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RASI PROTOCOL FOR ROCK ART RESEARCH AND ITS PUBLICATION

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Abstract: In the RASI Congress Tirupati, February 2017 the issue of the quality of research papers on rock art was discussed seriously and the RASI General Body asked me to prepare a Protocol to help the scholars in conducting field work in rock art research and after that for preparing a quality research paper/article for publication in Purakala, the Journal of Rock Art Society of India (RASI). I observed that the reason lies in our observation and documentation of the rock art and the rock art site and in our attitude and approach to deal with it. Keeping in mind these factors I formulated the guidelines for the study of rock art and rock art site(s) and its presentation for publication in Purakala. It will be called as RASI Protocol for rock art research and its publication. Further, it was revised several times and improved as per the suggestions offered by the referees and the Editorial Board of Advisors of Purakala and is presented here. It will help us to prepare a comprehensive and compact research paper and also to maintain the standard of the International Federation of Rock Art Organisations (IFRAO) in rock art research in India.

Introduction

Rock art is a global phenomenon. It forms the human manifestations on the bare surface of rock in different geological, geographical and climatic zones. Therefore, it reflects human mind and thought processes and also of his perception of reality through the history of human development.

Rock art is the only surviving direct evidence for the study of cognitive and cultural development of the humans right from the beginning. However, rock art study is not so simple. It is a comparatively new discipline of learning and is growing slowly but steadily. Therefore, it has its own challenges to be met with. It is also in the process of developing its theories and research methodologies, a set of principles, guidelines and ethics to be followed. Some of the countries in the world like France, Australia and some others are progressing fast in this direction. However,

the pace of development is very slow in many other countries especially in the Old-World including India. There are many reasons for that, however the major one is the old mindset of research following the obsolete European model of human development. We need to follow the more scientific evolutionary model. Secondly, we have to consider and treat rock art as a multidisciplinary discipline rather as a tutelary branch of archaeology and anthropology (Kumar 2018).

Rock art research

The research should be problem oriented. Therefore, before indulging in the rock art research one must have clear objectives and problems in the mind and has to follow the path and directions accordingly. Reporting of the mere discovery of rock art sites is the very primary stage, however, it provides the basic data for further research hence, should have to be presented in the complete perspectives of the geology, nature of the rock, geography especially climate of the region and its effect on rock art and on the rock bearing it, archaeological and cultural background and also ethnological practices of the region.

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RASI Protocol

RASI protocol has been prepared for preparing a comprehensive and compact good quality research paper as per the norms of IFRAO. It is in two parts. Part A: Research in the field, studio and laboratory; and Part B: Preparation of the article for publication in *Purakala*, the journal of Rock Art Society of India.

Part A: Research in the field, studio and laboratory

The research in the field forms the foundation for the initial study and presentation of the discovery of a site. Based on it the problem oriented or theme oriented advanced research projects can be formulated and accordingly the comprehensive and compact good quality research papers can be prepared.

Geography and Geomorphology of the site

Observe and note the geography of the site, its location on the plateau, nala or river gorge, on the hill or in the open, nearby village or important local spot, tehsil, district and the region; geology, lithology (type

and nature of the rock), nature of the rock art site (open boulder, rock shelter or cave), its dimensions, the direction of its facing, location of the river, rivulet (nala) and lake or any water body by the or in the vicinity of the site. Geo-coordinates of the site should also be taken for record. However, as the IFRAO policy we do not publish the geo-coordinates of the site for protection and security reasons. For the same reasons also, we do not give the exact location of the site as the sites are prone to be damaged by the visitors. Also mention briefly about the flora, fauna and people of the region along with their cultural traditions.

Technique of the creation of rock art

Observe the technique of the creation of rock art. Rock art is produced by two kind of techniques:

1. By additive technique: Rock art made by applying pigment or any other material, note the technique of its application: by brush, finger, spray, etc. Observe the presumed pigment used. This kind of rock art is known as rock painting(s).
2. By reductive technique: Rock art made by reducing the rock: by pecking, engraving, bruising, etc. Observe the technique presumably used. This kind of rock art is known as petroglyph(s).

Spatial distribution

Observe the available total space at the site, the particular portion of the space used for the creation of the motifs/compositions, visibility from distance, strategic location if any.

Identification of the figures and motifs

Observe and describe the rock art as a composition/ activity or animal, anthropomorph, an apparently aniconic design or a geometrical form. Identify the figures and motifs only when you are sure, otherwise avoid imposing your perception on it.

Dimension and direction

In a composition measure the length and height of the composition and also that of a prominent figure in it; also note its orientation or movement whether to your left or right. If the motif is single

measure its length and height.

Taphonomy of the site and rock art there in

Observe the effect of climate on the rock surface and rock art.

(State of preservation/ weathering of the rock surface and chronology of the figures)

Weathering: In rock art research understanding the type and nature of the rock and its weathering pattern is important, hence should be noted carefully. Observe the surface, layers of its weathering and on which weathered layer the motif/ composition has been made. If it is overlapping the new weathered surface, etc. or being damaged by weathering? Observe the weathering of the edges of the weathered rock surface (i.e. rounding of the edge of the weathered surface is called macro-wane); the greater the rounding of the edge the older is the age of it. Establish the stratigraphy and chronology of the figures/compositions according to the sequence of weathering and exfoliation events.

Also observe why certain surfaces in a rock shelter, cave or on a stone block are devoid of rock art motifs. Is it because of exfoliation of the surface? If it is so the weathered pieces/slabs bearing rock art might be lying in the sediments of the site. Note down it properly.

Also observe the effect of rain water on the site and on the rock art figures and motifs, in case of rock paintings change of the colour that occurred due to it. If wax or fat was mixed with the pigment it might have encouraged the growth of fungus and blackening of the pigment in due course of time. Humidity in the climate favours the growth of algae which makes the figures green. The growth of lichens can blacken the surface and rock art figures and motifs. Use a magnifying glass to observe such organic features.

The observation of these taphonomical factors will help in establishing the chronology of the figures and compositions of the site.

Superimposition

Observe the superimposition with magnifying glass or by enlarging the figure in the computer and

establish the superimposition and chronology of the figures. Alternatively use D-Stretch or other digital enhancing method.

Encrustation of the rock surface and rock art motifs

Flowing or sweeping of rain water deposits salts on the rock surface or motif. It is called accretion. Observe whether the figures are concealed by the accretion or they are overlapping it. It will provide a relative chronology of the figures. Also observe carefully whether it is still a continuing phenomenon or has been stopped at some point of time. In the latter case the system becomes closed and the accretion may under some conditions be used for scientific dating of the rock art.

Stratigraphy and Chronology

Establish the tentative stratigraphy and chronology of the motifs, figures and compositions based on the factors described above, of a rock art site, the site complex and the region. It is a scientific way. Classify the figures in to Cattle domestication period with developmental traits in it and hunting foraging period preceding it. In the latter case (hunting foraging life) find whether the motif is iconic or non-iconic, if iconic -is it associated with the depiction of implements made of microliths, bones, wood, etc. and develop the chronological phases in it. Use the term Mesolithic, Neolithic, Chalcolithic, Historic, etc for further classification only when you are certain. For more details please refer to Kumar 2000-01; 2015.

Archaeological material

Look carefully for archaeological material lying inside or outside the site and also in the associated or adjoining region, then if possible try to understand how it might be related with rock art there and with which phase of it.

Discrimination between anthropogenic and non-anthropogenic petroglyph motifs

In the case of the petroglyphs, it becomes necessary to discriminate (identify) whether the motif is made by man (anthropogenic) or by any other agency (nature, animal, etc) (non-anthropogenic). Careful observation helps us in the following way:

1. In case of anthropogenic cupules the surface will always be receding inside while in that made of by nature or by any other agency it can be almost vertical. In the first case the edge of the cupule will be round while in the latter case it will be almost sharp because in most of the cases the phenomenon working on it is still continuing.
2. In case of the lines made by animal claws they will always be in a set of three, four or five depending upon the number of digits in the animal claw and most frequently is from upwards to down wards. The direction of the manifestation of lines can easily be identified under a magnifying glass in which you can observe the fracturing of the edges of lines in one direction only.
3. Avoid imagining motifs on rock surfaces. This phenomenon is called pareidolia. You can check it by observing the crystals of the rock inside the petroglyph under magnifying glass. If they are fractured, it means the markings are anthropogenic (manmade), if they are in natural geometric form they are not petroglyphs, you are only imagining the forms.

Ethnological parallels

Observe the ethnological parallels of art traditions similar to rock art in the communities living in the study area. Is the practice of painting in the rock shelter(s) still continuing? Be honest while drawing the continuity of the tradition. Give your observation separately; do not try to impose it on rock art.

Understanding the rock art activities

Your overall observations about the site (single rock or rock shelter or a complex of them, or a cave) and rock art there in will help you to understand the site use pattern and its continuity, to develop the chronology and establish the ecology based on rock art (particularly animals depicted) and climatic factors, subsistence pattern, relationship of the humans with nature, cultural life, etc. also observe the continuity of the cultural behaviour at or nearby the rock art site and also nearby the religious site.

Interpretation

Testable propositions only are accepted for interpretation of rock art. It means any one at any time

should be able to test your given propositions for interpretation of rock art. Avoid interpreting the meaning of rock art (motifs) as only the authors (artist) of rock art know its exact meaning, others cannot understand it. Even at present the art experts cannot draw the same meaning of the painting while judging it.

Documentation of rock art

Document as much detail of the site and rock art as you can, like a forensic scientist observes a crime site for collecting evidence. When you will assemble all the evidence it will help you to understand it.

Always use the standard IFRAO colour scale of 10.00 cm size for rock art photography (there can be exceptions where the figures are at a great height or so and it becomes very difficult to reach there to use the scale). For this purpose, either one can hold the scale preferably horizontal in the frame of the photograph or fix the scale on the surface temporarily by using the white portion only of the M-Seal. It does not spoil or damage the figure and also the rock surface. If available you can use Bluetack. It is supplied by stationery shops. It comes in different colours and you should find a version that does not leave any traces on the rock surface. For small figures or microphotography use the micro-scale given on the left side of the IFRAO colour scale.

Keep the scale usually at the bottom of the figure/ composition at a distance or on the side of the figure and maintain a distance so that it should not disturb the overall impact of the figure or composition. You must also take a photograph of the large area around the figure and/or composition. The scale gives an idea of the figure size and also helps to retrieve the exact shade of the colours even after centuries. The IFRAO scale can be obtained on request from the Secretary General, RASI by giving about your research background in rock art and plan of future work.

In case of the copies of rock art the hand drawings should accompany an honest note about the percentage of their accuracy or simply mention that these are the freehand eye copies.

IFRAO code of ethics

Observe the IFRAO code of ethics while studying rock art. Any interference with rock art, direct

or indirect, is unethical. Therefore, do not write anything inside or outside the shelter or rock. Nothing should be applied on rock art for enhancing the colour contrast or increasing the visibility of paintings or petroglyphs for recording or study purpose in the field. If it is done with the help of computers you have to mention it clearly in the comments inside the paper. The photographs taken by splashing or sprinkling water on the paintings or after applying chalk or paint on the petroglyphs is unethical. Such photographs are not accepted for academic publication in the journals of the IFRAO family anywhere in the world.

Preparing a map and presentation of the data collected

Prepare a map of the spatial distribution of the figures and motifs in the rock shelter or on a rock. Also prepare a rock art site map showing their distribution and demarcate each with its local name if any, if it is not you can give an identity to it. The distribution map of the rock art sites in the region under study is also recommended for the comprehensive study of the rock art in the region. For presentation of the data collected you can follow either Kumar 2007: 21-134 or Muhammed 2007: 7-20 or Ota and Manuel 2007: 336-344 as you prefer.

Remarks

In the end give your remarks about the characteristic features of the site (site complex) and rock art there in, its significance and potential for further scientific study.

Developing a research project for further scientific study

If you find a site or a complex of sites worth to be studied much more deeply and if you have some issues or problems to be solved by further scientific study you can develop a theme-oriented research project accordingly and apply for funding. In the further research papers the basic details need not to be repeated, give its reference only.

Part B: Preparing a research paper for publication

By following the RASI protocol prepare a comprehensive and compact research paper or a note

worth for publication in a Rock Art Research Journal and which can help in the promotion of Rock Art Discipline.

Citing and formatting the references

References are the backbone of a research paper. They provide a strong base for it hence must be cited properly in the text and should be given adequately in the end of the paper in alphabetical order. *Purakala* uses international pattern of referencing adopted by IFRAO, so please refer *Purakala* volumes for proper understanding its reference pattern and their citation in the text of the paper practically. A few examples are being given below to help the readers.

Citing of the article published in the journals:

ACHARYYA, S. K. and P. K. BASU 1993. Toba ash on the Indian subcontinent and its implications for the correlation of Late Pleistocene alluvium. *Quaternary Research* 40:10-19.

Should be cited inside the text as (Acharya and Basu 1993:10-19)

SONAKIA, A. 1984. The skull cap of early man and associated mammalian fauna from Narmada valley alluvium, Hoshangabad area, M.P. (India). *Records of the Geological Survey of India* 113: 159-172.

Should be cited inside the text as (Sonakia 1984:59-172)

SCHULZ, M. 2004. Die Regeln mache ich. *Der Spiegel* 34(18 August): 128-131.

Should be cited inside the text as (Schulz 2004:128-131)

WHITE, T. D., B. ASFAW, D. DEGUSTA, H. GILBERT, G. D. RICHARDS, G. SUWA and F. C. HOWELL 2003. Pleistocene Homo sapiens from Middle Awash, Ethiopia. *Nature* 425:742-747.

Should be cited inside the text as (White et al. 2003:742-747)

Citing of the published books:

BEDNARIK, R. G. 2011. *The human condition*. New York: Springer.

Should be cited inside the text as (Bednarik 2011: pp. [pl give page nos])

JAYASWAL, V. 1978. *Palaeohistory of India – a study of the prepared core technique*. New Delhi: Agam Kala Prakashan.

Should be cited inside the text as (Jayswal 1978:pp. [pl give page nos])

Citing of the articles published in the edited books:

SHARMA, H. C. and S. K. ROY 1985. On the discovery of a pebble-tool industry in the Garo Hills, Meghalaya. In V. N. Misra and P. Bellwood (eds), *Recent advances in Indo-Pacific prehistory*, pp. 89-91. New Delhi: Oxford and IBHPublishing.

Should be cited inside the text of the paper as (Sharma and Roy 1985: pp. [pl give page nos])

Citing of the articles published in the proceedings:

AGRAWAL, D. P., B. S. KOTLIA and S. KUSUMGAR 1988. Chronology and significance of the Narmada formations. *Proceedings of the Indian National Science Academy* 54A: 418-24.

Should be cited inside the text of the paper as (Agrawal et al. 1988: 418-424)

ROUGIER H., Ş. MILOTA, R. RODRIGO, M. GHERASE, L. SARCINĂ, O. MOLDOVAN, R. G. CONSTANTIN, C. FRANCISCUS, P. E. ZOLLIKOFER, M. PONCE DE LEÓN and E. TRINKAUS 2007. Peștera cu Oase 2 and the cranial morphology of early modern Europeans. *Proceedings of the National Academy of Sciences of the U.S.A.* 104(4): 1165-1170.

Should be cited inside the text of the paper as (Rougier et al. 2007: 1165-1170)

Citing of the articles published on line:

CHAUHAN, P. R. and R. PATNAIK 2008. The Narmada Basin Palaeoanthropology Project in central India. *Antiquity* 82(317); <http://antiquity.ac.uk/projgall/chauhan/index.html>

Should be cited inside the text of the paper as (Chauhan and Patnaik 2008: pp. [give page nos])

Citing of the unpublished Ph. D. thesis:

PROTSCH VON ZIETEN, R. R. R. 1973. The dating of Upper-Pleistocene Subsaharan fossil hominids and their place in human evolution: with morphological and archaeological implications. Ph.D. thesis, University of California, Los Angeles.

Should be cited inside the text of the paper as (Protsch von Zieten 1973: pp. [pl give page nos])

Notes for authors for publication in Purakala

Purakala, the journal of Rock Art Society of India, was established in July 1990 to fulfil the need of the time which demands the projection and appreciation of Indian treasure of rock art and sharing the views on this subject with the scholars and experts globally. One of the important objectives of this journal is to help in developing new theories and advanced methodology for scientific study which can be refuted/tested by any one at any time, appreciation, documentation, conservation and preservation of *Purakala*, and to encourage debate on such burning issues so that it can contribute for the development of rock art study as a new scientific discipline of knowledge and learning.

With these objectives the *Purakala* invites manuscripts of research papers which should preferably be from 3000 to 6000 words. Longer articles are considered on the basis of merit. The manuscripts should be in the form of soft copy in MS Word file, in simple running text typed in double-space and identify each page by number and the author's surname. Its hard copy should be sent in duplicate by post. The research paper must strictly be comprehensive and compact. Reporting of the original research of significance, the submission of brief reports, conference reports, reviews and bibliographical entries are also published on the basis of merit.

The content of the paper should be outlined by three to five keywords (e. g. 'Petroglyphs - Patination - Style - Raisen') placed above the title. The manuscript should include an abstract of 50 to 100 words, summarising the article. Footnotes ought to be avoided where possible. Table (s) should be in separate excel files with its legend given below it. The bibliography and references in the text should follow the *Purakala* or RAR pattern. If line drawings are included, they must be larger than the intended published size (preferably by a factor of 1.5 to 2) and line thicknesses, stippling, lettering sizes, etc. must be selected accordingly. All photographs, drawings and graphs should also be marked as figures in continuation, not as plates as we publish all of them along with the text itself. Digital photographs must be in TIFF/JPEG format of high resolution (at least 600 dpi) in separate files. Captions

for all illustrative material are required separately given in the end of the paper after the references, together with an indication in the text as to where they, and any tables and schedules, are to be placed. It is recommended that the authors should send an additional pdf file of the paper by putting the figures in the text where they want to have them one after the other along with their captions.

All major articles submitted will be refereed. While final responsibility for the acceptance or rejection rests with the editor, responsibility for opinions expressed or data introduced always rests with the author. Selected manuscripts will be sent to the panel experts for their comments and their reviews may be published in the journal in order to promote scholarly debate, in which case the author need to respond to those comments.

Authors have to strictly observe the code of ethics of Purakala discipline (please see *Purakala* 2(2): 77-80 for more details) while presenting the figures and data in their articles and reports. In simple words any kind of interference with rock art is unethical unless it is extremely needed for scientific dating. Without this much of cooperation the editors will be helpless to consider the submitted paper for publication in *Purakala*.

Concluding remarks

The RASI Protocol described above will help us to observe and collect the genuine data to prepare a comprehensive and compact research paper and to improve the quality of rock art research and its publications. Sometimes, it needs to visit the site several times to fulfil the missing information and update the data. Citation of the references in a proper way as suggested in the Protocol is equally important to produce a quality research paper; every kind of care must be taken in this regard, including that of coma and full stop. The primary research based on the above guidelines lays the foundation for further theme oriented advanced research such as on taphonomy, direct dating, Eurocentrism, etc. In the follow up

research we should mention the brief summary and reference of the previous work. No need to repeat the already published basic information again.

Concrete suggestions are always welcome and can be incorporated after proper discussion time to time.

Acknowledgement

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