

## PREEMPTIVE POSITIONING AND RELATIVE CHRONOLOGY IN ROCK ART

DON LAYLANDER  
ASM AFFILIATES

*The preemption of preferred locations within sites or panels by rock art elements may offer a tool for reconstructing relative chronology, if such preferences can be identified and if their use is documented.*

Establishing chronologies for rock art continues to be an important but difficult challenge. Investigators have discussed a variety of both absolute (calendrical) and relative (sequential) dating approaches (e.g., Dorn 2001; Grant 1981:43-53; Heizer and Baumhoff 1962: 226-233; Keyser 2001; Meighan 1978:7-8; Rowe 2001; Sanger and Meighan 1990:92-94, 173-177; Schaafsma 1980:13-15; Whitley 2000:39-43, 2005:53-70). These methods include:

(1) Chronometric dating methods. Calendrical dates may be derived from AMS radiocarbon measurement of the carbon in pictograph pigments or binders. Other proposals for absolute dating, somewhat more controversial or experimental, include cation-ratio dating and varnish micro-lamination.

(2) Association. Rock art panels may be spatially associated with archaeological deposits or artifacts that are assigned calendrical dates or positions within regional cultural sequences.

(3) Content. The subject matter depicted in rock art may include cultural items, animals, or iconographic elements that are independently known to be peculiar to particular time periods.

(4) Superimposition. One of the most commonly used indicators of relative chronology is the superimposition of newer images on top of older ones.

(5) Natural deterioration. The degrees to which rock art elements have undergone physical and chemical weathering, color fading, and erosion since their creation may provide indications of relative age.

(6) Natural overlays. The relative degree of repatination, particularly by desert varnish on petroglyphs, is commonly recognized as a chronological indicator. Lichen growth and other biological phenomena superimposed on rock art have also been suggested as possible chronological indices.

(7) Limitations on access. Earlier rock art panels may have become inaccessible during later time periods. For instance, this may have occurred due to sedimentary burial, aquatic submersion, erosion of the platforms on which the producers stood or the routes leading to the panels, or collapses in rockshelter ceilings.

(8) Seriation. Rock art elements may be placed within chronological sequences based on a gradual or overlapping succession of changes, for instance in the materials that were used (such as particular pigments), the motifs that were created, and the manners in which particular motifs were depicted.

(9) Ethnographic identification. Authentic ethnographic testimony concerning particular examples of rock art or concerning the motifs that were employed in the art may be an indicator of relatively recent origins.

Another potential relative dating technique that has received little attention is the preemption of preferred surfaces suitable for rock art within sites. This is based on a few simple assumptions: that some surfaces would have been preferred over others for the creation of rock art; that the preferred surfaces would have been the first ones on which rock art would have been created; and that subsequent creations, to the extent that they were not superimposed over existing elements, had to make use of somewhat less desirable surfaces.

For preemptive positioning to be used as a valid indicator of relative chronology, the prehistoric artists' preferences concerning panel positions need to be inferred. Several likely dimensions of preferences may be suggested:

- Potential surfaces' smoothness and uniformity in color and texture would probably have been desirable characteristics.
- A strong contrast in color between the natural rock surfaces and the created images would probably have been preferred.
- Potential surfaces' stability (i.e., minimal subjection to erosion or staining) would have been sought if the art was intended to endure.
- The extent of the area from which the rock art was visible may have been a consideration, although an ambiguous one. If the art was intended for collective viewing, a large area would have been preferred; if its purpose was esoteric, a smaller area of visibility might have been preferred.
- Central positions within prospective panels may have been preferred to peripheral ones.
- The artists' convenience of access to surfaces (for instance, with respect to the surfaces' height above the ground) may have been a consideration, although this is also an ambiguous factor. If efficiency in production was desired, ease of access would have been preferred, but if producing the rock art was intended to be a ritual challenge, more difficult locations might have been the first ones to be used.

Likely preferences may be hypothesized on a priori grounds, but it should also be possible to discover preferences empirically. This could be accomplished by documenting the characteristics of surfaces that were either used for rock art or shunned by the art's creators, as well as by considering the sequences in which positions within panels were used, as those sequences are inferred through other chronological methods, such as the ones enumerated above.

It has been suggested here that the identification of preferred locations for rock art panels and elements is a potential clue to relative rock art chronology. However, the possible benefits of understanding the relationship between locational preferences and chronology also run in the opposite direction. Chronologies that are developed by independent means may help to identify prehistoric preferences, and doing so may afford clues concerning the aims and the agents of rock art production. For example, was the rock art intended to endure, or was the act of its creation its essential *raison d'être*? Was it intended to be viewed by a group, or was it reserved for esoteric use? Was the intent to make its creation as easy and efficient as possible, or was the aim to challenge its creators by imposing difficult working conditions? Were the artists adults, or were they children? The priorities that underlie the selection of panel locations may shed light on issues of cultural interpretation such as these.

A very limited and informal application of the idea of preemptive positioning was attempted recently during a study of La Rumorosa pictograph sites in the Sierra Juárez of northern Baja California (Bendímez and Laylander 2009). The results were inconclusive. To be used effectively, preemptive positioning analysis would require more systematic field recording with respect to the likely dimensions of preference and their correlation with the presence or absence of rock art, and with earlier and later rock art elements. It is recommended that archaeologists and other investigators of prehistoric rock art consider undertaking that task.

## REFERENCES CITED

Bendímez, Julia, and Don Laylander

- 2009 Proposal for a Study of the La Rumorosa Rock Art Style, Northern Baja California. *Proceedings of the Society for California Archaeology* 23.

- Dorn, Ronald I.  
2001 Chronometric Techniques: Engravings. In *Handbook of Rock Art Research*, edited by David S. Whitley, pp. 167-189. AltaMira Press, Walnut Creek, California.
- Grant, Campbell  
1981 *Rock Art of the American Indian*. Outbooks, Golden, Colorado.
- Heizer, Robert F., and Martin A. Baumhoff  
1962 *Prehistoric Rock Art of Nevada and Eastern California*. University of California Press, Berkeley.
- Keyser, James D.  
2001 Relative Dating Methods. In *Handbook of Rock Art Research*, edited by David S. Whitley, pp. 116-138. AltaMira Press, Walnut Creek, California.
- Meighan, Clement W.  
1978 Analysis of Rock Art in Baja California. In *Seven Rock Art Sites in Baja California*, edited by Clement W. Meighan and V. L. Pontoni, p. 1-18. Ballena Press Publications in North American Rock Art No. 2. Socorro, New Mexico.
- Rowe, Marvin W.  
2001 Dating by ASM Radiocarbon Analysis. In *Handbook of Rock Art Research*, edited by David S. Whitley, pp. 139-166. AltaMira Press, Walnut Creek, California.
- Sanger, Kay Kenady, and Clement W. Meighan  
1990 *Discovering Prehistoric Rock Art: A Recording Manual*. Wormwood Press, Calabasas, California.
- Schaafsma, Polly  
1980 *Indian Rock Art of the Southwest*. School of American Research, Santa Fe, New Mexico.
- Whitley, David S.  
2000 *The Art of the Shaman: Rock Art of California*. University of Utah Press, Salt Lake City.  
2005 *An Introduction to Rock Art Research*. Left Coast Press, Walnut Creek, California.