

Barrier Canyon Style Petroglyphs¹

Steven J. Manning

INTRODUCTION

When the title of this paper was announced, I noticed that there were some whispered comments of skepticism. This suggests that most of you have never heard of Barrier Canyon Style *Petroglyphs*. Although, you may not have heard of them, I am most certain that many of you have seen them, but not recognized them. The purpose of this paper is to demonstrate that Barrier Canyon Style Petroglyphs do indeed exist and to discuss their importance.

The discovery of Barrier Canyon Style petroglyphs would be significant. The existence of petroglyphs of this style would provide us an opportunity to investigate dating from a new perspective. These petroglyphs likely would have a degree of patination, something that pictographs lack. Patination levels on Barrier Canyon Style petroglyphs have the potential to provide significant new information concerning the date that they were constructed. For example, the level of patination on Barrier Canyon Style petroglyphs could be compared with those on Glen Canyon Style 5 petroglyphs, which are most certainly Archaic (Turner 1963, 1971). If Barrier Canyon Style images are Archaic then patination levels would have to be consistent with Glen Canyon Style 5 petroglyphs (which mostly are completely repatinated). If the Barrier Canyon Style petroglyphs are consistently lighter in color, they would be younger than Glen Canyon Style 5,

and if they are darker in color, they would be older.

It is important to note that the determination that the Barrier Canyon Style is entirely Archaic is without empirical evidence (such as radiocarbon dating). I would also like to add that I find problems with the way Barrier Canyon Style has been defined. It appears to me that the Barrier Canyon Style is a compilation of several very different types, or “styles”, of images—perhaps from different time periods and maybe even from different cultures. I suspect these different types were grouped together because there were not sufficient cultures available to associate each type (or style) with a different culture—which seems to be the principal goal of style analysis (Schapiro 1953).

If Barrier Canyon Style petroglyphs can provide more secure data on age differences, it may also be possible to define divisions of the Barrier Canyon Style based on these age differences, and not just on differences of figure type and composition—which are the differences that I have noted. Differences in age would certainly be expected to exist over the hundreds, perhaps thousands of years that Barrier Canyon Style existed, that is, if it truly is Archaic. It would likely have existed until something replaced it, which would just about have to be images made by the Fremont, or the Anasazi in southern Utah. If age differences do exist, it may be possible to determine if Barrier

Canyon Style changed over time and what those changes were.

BACKGROUND

The Barrier Canyon Style was first defined by Schaafsma (1970). She stated, “Within the San Rafael Fremont region there are a group of panels or rock *paintings* in which life-sized anthropomorphic forms are dominant, but which are stylistically distinct from the Fremont tradition...” (Schaafsma 1970:65, italics added). She also named the style, “The name Barrier Canyon Style has been chosen as an overall designation for these *paintings* after the tributary of the Green on which the largest number of the striking panels had been recorded.” (Schaafsma 1970:68, Italics added). Schaafsma’s definition and analysis indicated that the Barrier Canyon Style consisted only of paintings, i.e., pictographs.

EXAMPLES OF BARRIER CANYON STYLE PETROGLYPHS

Perhaps the simplest and most convincing way to demonstrate the existence of Barrier Canyon Style petroglyphs is to show you examples of Barrier Canyon Style pictographs and then compare them with Barrier Canyon Style petroglyphs. The following, then, are five examples demonstrating the existence of Barrier Canyon Style petroglyphs.

Example One

The well-known Barrier Canyon Style site in Buckhorn Wash near Castle Dale, Utah (Schaafsma 1970: her Figure 69) contains what appear to be snakes with

extraordinary and phantasmagoric characteristics, see Figure 1. The three snakes shown in Figure 1 have either horns or arms, or both. The largest of these has a mouth that is rectangular—more like the shape seen on mountain sheep than snakes. The three snakes have associated with them an apparent liquid substance. This liquid appears to come out of their mouths, and it falls downwards, and it perhaps also falls or drips from their hands, as easily seen in the largest image. This substance seems to have the characteristics of being fluid, because it is depicted as streams of dotted lines. This fluid might represent venom, saliva, water, or even blood.

Similar images have recently been discovered in the San Rafael Reef, roughly 35 miles southeast of the Buckhorn Wash panel (Figure 2). I would like to know if any of you have seen this panel. If you have, would you please raise your hand? (*No hands were raised.*) I think you will find this panel most interesting. The figures here are also painted. On the left side of the panel (shown here as Figure 2) there are two snakes. Both have arms, and one has horns. The larger snake (in the upper right center of the photograph) appears again to have a fluid substance dripping from its hands and also perhaps from its mouth. (Another snake with hands is farther to the right and is not shown in the photograph.)

Both of these panels are unquestionably Barrier Canyon Style. Both panels contain very distinctive and unparalleled images of snakes. (I should also point out that the snakes in both panels are about the same size.) The remarkable peculiarity or uniqueness of these images is very significant. They are not the de-

piction of a creature found in nature (horned snakes), so they are, therefore, the product of a cultures or a peoples unique imaginative ideologies. This uniqueness provides a very specific indicator for defining the particular style or type of rock art in which they occur, as well as relating them to the specific people who created them. Therefore, these images presence in Barrier Canyon Style is a reasonably explicit indicator of the existence of that style or type.

A *petroglyph* of a snake with an analogous form and context is shown in Figure 3. This image is located next to a large petroglyph panel at the junction of Muddy Creek and what Schaafsma calls Rochester Creek (Schaafsma 1970: Plate 29 and Figure 66; see also Castleton 1978:117-121; Smith 1980:108-109; and Gunnerson 1969:figure 25b). The image of the snake has the same extraordinary outstretched arms as the pictographs, and something is coming out of its open mouth.

Notice also that the largest and most detailed snake in the painting in Figure 2 is positioned facing a large anthropomorph. In the petroglyph panel, the snake is also positioned facing a large anthropomorph. Since the petroglyph has the same unique characteristics, form, size, and situation as the pictographs, it must also be defined as Barrier Canyon Style. (The other images in Figure 3 also have parallels in Barrier Canyon Style panels, but they will not be discussed here because of time limitations.)

Example Two

The Great Gallery in Barrier Canyon (Horseshoe Canyon) contains many images that are “life sized”, or nearly so. A

few of them are illustrated in Figure 4. These figures have been described as “ghost like”, i.e., they have no arm or legs, and the bottoms of the figures are generally rounded. These figures are Barrier Canyon Style by definition (Schaafsma 1970:74-77). The images with this type of body seem to have a wide distribution within the range of the Barrier Canyon Style.

A petroglyph with the same body form, i.e., possessing a “ghost-like” lack of arms and legs, similar body decoration, and the same large size as the images in the Great Gallery is found about 35 miles to the southwest of the Great Gallery, see Figure 5. This petroglyph also has the same shape of head as is found on many Barrier Canyon Style pictographs. Since this petroglyph is analogous in form to the pictographs, it must, therefore, also be Barrier Canyon Style.

Example Three

In the Great Gallery there is a large rectangular figure that has a large cross (X) on its chest, see Figure 6.

A petroglyph much the same as the pictograph in Figure 6 is located about 35 miles to the southwest of the Great Gallery (Figure 7). There are also other similar anthropomorphs in the panel, but this is the best figure. It has the same rectangular body, the same absence of arms and legs, and the same cross across the chest as the pictograph. Both figures also have a horizontal line across the torso. (Since this line is about in the middle of the torso, it may represent a belt.) Both figures also have decorations below the horizontal line. Since both figures share the same attributes, both pictograph and petroglyph must be Barrier Canyon Style.

Example Four

The next example is located in Canyonlands National Park on the west side of the Colorado River in an area known as the Maze. Schaafsma refers to this Barrier Canyon Style pictograph panel as the “Bird Site” (1970:77, Figure 76). To the left and a little above the main group of painted figures there is a smaller group that contains an abstract, fierce, and strange-appearing quadruped, see Figure 8. The quadruped is very elongated, has an open mouth, and presumably a tongue, represented by a thin line, coming out of its mouth. (The line is similar to that shown in Figure 3 in the snake’s mouth.) This line bends downward towards the end. Notice also that this quadruped is situated similarly to the snakes shown in Figures 1-3, i.e., it is in a nearly upright position facing a large anthropomorph. It also has its arms outstretched toward an anthropomorph.

There are also several other fierce-appearing quadrupeds at the site, but they do not show up well in photographs, see Figure 8 inset. The particular quadruped shown in the inset has a tail that distinctly bends up over the back of the animal, like the one in the larger photograph. Both of these quadrupeds have short pointy ears. These images are unquestionably part of and contemporaneous with the rest of the panel and are Barrier Canyon Style.

The main panel at the Rochester Creek site mentioned above contains the same abstract, fierce, and strange appearing quadrupeds (Schaafsma 1970: Figure 66), see Figure 9. They have short pointy ears, elongated bodies, and sometimes-short stubby legs coming out at a forward angle from their bodies. They also have

lines/tongues coming out from their mouths that curve down at the ends, as do the pictographs. These unique, abstract and peculiar quadrupeds, like the snakes with outstretched arms, have been found only within a unique complex of images. The quadrupeds with shared characteristics in both pictograph and petroglyph panels indicate that they are both Barrier Canyon Style.

It is interesting that Schaafsma noted, when describing the panel at Rochester Creek, that “Many of the anthropomorphs bear a resemblance to Barrier Canyon Style figures in head and body form, in the presence of eyes which are round or ‘bugged,’ and in their long, curved antenna” (Schaafsma 1971:61). Despite this conclusion, Schaafsma did not assign these anthropomorphic images to the Barrier Canyon Style, nor compare the zoomorphs to the site in the Maze. There is more here, however, than a mere resemblance. The figures mentioned by Schaafsma also exist as pictographs. The parallels argue that this petroglyph panel is principally Barrier Canyon Style.

It must be noted that the images in the panel are not all contemporaneous. Images were added to the panel at different times and likely by different cultures. Therefore, not all the figures in this panel are Barrier Canyon Style. Differences are obvious when the levels of patination are examined carefully.

Example Five

In a remote area located east of Ferron, Utah there is a panel of Barrier Canyon Style figures that have especially long tapering bodies, see Figure 10.

Note that these images have legs and “feet”. Other examples of these images are found scattered in various panels in the Barrier Canyon Style area (see, for example, Figure 1, lower right corner, partly cut off).

Near the Rochester Creek site is a small panel of *petroglyphs* that are identical in form to the extremely elongated Barrier Canyon Style painted anthropomorphs, see Figure 11. Unfortunately, the images are faint and do not show up well in photographs. These are also Barrier Canyon Style. This example shows that even the long, tapering Barrier Canyon Style anthropomorphic type exists as petroglyphs.

Summation

These five examples illustrate *by comparison* that Barrier Canyon Style petroglyphs exist.

To this date, not all Barrier Canyon Style pictographs have petroglyph counterparts. Similarly, not all petroglyphs have pictograph counterparts. A good example of this is a panel located near Moab, Utah, see Figure 12. Note that the larger figure has the same body shape as those in Figures 4 and 5, but I have not yet seen painted counterparts for the smaller figures. (This lack of painted counterparts is not unexpected, since there are panels of Barrier Canyon Style pictographs containing images that do not have comparable images in petroglyphs.)

DATING DESERT VARNISH AND PATINATION

Pictographs, though sometimes spectacular and very interesting, have at present an inherent failing when it comes to determining their age. It is difficult, if not

impossible, to obtain an absolute date for the images. At the present time, pictographs cannot be dated unless carbon is present in sufficient quantities to allow radiocarbon analysis. (A significant problem with radiocarbon analysis of pictographs is that collecting a pigment sample will in most instances severely damage the image, which is unacceptable.) Even when carbon is present, there is the problem of determining if the carbon came from a source (hopefully an organic binder) created at or near the time the image was painted. If the artist combined, for example, some charcoal from an ancient hearth with the pigment and the binder, the radiocarbon date obtained for the painting would be older than the actual age of the painting. Similarly, if the paint, while the figure was being painted, was mixed with organic material previously deposited on the cliff face by animals, insects, rodents, lizards, algae, lichens, etc., the obtained date would be incorrect. Furthermore, if animals, insects, rodents, lizards, algae, lichens, etc., deposited organic material on the paint after the figure was painted, the obtained date would also be incorrect. Even wind blown dust containing decomposing plant, insect or animal material remains could contaminate the pigment and give an incorrect date. Radiocarbon dating something that was placed on a cliff face that was covered with organic material initially, and that has been in an open environment since it was created, either a hundred years ago or a thousand years ago, may be impossible.

The existence of Barrier Canyon Style petroglyphs makes it possible to use the relative degree of intensity of desert varnish to roughly assess the age of the image. This is especially true where two

ages of petroglyphs occur close together. It is obvious to those of us who have seen many petroglyphs that differences in desert varnish levels in rock art are identifiable between different time periods. For example, differences are generally, readily identifiable between Archaic petroglyphs (about 6000 to 2000 years ago), the Fremont/Anasazi petroglyphs (about 2000 to 700 years ago), the more recent Ute/Paiute/Navajo (about 500 to 200 years ago) petroglyphs, and those from the historic period (the last 200 years). I believe that we have all seen petroglyphs from these different periods and noted the differences in desert varnish levels.

Desert varnish or patination levels, however, should never be considered an absolute and unequivocal indicator of age. The formation of either of these is dependent on exposure. I have seen several panels where a single figure, extending out from under a sheltered overhang, has several different levels of desert varnish, and the same situation exists for patination. These variations occur because of the different levels of exposure. Therefore, individual figures in a single panel that were made at the same time may give the appearance of being made at different times, or they may give different dates because of their different degree of exposure.

Despite these limitations, varying levels of patination on petroglyphs are very important. They can still provide relative dating information not available with pictographs. Petroglyphs from different periods on the same panel, that has the same level of exposure, can provide accurate relative dates *without* any superposition occurring, something that

rarely exists with pictographs. For example, patination levels of Turner's Glen Canyon Style 5 figures always, in every panel that I have ever seen, has darker patination than either Anasazi Basketmaker or Fremont rock art, when they occur in the same panel with the same exposure. Thus, petroglyphs provide firm evidence that Glen Canyon Style 5 is older than either Fremont or Anasazi petroglyphs, as they are currently defined. When Glen Canyon Style 5 *pictographs* occur in the same panel as Anasazi *pictographs*, they appear as being the same age. At the very least, then, the presence of desert varnish, or any form of patination, provides a basis for assigning better dates than controversial superimposition and opinion of pictographs. (Sometimes superimposition is easily determined, but sometimes it is not.)

Although we are all familiar with the terms patination and desert varnish, I think it is appropriate to define these words, since I have observed that there is some variation in the way they are used. Many people use the two words interchangeably. I know I sometimes say *desert varnish* when I should be saying *patination*. We should understand that the two are not the same; you cannot use the terms interchangeably. Patination is defined as the, "sheen on any surface, produced by age and use; a change in appearance produced by long-standing behavior, practice, or use" (American Heritage Dictionary). Desert varnish is a form of patination, but not all patination is desert varnish. Other things produce patination besides desert varnish. For example, wood left exposed to the elements turns gray over time. Copper or copper alloys, such as bronze, form on exposure a thin greenish layer, which is

usually copper sulfate. Neither of these is desert varnish. Desert varnish, or more correctly *rock varnish*, is a brown to shiny black coating that forms in layers on rock surfaces in many areas of the world. It even forms in Arctic regions. It is about 10 to 500 microns thick. Desert varnish is composed of clay minerals (about 70%) and oxides and hydrides of manganese and iron (Potter and Rossman 1977, 1979). Trace amounts of many elements are also present, among them are: calcium, titanium, copper, barium, lead, aluminum and sodium.

According to current science, desert varnish begins to form when microscopic amounts of clay, along with iron and manganese are deposited on rock surfaces. This deposition occurs principally by the action of wind, but water can also place these substances on cliff faces. Many of us have experienced the blowing clouds of dust that frequently precede storms in our southern Utah deserts. This phenomenon is one of the essential components of desert varnish formation. Iron and manganese exist naturally in the wind-blown clay, or are added from the weathering of nearby sources. The sandstones of the desert areas of the Four Corners contain ample amounts of iron and manganese for this, as evidenced by their spectacular dark red, violet and yellow colors.

Following the deposition of clay, iron and manganese on the rock surface, rainwater comes into contact with them. Rainwater contains the weak, unstable acid, carbonic acid, which is produced by the absorption of carbon dioxide from the air: $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$. Some of the iron and manganese is dissolved by the carbonic acid. When the acidified and

dissolved iron and manganese solution comes in contact with the cliff face, which is alkaline, a neutralization reaction occurs, and the dissolved iron and manganese, being no longer soluble, precipitate. (Both iron and manganese are soluble under acidic conditions but insoluble under basic conditions.) At this time, a little of the clay is also cemented onto the rock surface. In southern Utah, where there are so many sandstones with dark desert varnish, the alkalinity for neutralization comes principally from the calcium carbonate that cements the sand grains together. In other locations, the alkalinity comes from wind-blown alkaline soil. As stated above, the precipitated iron and manganese and other minerals cement some of the clay to the rock surface. This is why a substantial amount of clay is present in desert varnish. Since iron and manganese minerals are dark in color, the layers build up, and the rock surface darkens. The necessity for these conditions to exist before desert varnish will form explains why dark desert varnish is not found in sheltered areas like rockshelters and in areas of the world without alkaline soil.

The necessity of these conditions existing before desert varnish forms may also explain why desert varnish apparently is not forming as fast today as it did in the past. The industrial revolution has resulted in the release into the atmosphere each year of millions of tons of sulfur dioxide and nitrous oxides, etc., which in turn produce acid rain. The rain is so acetic that it is neutralized only with difficulty. Without neutralization, no desert varnish forms.

Once the desert varnish coating is removed from the rock surface, such as by

the creation of a petroglyph, the process begins again. The disturbed area slowly darkens with age as the desert varnish rebuilds in increasing layers. In time, a plateau or maximum intensity is reached, and both the disturbed area and the original surface reach the same color.

Desert varnish also forms a nearly impermeable layer on rocks that protect the rock surface from erosion. We have likely all seen examples where the pecked out area of an image has eroded faster than the surrounding desert-varnished rock.

The gradual darkening of rock art (either by desert varnish or repatination) is not always noticeable. It is most easily seen when an adjacent area is recently disturbed by bullets, names, or graffiti.

Confusion exists when the darkening of images is called desert varnish, when it really is patination. Patination takes only a little while to form when compared to desert varnish, which may take thousands of years to reach its darkest form. A specific example where patination might be confused with desert varnish and give erroneous dating estimates is shown in Figure 13. If you saw only the bottom half of Figure 13, you would likely reach the conclusion that the petroglyph was old because of the high level of “desert varnish”. However, when you see the historic signature, S. G. Peay, and the date, 1911, above the petroglyph both having the same level of “desert varnish”, you must reevaluate your estimate of the age of the petroglyph.

The perplexity of this situation exists because the coating on the names and the petroglyphs is *not* desert varnish. It is patination. The color comes from a coat-

ing of nearly microscopic lichens, algae and dark soil or dirt. The panel is in a somewhat moist, west facing, shaded location, which is a good environment for the rapid growth of lichens and algae, and the moisture retains dust and dirt. (In comparison, there are other dates (even the same name) on other rock surfaces along Indian Creek (where this panel is located), but the others have no, or very little, patination. These other names and dates are not in moist microenvironments, like those in Figure 13, and there are little or no lichens nor algae growing on them.) Without a careful examination of the figures it is easy to mistake patination for desert varnish, or to call it desert varnish when we mean patination.

There is one other thing that may look like desert varnish. This is stain resulting from the high iron and manganese content of soils washing over petroglyphs. These stains are often seen as darker, vertical, parallel lines on cliff faces where water runs over the surface. Many of these moist areas are also excellent environments for the growth of algae and lichens, which also darken the color of vertical, moist areas.

Finally, there is one other category or event that may be considered to produce the appearance of desert varnish or patination, but it is neither. This occurs when rain washes fine reddish-brown dust or soil down over the face of rock, and it coats or covers images. There is a place along Seven-Mile Wash where construction of the road cut through a section of the cliff. Rain washing fine reddish-brown dust down the face of the rock covered over some graffiti. At first glance the images appear to be very old,

100% repatinated petroglyphs, but they are *in* a road cut!

The point of this discussion is that we must be careful what we call desert varnish. If we are not, we may ascribe undue age to a petroglyph panel.

It should be noted here that lichens make the surfaces of rocks acidic. It is one of the mechanisms lichens use to break down the rock so they can extract the nutrients. Lichens, then, are destructive to desert varnish.

Paint can also be destructive to both desert varnish and patination. A good example of this is located south of Moab, Utah, at a popular tourist stop named Hole-in-the-Rock. The owners painted, among others, the words “Hole-in-the-Rock” high on the cliff face. Over the years, the paint has weathered off several times, and it has been subsequently repainted several times. Currently the paint is mostly weathered off. This cliff faces mostly north, so it is a moist location and therefore a good environment for algae and lichens. The alkaline paint killed the microscopic life beneath it and so left a lighter area when it weathered off. Now the area where the old lettering was is much lighter in color than the cliff face where there was no paint and the algae continued to live. It is unlikely that the paint could remove the desert varnish.

CONCLUSION

The existence of Barrier Canyon Style petroglyphs has been demonstrated. What do they tell us about the age of the Barrier Canyon Style? If you examine the levels of patination on the images in

Figure 12, I think that you can reach your own conclusion. The patination level on these figures is not consistent with images from the Archaic period. Therefore, apparently all of what we are calling Barrier Canyon Style is not Archaic. This panel, and others, suggests that there are major age differences within what we are calling Barrier Canyon Style. (Additionally, the images I have included here also suggest that they may be grouped into different categories based on form.)

Preliminary evidence suggests, therefore, that there are problems with the definition of Barrier Canyon Style—as we are using it. There appears to be different ages and different figure types combined into *one* category—the category we call Barrier Canyon Style. Is it possible that the Barrier Canyon Style is, in fact, several different entities (styles(?)) from several different time periods and cultures all lumped in to one category?

I hope that I have been able to demonstrate the existence of Barrier Canyon Style petroglyphs to your satisfaction, and that I have given you something to consider about their age, their definition, and how they were classified.

FOOTNOTES

1. I am including this paper to honor a request of Clifford Rayl that it be published. He asked me about it many times. This paper was presented in 1988 at the URARA Annual Symposium held at the College of Eastern Utah in Price. It was submitted for publication, however, in the process of reaching the editor, it was lost. I recreated it several years later and once more submitted it, and again it was inexplicably lost. Since it has never been

published, and several people have asked me about it, I am including it with the proceedings of this conference. This paper has historical significance, I have been told, because it is the first recorded discussion of the existence of Barrier Canyon Style petroglyphs and it chronicles the first report of some Barrier Canyon Style panels. It is also important that this paper be published because a second paper about Barrier Canyon Style petroglyphs is being written. This second paper will provide additional information and describe new discoveries.

REFERENCES CITED

- Castleton, Kenneth B.
1978 *Petroglyphs and Pictographs of Utah*. Two Volumes. Utah Museum of Natural History, Salt Lake City
- Gunnerson, James H.
1969 *The Fremont Culture: A study on culture Dynamics on the Northern Anasazi Frontier*. Papers of the Peabody Museum of Archaeology and Ethnology, Volume 59, Number 2. Harvard University, Cambridge, Massachusetts.
- Potter R. M. and G. R. Rossman
1977 Desert Varnish: The importance of Clay Minerals. *Science* 196:1446-1448.
- 1979 The Manganese and Iron-Oxide Mineralogy of Desert Varnish. *Chemical Geology* 25:79-94.
- Schaafsma, Polly
1970 *The Rock Art of Utah*. Papers of the Peabody Museum of Archaeology and Ethnology, Volume 65. Harvard University, Cambridge, Massachusetts.
- Schapiro, Meyer
1953 Style. *Anthropology Today*, pp. 287-312. University of Chicago Press.
- Smith Gary
1980 Utah's Rock Art Wilderness Lovre. *National Geographic* 157(1): 94-117.
- Turner, Christy G.
1971 Revised Dating for Early Rock Art of the Glen Canyon Region. *American Antiquity* 36(4):469-471.
- 1963 *Petroglyphs of the Glen Canyon Region*. Museum of Northern Arizona Bulletin 36 (Glen Canyon Series No. 4). Northern Arizona Society of Science and Art, Flagstaff, Arizona.