: 25-28.
- _____. 2014. The Bhārata/Jāgara of Maulā alias Jiyā Rānī as Narrated in Doti (Far Western Nepal) and Uttarakhand (India): Text and context. *European Bulletin of Himalayan Research*, 44: 9-38.
- _____. 2019a. Material culture as proxy for language: the Himalayan evidence. *Revue d'Etudes Tibétaines*, no. 48, Avril 2019: 91-138.
- _____. 2019b. Cognitive archaeology: in search of the earliest syntactic language-users in Himalaya. *Gipan*, 4: 1-18.
- _____. 2022. Cognition: some aspects of symbolism in rock drawings of Central Himalaya. In: Bansi Lal Malla (ed.), *Theoretical and Cognitive Aspects of Rock Art*: 23-45. New Delhi: Indira Gandhi National Centre for the Arts.
- _____. 2014: in press. Rock paintings of Central Himalaya and symbolic cognition: a new look at the prehistoric rock paintings of South Asia. *Ancient India*, New Series, Nos. 2 & 3: Ch. 2. New Delhi: Archaeological Survey of India.
- _____. 2019: in press. Remembering André Leroi-Gourhan: The South Asian *Ādi dṛiśya* (rock drawings). National Seminar on 'Rock Art Research in India'. Indira Gandhi National Centre for the Arts, New Delhi, May 2-4, 2019.
- Joshi, Maheshwar P., Hari Chauhan, Vijay Bahuguna, D.N. Dimri and K.C. Nauriyal. 2017. Petroglyphs and rock paintings of Uttarakhand and Himachal Pradesh: A semiotic study. In: Sadasiba Pradhan and Dibisat B. Garnayak (ed.), *Rock Art in India*, Volume II: 447-67. New Delhi: B.R. Publishing Corporation.

- Leroi-Gourhan, André. 1982. *The Dawn of European Art: An Introduction to Palaeolithic Cave Paintings*. Translated by Sara Champion. Cambridge: Cambridge University Press.
- _____. 1993 (1964-1965). *Gesture and Speech*. Translated from the French [*Le Geste et la parole*, 1964-1965] by Anna Bostock Berger and introduction by Randall White. Cambridge, Massachusetts: An October Book, The MIT Press.
- Lewis-Williams, J. David. 1983. *The Rock Art of Southern Africa*. Cambridge: Cambridge University Press.
- _____. 2012 (2002). *The Mind in the Cave: Consciousness and the Origins of Art*. Reprinted paperback edition. London: Thames & Hudson.
- _____. 2013. From illustration to social intervention: three nineteenth-century Xam myths and their implications for understanding San rock art. *Cambridge Archaeological Journal*, 23 (2): 241-62.
- Lewis-Williams, J. David and T. Dowson. 1988. Signs of all times: entoptic phenomena in Upper Palaeolithic art. *Current Anthropology*, 29 (2): 201-245
- Lewis-Williams, J. David and David G. Pearce. 2004. Southern African San rock painting as social intervention: a study of rain-control images. *African Archaeological Review*, 21 (4): 199-228.
- Mithen, Steven. 1998. The supernatural beings of prehistory and the external storage of religious ideas. In: Colin Renfrew and Chris Scarre (ed.), *Cognition and Material Culture: the Archaeology of Symbolic Storage*: 97-106. Cambridge: McDonald Institute for Archaeological Research.
- Neumayer, Erwin. 1983. *Prehistoric Indian Rock Paintings*. Delhi: Oxford University Press.
- Pokharel, Madhav P. 2020. Editorial. In: B.K. Joshi, Madhav P. Pokharel and Maheshwar P. Joshi (ed.), *Language Endangerment and Language Revitalization in Himalaya*: ix-x. Dehradun: Doon Library and Research Centre & Bishen Singh Mahendra Pal Singh.
- Power, Camilla. 2009. Sexual selection models for the emergence of symbolic communication: why they should be reversed. In: Rudolf Botha and Chris Knight (ed.), *The Cradle of Language*: 257-80. Oxford: Oxford University Press.
- Pradhan, Sadasiba. 2001. *Rock Art in Orissa*. New Delhi: Aryan Books International.
- Rastogi, Kavita. 2017. Raji: Challenges of preservation and revitalization. In: B.K. Joshi and Maheshwar P. Joshi (ed.), *Unfolding Central Himalaya: The Cradle of Culture*: 99-113. Dehradun: Doon Library and Research Centre and Almora: Almora Book Depot.
- Renfrew, Colin. 2001. Symbol before concept: material engagement and the early development of society. In: Ian Hodder (ed.), *Archaeological Theory Today*: 122-40. Cambridge: Polity Press.

- 2008. *Prehistory: The Making of the Human Mind*. E-book. New York: The Modern Library.
- Rivett-Carnac, J.H. 1877. Rough notes on some ancient sculpturing on rocks in Kumaon similar to those found in monoliths and rocks in Europe. *Journal of Asiatic Society of Bengal*, XLVI (1): 1-15.
- 1903. Cup-Marks as an archaic form of inscription. *The Journal of the Royal Asiatic Society of Great Britain and Ireland*, 35 (3): 517-543.
- Sonawane, V.H. 1987. An engraved Mesolithic core from Chandravati, Rajasthan. In: B.M. Pandey and B.D. Chattopadhyaya (ed.), *Archaeology and History, Essays in Memory of Shri A. Ghosh*, Volume I: 53-56. Delhi: Agam Kala Prakashan.
- Tewari, Rakesh. 1990. *Rock Art of Mirzapur*. Lucknow: Eureka Printers.
- Turin, Mark and Bettina Zeisler. 2011. *Himalayan Languages and Linguistics: Studies in Phonology, Semantics, Morphology and Syntax*. Leiden: Brill.
- Wakankar, V. S. 1984. Bhimbetka and dating of Indian rock-paintings. In: K. K. Chakravarty (ed.), *Rock-art of India: Paintings and Engravings*: 44-56. New Delhi: Arnold-Heinemann.
- Watchman, Alan. 1997. Paleolithic marks: archaeometric perspectives. In: Margaret W. Conkey, Olga Soffer, Deborah Stratmann and Nina G. Jablonski (ed.), *Beyond Art: Pleistocene Image and Symbol*: 19-36. *Memoirs of the California Academy of Sciences*, Number 23. California, San Francisco.
- Watters, D. E. 2006. *Notes on Kusunda grammar (a language isolate of Nepal)*. Kathmandu: National Foundation for the Development of Indigenous Nationalities.
- Wynn, Thomas. 2002. Archaeology and cognitive evolution. *Behavioral and Brain Sciences*, 25: 389-438.
- Zoller, Claus Peter. 2016. *Proto Indo-European-Indo-Aryan-Himalayan Aryan Languages: New Perspectives on Some Old Questions*. Dehradun: Doon Library and Research Centre and M/s Bishen Singh Mahendra Pal Singh.

