

Early rock art of the Americas as reflected in the Northeast Mexican corridor

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Abstract

Absolute dating of North American rock art has been very limited and often surrounded by controversy, but early dates from South America imply that at least some of the initial migrants into the Americas may have brought rock art traditions with them. If one assumes that their movements proceeded from north to south, they would have to pass through the Mesoamerican geographical corridor and might have left traces in their trajectory.

This paper will examine a sample of the rock art in the Eastern Sierra Madre portion of that corridor in the Northeast Mexican states of Nuevo León and Coahuila. It attempts to identify possible early motifs using relative dating based on superposition and rock wear as initial guides. In particular, the sample will focus on diverse types of configurated dot motifs which appear to be among the oldest present in the region and also have a wide distribution throughout the Americas (and elsewhere).

Although the Asian origin of the first Americans is now well established, the chronology and rapidity of this population expansion as well as the routes taken are still uncertain. Likewise, it is a matter of speculation whether these early migrants brought a tradition of rock art production with them as part of their cultural baggage, or whether all New World rock art traditions are the product of either independent invention or later migrations. Early dates for South American rock art suggest considerable antiquity and the presence of worldwide abstract motifs suggests a possible Old World connection, but the evidence for rock art traditions in the Americas is still too meager and widely scattered and still does not allow a definitive answer.

The global distribution of these elementary geometrical forms can be explained either as the result of psychological or conceptual universals inherent in human nature, as in the entopic explanation, or as evidence of specific cultural transmission of an antecedent tradition which was shared by the initial entrants into the Americas. In this paper our aim is not to evaluate these two approaches, which indeed may not be mutually exclusive, but rather to examine the plausibility of the second alternative by focusing on the earliest manifestations of rock art (whatever their age may be) in a strategic geographical area of the continent.

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In terms of process, early rock art could derive from either a unique diffusion event or successive waves of migrants as proposed some time ago by Terence Greider (1982). A unique diffusion could have occurred very early –even pre-Wisconsin– and spread southward slowly over many millennia within a small dispersed population. On the other hand, if we assume that initial entry occurs only at the end of the Wisconsin glaciation or later, then the spread of people (and diffusion of rock art) must have been very rapid indeed –almost instantaneous– more like a push than a pull.

Greider's underlying premise is that in this post-glacial era "movement of people from Asia to the Americas was nearly continuous" (1982: 182). Although this proposition may be debatable, his three-wave model does generally agree with current historical linguistic reconstructions of Amerindian language families and with what is known about the most recent waves, the Inuit expansion across the High Arctic and the Athabascan entry onto the Northern Great Plains.

His model falters not so much for lack of proof, but rather from the mass of evidence it tries to take in. Selectivity is inevitable, and interpretations are also limited by the evidence available and interpretive fashions at the time he wrote. He follows Robert Heizer, for example, in placing the cup and groove motifs of Great Basin Archaic rock art within his first wave, identifying them as symbols "organized around a metaphorical relationship between organic human processes and the processes of immediately surrounding nature, especially the reproductive processes" (Greider 1982: 182). Whether one agrees with this sexy interpretation of cupules or not, one must still admit that given the evidence presently available, a single unique meaning would hardly account for all the cupule occurrences now known. In current rock art studies, Greider's proposition of wavelike continuity –chronological or geographical– can be neither conclusively confirmed, nor categorically refuted, and serves mainly to underline the scope of the problem.

Early rock art in the Northeast Mexican Corridor

If we assume that some incoming groups did bring rock art with them, whenever or however they arrived, they would eventually have had to traverse the Mesoamerican corridor as they moved southward. This area begins roughly around the modern US/Mexican border zone and narrows rapidly in central and southern Mexico into the Central American isthmian connection. Its northern access is dominated by a natural barrier: the arid Mexican portion of the North American Great Basin, an environmentally contiguous region extending from Oregon (USA) to Zacatecas (Mexico) in the latitudes of the global desert belt associated with the Northern Hemisphere Intertropical Convergence climatic zone.

Three natural transit routes traverse the "Arid-America" belt, a Pacific coastal corridor oriented to the availability of marine resources (Erlandson & Moss 1996; Bryan & Gruhn 2006); an interior route along the eastern flank of the Sierra Madre Occidental to central Mexico, and a third Northeast Mexican corridor along the Gulf coastal plain adjacent to the Sierra Madre Oriental. In this study we focus only on the latter route, but one can easily see that it is a particularly strategic one. Entering groups from the north could access it from the Great Basin following the Rio Grande/Rio Bravo drainage and all movements from Eastern North America or the Great Plains would be channelized into it

by the Mississippi river drainage system and the geographical configuration of the Gulf coast. Orographic rainfall along the front range of the Sierra Madre, which rises about 2000m from the coastal plain, also provides more abundant water sources in this corridor and makes it hardly a barrier at all for prehistoric migration in either direction.

Well over half of all the documented rock art sites known in Mexico are located in the Northern Mexican border states (Viramontes *et al.* 2008: Tabl. 1). Within the northeastern corridor, a dense cluster of over 600 sites, including some of considerable size and extension, has been identified in the states of Nuevo León and Coahuila along with a much smaller number on the coastal plain of Tamaulipas, providing a broad sample of rock art spanning from Paleoindian to historic times.

Early Paleoindian/Archaic occupation is confirmed at several sites of the Nuevo León including La Calsada dated to 10,640 BP (Nance 1992) and Cueva Ahumada at 6000 BP (Corona 2001) in the Sierra Madre canyons, and Boca de Potrerillos (7670-7880 BP) in the Chihuahuan Desert fringe (Turpin *et al.* 1995). At present, the earliest dated remains come from the La Morita rock shelter, near Villaldama (Nuevo León), radiocarbon dated to about 12,000 BP (Anonymous 2007). Except for San Isidro, on the Gulf Coastal plain east of Monterrey (Epstein 1969), rock art is present at all of these early sites, although it was not always noted by the archaeologists who first excavated there, nor was it necessarily made by the initial inhabitants.

Surface water availability was always a prime determinant of human occupation in the Mexican North, as Walter Taylor (1964) recognized many decades ago, so populations (and rock art production) in all ages concentrated at the same places and around the same natural features. Taylor's reconstruction of North Mexican prehistory pictured a timeless culture unchanged since the earliest human occupation, but the rock art documented so far suggests a more complex cultural sequence. Rock art production was evidently episodic and discontinuous, probably in relation to cyclical climatic variations which produced significant environmental changes (Murray 2000). During the most arid episodes, surface water sources would be severely limited and population density and subsistence resources substantially reduced. The region may even have been temporarily abandoned or left with only a "skeleton" population.

In contrast, during wetter periods, such as the one at the end of the "Little Ice Age" when the Spanish first arrived, extensive playa lakes and associated marshy wetlands appeared on the adjoining Mexican Altiplano. Deserts became grasslands, and now-remnant forests extended downward over the mountain slopes. Seasonal movement through the intermontane canyons of the Sierra Madre Oriental would have been facilitated by permanent, rather than intermittent, runoff and provided a much broader spectrum of subsistence resources. These humid intervals could have been relatively brief interludes within a predominantly arid regime like the one today, but their traces are still visible on the landscape at places such as Boca de Potrerillos, where an extensive marshy pond area extending upstream behind the canyon mouth is still clearly visible (Turpin *et al.* 1995). Most importantly, these conditions probably approximate more closely the landscape which would have confronted any early entering group during the final meltdown stage of the Wisconsin glaciation, or any other warming episode within the glacial time span (Johnson *et al.* 2006) and thereby provide a vital clue to where the earliest rock art might be found.

The rock art sites in the area vary from isolated figures or a single carved monolith to extensive concentrations like the estimated 4000 petroglyphs at Boca de Potrerillos spread over a 6km² area. The larger sites are all located at key points in the inter-montane drainages, such as natural springs, rapids, or waterfalls or along the rims of the playa lake basins. These locations obviously attracted hunter-gatherers of all ages and were occupied more frequently and for longer periods. Their abundant rock art confirms their strategic location within the overall landscape, and all of these sites show re-carving and superposition in their core zones which confirm their long-term episodic use.

Presa de La Mula (Nuevo León) (Fig. 1) is a good example of the playa lake type of site. It lies beside an ample enclosed basin with minimal natural outflow. Although its present drainage has been modified by a modern earthen check dam, it still turns into a marshy wetland during rainy episodes. A densely carved palimpsest of petroglyphs on both bedrock and exposed rock faces at edge of this wetland; are concentrated especially along the rim of the rocky crest overlooking what would have been its natural outlet (now blocked by the earthen dam) –a key point for observing daily and seasonal game movement.



Fig. 1. Panorama of Presa de La Mula (Nuevo León).

Superposition of motifs and rock fracturing is evident on many panels, indicating different relative ages. The earliest figures are mainly linear abstract geometrical motifs, while the later ones often represent stylized deer antlers or hoof prints, hafted scrapers, atlatls and other lithic tools often carved on a very large scale and in a particular incised relief style. These hunting motifs often mark actively-used hunting locations, as field experiments (Murray & Lazcano 2001) confirmed, and from the rim at La Mula, hunters armed with atlatls would be well in range for any animal passing below.

Just below the point where the hunters would have stood on the rocky crest, a panel (Fig. 2) with extensive over-carving shows schematic atlatls and high-relief scraper blades alongside a complex 24 cell rectangular grid containing 207 tally marks that is superimposed on all earlier motifs –and thus is one of the latest elements of the panel. This tally correlates systematically with seven lunar synodic months, including special markers for the 148 and 177 day lunar eclipse intervals (also recorded in the Dresden codex) (Murray 1982, 1986). Its total sum (207) is a reasonable approximation of the gestation period of the female whitetail deer (205-212 days), a critical piece of information for any deer hunter. Thus, the petroglyph employs lunar tally counting to mark the reproductive cycle of a key prey species, a biological cycle which is itself determined by the annual variation of sunlight. The deer is also an animal of great symbolic significance in many Mesoamerican cultures (Murray 2008).



Fig 2. Petroglyphic tally counting seven lunar synodic months (Presa de La Mula, Nuevo León).

Configured dots: an archaic motif

In this paper, we focus instead on the configured dot motifs which evidently antecede the tally count. They include horizontal dot rows (on the same panel to the left of the lunar tally count) which are superimposed by an elaborate hafted scraper in incised relief, as well as a vertical “drip line” which is not rigorously symmetrical, and has

been accommodated within the tally rows. Its total number (57 or 58) is a reasonably good approximation of two lunar synodic months. Elsewhere, I have argued that these two motifs –the dot and the tally– are sometimes used as unit markers within a Northeast Mexican petroglyphic counting tradition which developed among early hunter/gatherers and may also represent an ancestral stage in the development of Mesoamerican numeration (Murray 1996).

Of the two components, the configured dots appear to be the older and more ubiquitous motif. They are found at nearly all the petroglyph sites in the northeast Mexican corridor, and superposition, rock wear and repatination indicate that some of them are among the oldest carvings. At some intermontane sites, such as Icamole canyon (Murray 1985) and Boca de Potrerillos, they occur in clusters at specific locations which could have been used for sky watching.

At Boca de Potrerillos about 40km to the east of Presa de La Mula, the entire site is naturally oriented to the cardinal directions and its eastern horizon was apparently used (among other things) as a solar horizon calendar (Murray 2004, 2006). Dot configurations are especially abundant at this site. At least one cluster (Fig. 3) appears to be an observational record of four lunar synodic intervals, an especially interesting interval because its formula: $118 \text{ days} = 4 \text{ months}$ would keep accurate lunar time to the day for almost two years (Murray 2009).



Fig 3. Panel with four dot configurations counting lunar synodic intervals which sum to four months (Boca de Potrerillos, Nuevo León).

Adjoining this panel is a unique dot configuration (Fig. 4) dubbed the “Jar Count” which records the same 207 day gestation cycle as the La Mula count, albeit in a very different numerical and configurational pattern and using dots rather than tally marks.



Fig 4. Petroglyphic dot configuration counting seven lunar synodic months (Boca de Potrerillos, Nuevo León).

These examples can be identified as counting symbols because the units of time they record correspond to visible lunar synodic cycles and their configurational pattern can be ordered into discrete numerical units. The most common dot configurations are ordered into regular vertical columns or horizontal rows, but not all dot configurations are symmetrically displayed, nor do all of them count lunar synodic periods. Petroglyphic counting appears to be a specialized use of configured dots, a specific tradition within a much broader one.



Fig 5. Circular dot configuration, Cerro La Bola, near Paredon (Coahuila).



Fig 6. Large abraded dot configuration showing heavy repatination, km. 43 north of Saltillo (Coahuila).

A wide variety of configurational patterns are present, some of which (like the Jar Count) are very elaborate and indeed unique. They include cross-like configurations, splayed fan shapes, circular forms akin to the Mesoamerican “pecked cross” motif (Fig. 5), and long undulating lines which in one case extends continuously along a side branch of Icamole canyon for over a kilometer (del Razo 2008). Some of these configurations could be counts of other celestial intervals or derive from other uses of counting totally unrelated to sky-watching, but in other instances, a counting explanation can be ruled out entirely. Numerical order is only one of several possible properties of dot configurations. Each type of configuration could refer to a different context or meaning and certainly no single explanation could account for all of them.

Indeed, the whole idea of a unitary category for “dots” dissolves when the distinctive forms and shapes of the dots are observed more closely. Their morphological range extends from large cupule-sized dots (Fig. 6), often smoothly abraded, through the more typical pecked dots produced by repeated blows of a hammer stone, to very lightly pecked or scratched dot motifs made almost like notations on a scratch pad. Thus, any classificatory scheme which simply groups all configured dot motifs together in a single category fails to identify an important feature which plainly differentiates them on the rock surface.



Fig 7. Dot configuration accommodated within a linear figure, km. 43 north of Saltillo (Coahuila).

While the absolute age of the Northeast Mexican dot configurations is still undetermined, the relative antiquity of at least some examples is confirmed by their central location at each site and their consistent superimposition by later rock art images associated with the atlatl hunting tradition previously mentioned. The superpositions set a minimum age for the dot configurations in the Late Archaic period, but the degree of rock wear and intense repatination of some examples suggests considerably greater age for at least some of them. Other examples (Fig. 7) also show elaborate recarving which altered or erased portions of the dot configuration in order to incorporate it into other geometrical shapes.

The semiotic range of the dot symbol evidently extends well beyond any single meaning or context. A full examination of its cognitive and iconographic range requires a much wider geographical and archaeological comparison than the present study, but it could reveal other patterns and uses besides counting, as well as a more precise idea of the antiquity of this motif in New World rock art. With or without direct dating, rock wear and repatination identify the dot configurations and other geometrical motifs as one of the earliest manifestations of rock art in this strategic area of the Northeast Mexican corridor.

Dot configurations in the Americas

Although a systematic survey is well beyond the scope of this paper, a few examples provide both chronological and iconographic comparisons which demonstrate their wider distribution and possible antiquity.

At the sites around Long Lake, Oregon (USA), for example, Cannon & Ricks (2007) identify the earliest rock art as Great Basin Carved Abstract (GBCA) style whose iconography prominently features straight lines, sinuous lines and dots including many linear and columnar configurations similar to those in Northeast Mexico. Its relative age is indicated by panels buried below Mt. Mazama ash (6800 BP) as well as extensive repatination of both the petroglyphs and associated grinding stones. Initial occupation of this area is now dated to around 13,200 BP, so the GBCA style petroglyphs could have been made by an initial wave of post-glacial colonists. In all cases, the dot motifs are superimposed by later Great Basin styles, indicating their relative antiquity.

Many other early stylistic traditions throughout the US portion of the North American Great Basin include dot motifs of various types (Schaafsma 1980), some of which could relate to sky-watching and counting. Just north of the border at Lewis Canyon, Texas (Turpin 2005), near the confluence of the Pecos and the Rio Grande rivers, the dot configurations are associated with the same hunting motifs represented at the northeast Mexican sites and may be direct evidence of both chronological and geographical links to the Great Basin through the Rio Bravo/Rio Grande drainage.

In central and southern Mexico, the petroglyphic dot motif emerges as a full-blown component of Mesoamerican numeracy at sites like Tepeapulco in the Valley of Mexico and the pecked cross-in-circle motif originally identified at Teotihuacan, but whose known distribution now extends from Copan (Honduras) to Alta Vista (Durango). Other quite different looking dot configurations (and tally marks) overlook the sunset on Acapulco Bay (Manzanilla & Talavera 2008).

Looking further to South America, configured dot motifs figure prominently in the early rock art traditions from both eastern Brazil and the Argentine Patagonian region. Some of them, particularly a cluster of sites on the coastal islands near Florianopolis, Brazil (Lucas 1996), display the same kind of symmetrical columnar configurations found in northeast Mexico.

The North American ethnographic and archaeological record also identifies a portable artifact which could have transported a dot counting tradition from the Old World to the New without leaving a rock art trail. Calendar sticks with tallies and dot configurations carved on wood or animal bone are well documented among many Amerindian cultures

(Marschack 1989; Murray 1984). Although less durable than the permanent rock art record, they are a more mobile way to keep count of the days over longer periods. Both could have served the same purpose because for all hunters, the gestation period of their main prey animals would be of critical importance, perhaps even a question of long-term survival. Perhaps Grieder was right in thinking that the rock art of the “first wave” was related to the reproductive processes, the only difference being that it may refer to the cycles of animal rather than human reproduction.

Summary

Nearly all the earliest rock art in the Northeast Mexican corridor appears to fit comfortably into a worldwide tradition of basic geometrical abstract forms already identifiable in the Paleolithic. All later hunting (and some geometrical) motifs are clearly superimposed on them and may represent a considerable separation in time. Rock art sites are found at places with water access and high visibility of the surrounding landscape, all strategic characteristics for successful hunting.

Dot configurations are a prominent element in this early geometrical tradition and appear in a wide gamut of configurational patterns. Some of them are evidently used as counting symbols related to later Mesoamerican dot counting and document the observation of the lunar synodic cycle, but others are not even grouped into ordered units, and could not be counts. Configured dot patterns evidently have more than one meaning or context. A more complete view of their semiotic range and relative antiquity requires a much wider comparison, but offers a viable entry point into the question of the early diffusion of rock art into and through the Americas.

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Symposium **Amériques**

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Quote this article

- MURRAY W.B. 2012. — Early rock art of the Americas as reflected in the Northeast Mexican corridor. *In*: CLOTTE J. (dir.), *L'art pléistocène dans le monde / Pleistocene art of the world / Arte pleistoceno en el mundo*, Actes du Congrès IFRAO, Tarascon-sur-Ariège, septembre 2010, Symposium « Art pléistocène dans les Amériques ». N° spécial de *Préhistoire, Art et Sociétés*, *Bulletin de la Société Préhistorique Ariège-Pyrénées*, LXV-LXVI, 2010-2011, CD: p. 643-654.