

# DISTRIBUTION AS A FUNCTIONAL FACTOR OF ROCK ALIGNMENTS IN THE MOJAVE DESERT

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## ABSTRACT

This paper suggests that the distribution, setting, content, and form of early rock alignments in the Mojave Desert are directly related to the function of these features. Each of these factors will be described and discussed in turn, leading to an interpretive synthesis. Why a reliable model cannot be developed for locating rock alignment sites is also suggested.

I am pleased to have been invited to present a paper in this session honoring Dee Simpson. I have admired her life-long devotion to archaeology and the tenacity with which she works toward goal completions. I am also indebted to her, along with Arda Haenzel, her co-worker at the San Bernardino County Museum, for interesting me in earthen art back in 1975 when few others thought that path worth treading. Since then, I have worked to advance the study of geoglyphs and rock alignments, and the paper I am presenting today is drawn around a small sector of that study: distribution as a functional factor of rock alignments in the Mojave Desert.

First, clarifying a couple of concepts is in order. Looking at form and function in the large sense—the Platonic sense—form is idea; function is simply putting that form to work. In other words, function follows form, not the other way round. Ben Shahn helped codify the current usage when he wrote that form is the shape of content (Shahn 1972), and content actualizes the form through function. Earthen art, itself, is viewed as an arranged functional design of soil or rock. Geoglyphs are prepared when a person scrapes or brushes away upper surface materials, exposing the lighter colored under-soil. This exposure creates a negative impression. On the other hand, rock alignments create a positive impression when a person arranges cobbles or boulders into a linear design.

Within these concepts, the form behind most earthen art is spiritualism—religious in some of these cases—and geoglyphs and rock alignments become the content, activating or actualizing the form through functional ceremonies or rituals. Most earthen art designs, then, are seen as icons, part of the spiritual structure of primordial life and culture that is activated ritually. Also functional, but not necessarily spiritual, other earthen designs recorded in the Mojave Desert include trails, trail markers, cairns (when stockpiles for construction), house rings, wind or sun screens, hunting blinds, and territorial markers.

The majority of earthen art in the Mojave Desert is of the rock alignment type. A belt about a meter wide surrounds such icons indicating that considerable non-scuffing movement had taken place at the sites, activating their function. The concentration of alignments extends southward to the Amboy area but diminishes markedly beyond. Within this 150-mile macrozone several groupings of alignments occur, though it is

noted also that a few isolated sites are uniquely present, which is another concern of research. Such sites, for example, might have been in the process of being developed into larger and more complex sites but were never completed, as possibly that at Lavic Lake (MacDonald 1993). Also, in complex sites containing numerous designs it is not clear whether the diverse elements are even temporally related, or if each design exists as an entity from a different era. However, this type of earthen art appears to have been the earliest, and its association with the Lake Hill Pleistocene site (Davis 1978) focuses the Panamint Valley as perhaps the point of origin for rock alignments. The antiquity of rock alignments is further indicated with the 9000+YBP alignment Claude Warren has dated from rarely found carbonized material associated with the Lake Mojave feature. Until the AMS  $C^{14}$  process can be brought into a research design dating the alignments themselves, such questions concerning temporal placement will remain largely unanswered. But, for the first time, the prospects for fusing the AMS  $C^{14}$  dating process with rock alignment research is bright. Recently, Dr. Ron Dorn, who pioneered this technique and applied it to geoglyphs and rock art, has dated a Nevada rock alignment. While he is treating this achievement with caution, he is pushing ahead with further experiments (Dorn et al. 1995).

## The World of Alignments

As presently known, there are three general areas in the world where rock alignments have been recorded. More than 150 are widely scattered in Australia; over 40 ("petroforms") have been identified in southeastern Manitoba, Canada, in addition to the several Medicine Wheels of the upper Plains; and in the diverse area of southern Nevada, southeastern California, the lower Gila River of Arizona, and the Sierra Pintacate area of Sonora, Mexico. The focus of this paper is on the most northerly sector of the Sonoran Desert, the Mojave Desert, in which 71 rock alignments have so far been identified and recorded. This number is in contrast to the 13 geoglyphs noted in that area. In further review, northeastern Sonora has 22 recorded alignments and 7 geoglyphs. The Gila River sector has 27 known alignments and 19 geoglyphs. In the Colorado Desert the ratio is reversed with only 7 alignments and 39 geo-

glyphs. Along the Colorado River 15 alignments have been discovered, but there are 101 geoglyphs (Casey 1992). Totals include, then, 142 alignments and 179 geoglyphs.

Table 1. Areal Distribution of Earthen Art.

Area	Alignments	Geoglyphs
North Mojave Desert	71	13
South Mojave/Colorado Desert	22	140
Gila River	27	19
Sonora	22	7
Totals	142	179

The available desert surface seems the most dominant reason why alignments are in the majority of earthen art features in one area, and geoglyphs in another. Alignments mostly occur where cobbles and boulders are plentiful, and geoglyphs occur on open stretches of desert pavement. This indicates that similar ideas motivated the construction of these functional features, and that they culturally migrated southward, changing content as they moved through space as well as time. For example, in the inventory of Mojave Desert alignments, 41 single or double long curved lines have been recorded while only 20 occurred in the rest of the desert areas. Six amorphous designs showed in the Mojave but none in the other areas. One ovoid shape was seen in the north and 2 elsewhere. 21 large compartmented figures occur in the Mojave and two in the south. Two sets of aligned cairns were recorded in the Mojave and two in the south. On the other hand, alignment designs that occur in the south but not in the Mojave include anthropomorphs, straight lines (probably territory markers), circles, and oval compartmented figures.

Table 2. Comparative Distribution of Designs.

	North Mojave Desert	Elsewhere
Curved lines	41	20
Amorphous	6	0
Ovoid	1	2
Compartmented	21	2
Aligned cairns	2	2
Totals	71	26

But, the greatest development in earthen art from north to south and from Early Holocene into the Protohistoric Period was in the emergence and eventual dominance of geoglyphs. Ron Dorn has been working with Imperial Valley College Desert Museum in dating widely spaced geoglyphs using the still experimental AMS C<sup>14</sup> process (von Werlhof 1994; Dorn et al. 1995). Progress and prospect indicate that while geoglyphs had an early introduction into the world of earthen art (Denning Spring San Dieguito site), their construction mushroomed only with the migration of the Yuman peoples into the Lower Colorado River Basin and the Colorado Desert. The Mojave Desert had long since completed its transformation

from the moister and cooler environment of the Holocene. In the desertification process, the former lake country retreated, and earthen art lost its *raison d'être* in the sandy and alkali wastes in the Mojave Desert.

### The Mojave Desert in Pleistocene and Holocene Times

The Mojave Desert is the lower southwestern portion of the Great Basin and northwestern portion of the Sonoran Desert. Though there are no permanent riverine courses flowing within the desert today, in the Pleistocene the Owens River, the Mojave River and the Amargosa River converged at the mouth of Death Valley, all contributing to two enormous lacustrine systems. The north system included Owens Lake, Searles Lake, Panamint Lake, Lake Manly, and Greenwater Lake. The southern counterpart was comprised of Harper Lake, Superior Lake, Coyote Lake, Cronese Lakes, possibly Troy Lake, Lake Mojave (Soda Lake/Silver Lake) and Silurian Lake.

Melting ice and snow from the Sierra, Inyo, San Gabriel, San Bernardino and Funeral mountain ranges assured the continuance of the lake systems long after the climate shifted from Pleistocene to Holocene times, 12,000 YBP. But the eventual waning of the lacustrine-marsh biome put the Paleoindian economy and culture in harm's way. The bands had become accustomed to seasons abundant with animal and vegetal resources (Davis 1974, 1975, 1978, 1981; Fortsch 1972; Jennings 1974) which seemingly were now under threat from the very spiritual forces that had created the former Edenic scene. This is the sort of crisis to which shamans were called (Eliade 1966, 1974; Bean and Blackburn 1976).

It is likely that every human society has had about the same proportion of geniuses to idiots. Though most societies have encouraged their geniuses to enter careers that influence social systems, the more modern have had changes in mind while the more ancient sought ways to preserve what traditions had put into place. Primary amongst them was the shaman whose role was in part to maintain social/natural balances through spiritual powers (Bean and Blackburn 1976). Though E. Adamson Hoebel placed the shaman in "the lunatic fringe of society" (Hoebel 1958) and hence would be enlisted from the idiot rather than the genius level of a band, most anthropologists find the shaman's activities contributory, even if strange, to the well-being of the group. It is in this format that the shaman, in concert with the elders, would have kept alive through oral traditions the society's collective memory of better times before climatic changes began warping the group's livelihood. Reenacting creation and rejuvenating the society apparently became ritualized through dances around icons the shamans dreamed and placed conspicuously on the earthen surface, reflecting an enormous effort to induce changes in a dying ecosystem.

### Distribution of Earthen Art in the Mojave Desert

It is probable that the choosing of locations for alignments was as important as the alignments, themselves. Early clues came from Australia and the Upper Plains from where studies showed that spiritual features were placed on grounds

already deemed sacred (Elkin 1950; Berndt and Berndt 1964). Lower Colorado River and Colorado Desert Yuman informants identified as sacred some ground on which earthen art forms were placed (Johnson 1982; Cachora 1994; Millard 1990; Lucas 1989), though generally contemporary Indians are reluctant to identify such spiritual power points (Deutschke 1982).

Tribal reasons for selecting or recognizing certain grounds as sacred go well outside environmental considerations. As Persis Clarkson has pointed out through her studies of Andean and Southwestern earthen art, environment alone cannot explain the presence or location of specific earthen art sites (Clarkson 1994). Though a few generalizations about earthen art fields are usually made, such as rock alignments occur along rocky relic watercourses as well as the east slopes of ancient lacustrine shorelines, and geoglyphs occur on paved planar surfaces near contemporary flowing streams, we are reminded that, "All generalizations are false, including the generalization that all generalizations are false."

Indeed, most earthen art sites do occur within the narrow lines suggested above, but a significant number of them do not. Even more importantly, if one were to search for earthen art sites using the environmental baggage given above, the surveyor could cover thousands of square miles and have disappointment as the only reward. Sample areas might include Searles Lake, Harpers Lake, and Garlock Dry Lake (amongst hundreds of other likely prospects), all of which fit well into the formula, but none have yielded archaeological discoveries

of earthen art. Harry Casey yielded archaeological discoveries of earthen art. Harry Casey and I have spent approximately 100 flying hours on such searches and by himself Harry has spent about 600 more. Though numerous sites have been added to the record in this manner, the ratio of them to miles flown is indeed small, but to have searched this area on foot would have taken a life's career.

The clustering of earthen art sites, as at Panamint Valley, Wildrose Canyon, Death Valley, Eureka Valley, Troy Lake, Bristol Mountains, etc., is the normal distribution pattern. Coupled to this is a patterning of elevations in proximity to playa beachlines. Though some clusters, as at Crucero and Broadwell Mesa, are several miles from the highwater mark of former lakes, they are placed along deeply eroded main tributaries flowing into the lower basins. Defying environmental formula, isolated rock alignments do occur in the Mojave Desert, and in Death Valley three are on the west upper slope of former Lake Manly.

The clustering of ceremonial rock alignment sites indicates that the distribution, itself, shared in the process of actualizing the spiritual function of these icons. That the Mojave Desert alignments were closely identified with the diminishing biome of the Early Holocene, and the tamped zone surrounding the alignments strongly suggests concerted ritual activity, leads to the conclusion that the alignments were placed on sacred ground for actualizing collective spiritual power.

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