

ABSTRACT

Stylistic and Compositional Analysis of the Red Beene Shelter (41VV0951) Pecos River Style Rock Art

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While Pecos River style (PRS) rock art remains one of the most-studied rock art styles of the Lower Pecos, extant scholarship seldom considers the insights granted from an analytical art history perspective. With radiocarbon data suggesting a genesis of production in the Middle-to-Late Archaic, PRS spans an immense temporal range of three millennia with marked stylistic coherence. A stylistic analysis of the PRS pictographs of the Red Beene Shelter (41VV0951) reveals the morphology of formal artistic elements and the compositional complexity of the site's panel. The study of line, color, location, spacing, depth, rhythm, and incorporation suggests the aesthetic and functional usage of artistic elements to both depict and animate complex cosmological narratives via intricate stylistic schemas that codify iconographic motifs of supramundane figures.

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STYLISTIC AND COMPOSITIONAL ANALYSIS OF THE RED BEENE
SHELTER (41VV0951) PECOS RIVER STYLE ROCK ART

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CHAPTER ONE

The Phenomenon of Art and Style

An Introduction to Rock Art Archaeology

The North American archaeological record contains an incredible assemblage of morphologically diverse prehistoric rock art styles. From the geometric anthropomorphs of the well-known Basketmaker San Juan Style of the Colorado Plateau to the dense, representative petroglyphs of Arizona's various Archaic Period rock art styles, the United States houses a stunning diversity of spatially, temporally, and stylistically unique pictographic and petroglyphic rock art traditions. Notably, the south-western portion of the Texas's border with Mexico, termed the Lower Pecos region, presents some of the continent's most complex, well-preserved rock art compositions. Several rock art styles are prevalent in the Lower Pecos, though the Pecos River Style is the most common—and certainly most well-studied—rock art tradition of the region. Pecos River Style compositions can range from lone, diminutive pictographs to vast swaths of substantive and abstract forms that comprise vibrant visual codices spanning several hundred feet in length. Painted on the walls of rockshelters, these vibrant artistic creations transform their immediate environments into sacred cathedrals, drawing a bridge between the divine and the mundane through pictographs that record cosmological creation narratives.

Until recently, the merit of rock art research was largely discounted in academic archaeological circles due to the necessarily qualitative nature of stylistic and iconographic investigation of rock art traditions. Veritably, the expression “rock art *and* archaeology” in disciplinary scholarship has only recently been exchanged for the more

precise nomenclature, “rock art archaeology.” However, disciplinary attitudes have warmed to rock art archaeology’s vast research potential, realizing the essential contribution of rock art research to archaeology’s prime enterprise: deciphering the mode and function of past societies’ cultural institutions. Aside from visually recording veridical historic events and diagnostic objects, rock art panels afford quantitative data via the potential for radiocarbon dating and physical and chemical analyses of paint composition, which may intimate the date of artistic genesis and local availability of various flora, fauna, and minerals. Further, painted and engraved pictographic forms present a wealth of indispensable qualitative archaeological data via iconographic and stylistic motifs representative of prevailing cosmological beliefs and ideological tenets of archaic societies.

The association of artistic style with iconographic import remains a fascinating and under-studied facet of rock art research. Accordingly, this thesis launches an inquiry into the viability of stylistic data as a supplement to iconographic rock art data. Precisely, the purpose of this thesis is the execution of an Art History-informed stylistic analysis of a Pecos River Style rock art panel in the “Red Beene” shelter (41VV0951) in Val Verde County, Texas. In analyzing the stylistic conventions of Pecos River Style as it appears in the Red Beene panel, a methodological emphasis is placed on traditional Art History design elements and compositional paradigms as a framework for generating stylistic data. In allying art and archaeology in a transdisciplinary research endeavor, the author seeks to underscore the significance of artistic style as a referent of iconographic morphology and import. The Pecos River Style is an exemplary candidate for this thesis’ stylistic and iconographic analyses as it boasts a highly stylized, and incredibly diverse,

artistic canon that survived nearly three millennia with minimal morphological evolution. Further, significant iconographic research regarding this rock art style has been conducted, suggesting that the Pecos River Style was created and practiced by peoples belonging to the Mesoamerican ideological core who likely adhered to a Huichol-derived cosmology.

This thesis' exploration of style and iconography in Pecos River Style rock art features four chapters. The first chapter critically evaluates definitions of the phenomenon of art and introduces the disciplinary tenets of an Art History-based stylistic analysis. The second chapter investigates the locale of the Lower Pecos region via an overview of ecology, regional cultural history, and prevalent rock art styles. Chapter Three presents the author's research methodology and guiding research questions, with a discussion of the limitations of remote rock art stylistic analysis. The author's guiding research inquiries include the following: What is the color stratigraphy of the Red Beene panel? Is there evidence of stylistic use of color context? What is the compositional perspective of the Red Beene panel and what elements does this compositional orientation emphasize? Based on the results of stylistic data generation, what is the Red Beene panel's intended iconographic "locus of focus"? Finally, Chapter Four presents the results of the author's stylistic analysis, including a digital illustrative transcription of the Red Beene panel and evaluation of evidence of the association of style with iconography within the Red Beene Pecos River Style composition.

Towards an Applied Annotation of Art

Art created by humans assumes a myriad of unique forms and requires a delimiting definition for the purpose of this thesis. Recognition of relative definitions of

“art” per the limitations of certain perceptual and ideological frameworks proves crucial to a viable attempt to stylistically study rock art via a culturally relative analytical methodology. In accordance, definitions of art merit review to ascertain a “comprehensive” exegesis best suited to art manifested in the form of pictographic paintings on a rock surface. In doing so, the author recognizes instances of bias in expositions of art and produces a definition of art that reflects her understanding of the phenomenon as informed by her particular cognitive framework. As extant rock art scholarship seldom considers the insights granted from an analytical Art History perspective, application of the tenets of semiosis theory, Gestalt therapy, and neuroaesthetic color theory to North American Prehistoric rock art research can afford data that supplements and reinforces iconographic data derived from archaeological, ethnohistoric, and ethnographic sources.

Richard L. Anderson, author of *Art in Primitive Societies*, defines “art” as those things “which are made by humans in any visual medium and whose production requires a relatively high degree of skill on the part of their maker” (11). Anthropological denotations of art have traditionally emphasized the degree of technical skill as a metric for determining what is and is not art as well as distinguishing “good art” from “bad art” (Anderson). Critical consideration of such etic quantifications of technical skill of art reveal the relativity of such judgements and the infinite scale of skill employed in artistic creation (Anderson). Warren d’Azevedo, author of “A Structural Approach to Esthetics: Toward a Definition of Art in Anthropology”, recognizes “art” as a “process manifested in social relations” (712). Art, per this conceptual framework, assumes aesthetic and artistic form relative to the culturally bound perception of social actors. Similarly, George

Mills, author of “Art: Introduction to Qualitative Anthropology,” conceives of art as making “ideas as well as objects the conditions of experience in the qualitative mode,” such that art is immediate in its sensuousness and arresting in its social agency (16). Alternatively, Rudolf Arnheim champions Gestalt psychology as a conceptual tool for the study of visual elements of art, suggesting that visual perception is itself a “kind of thought,” a way of comprehending reality (Arnheim).

Though hardly representative of the many extant elucidations of the phenomenon of art, these definitions present nominal ideological frameworks conducive to a more inclusive understanding of art. A venture to holistically describe “art” thus merits incorporation of unique ideological conceptions of the phenomenon, including Anderson’s definition of art as skilled production, d’Azevedo’s theory of art as an intrinsically social and cultural process with relative aesthetic value, and Mill’s recognition of art as both an originator of, and response to, affective experience. In essence, art is the interpretation of states of physical reality as well as internal emotive states and spans the full breadth of human emotion and cognitive processing. A comparably nuanced definition of art must then consider this universal, though culturally specific, emotive agency (Newcomb).

Further, applied definitions of art in anthropological and stylistic analyses must avoid subscription to cultural-aesthetic bias frequently found in Western abstractions of art, that art is a passive process typified preeminently by its aesthetic, decorative, and recreational qualities (*Rock Art of the Lower Pecos*). In prehistoric, non-Western societies, art performed impressive social work, enabling derivative transformation of individual intellectual assets into group intellectual assets (*Rock Art of the Lower Pecos*).

An applied definition of art must circumvent the fallacy of artistic progress and unilineal evolution of style. Thus, nuanced contextualization of art proves essential. It is important to recognize that prehistoric artists may have created art in isolated, homogeneous cultural and artistic milieus while present industrial societies retain expanded access to an augmented range of resources which inform novel modes of art production (Newcomb).

Through the concerted effort to understand and describe what art *is*, a tangential inquiry emerges: *Why* do humans create art? Art exists as a cultural and biological phenomenon that fulfills a singular need of the human psyche, enabling man “to recast [himself] and [his] environment in ideal form” (Janson & Janson 15). A biological understanding of art maintains that the phenomenon arises from the human impulse to play, that the human brain “actively creates [art] because it benefits us” as the creative overflow of complex human biology (Brown & Vaughan 61-62). Art encourages social integration as a “preverbal communication that binds people together [...] [in] communion” (Brown & Vaughan 62). Moreover, the theory of Gestalt therapy in psychology suggests that artistic expression enables the nonverbal expression of problems such that visual media comprise a “colorful palette of creative means [...] implemented to promote productive solutions” (Amendt-Lyon 229). With reference to these various presented descriptions of art, the author’s definition of visual art is tendered that aims for comprehensibility of the expression of the essential components of the phenomenon as deemed germane to this thesis. This definition reflects the ideologically biased view of the author that art is in quintessence a provocative product of the human mind that appeals in a primal, powerful way, whether subliminally or in explicit consciousness, to the mortal soul:

Art is the necessarily visual manifestation of naturalistic and non-naturalistic abstractions of the human brain and pneuma born of particular emotional, contemplative, and culturally valued motivations and beliefs. The visual arts are the intuitive language of the human psyche expressed with differential technical skill, with alphabetic characters of color, texture, composition, and style, among a plethora of others. Art is a vehicle for the expression of phenomena inherent to mortal experience: beauty and simple pleasures, awe and existentialism, anger and grief. Art is an act of agency, a powerful and self-perpetuating instrument of social commentary and political appeal, both an origin and referent of cultural knowledge. Art is a subjective and universal medium of intimate human expression affecting concrete and conceived realities. Crucially, art is the means by which man understands and objectifies his world and the mode by which he conceives of himself and his likeness. It is a means for man to conceive his prey and with a bold stroke sympathetically dispatch it, to erect mountains and paint valleys, to visualize and animate his gods, to construct a reality and transiently live in it. Art's potency is culturally determined and thus functionally variable, a static product of aesthetic regard in one cultural construction and a dynamic and animated matrix of universal truism in another. It is a powerful mode of externalizing the internal and a form of communication appealing to primal human affinity in consumption of optical stimuli. Art is a visual language that performs work, whether by emotive appeal based purely on aesthetic appearance or by ritual, political, or commemorative effectiveness borne in the social act of artistic creation and the cultural salience of style.

A Review of Extant Cross-Curricular Research

Present-day rock art archaeology demands a multi-disciplinary understanding of art that draws from studies of linguistic use trends, clinical neuroscience research, theories of semiosis from Art History, and color science and Gestalt therapy in psychology. Through these disparate avenues of data, an understanding of art is not merely generated, rather, a sensitivity to *how* and *why* we understand art in certain ways emerges. A review of the etymology and linguistic morphology of “art” in the English language discloses consequential trends in Western attitudes towards art that have informed conventional archaeological understanding of the phenomenon.

The word “art” in its current denotation appeared in the English dictionary for the first time in 1880 (*Rock Art of the Lower Pecos*). By the twentieth century, “art” in

Western society had acquired an increasingly aesthetic, passive quality such that artistic production was relegated to a leisurely pastime. Art, thus, became the abstract object of man's grave contemplation (*Rock Art of the Lower Pecos*). The origins of such non-utilitarian conceptions of art can be traced to the 16th and 17th-century European Enlightenment. The Enlightenment's revolution of the European social intellect realized a vogue obsession with anthropocentric experience. Art, accordingly, assumed a newfound cultural station as both a reservoir and a source of inspiration, confoundment, and amusement of human reason, a form of innocuous play for the erudite mind. The conception of "art for the sake of art" endures in Western society and largely discounts the social agency of art as a symbolic framework for the sharing and codifying of intangible assets (*Rock Art of the Lower Pecos*). The query arises accordingly: is art for art's sake purely a modern idea, borne from a materialistic industrial culture, or did prehistoric peoples also recognize art by merit of its own "intrinsic worth" apart from social function? Has modern archaeology overcorrected for this Western paradigm, introducing a negative bias for art without apparent social utility? A critical reevaluation of relevant scholarship is wanting.

A holistic understanding of art as it relates to the study of rock art benefits from the consideration of neuroaesthetic research. Scientific study of the neurology of humans' aesthetic preferences suggests that cultural messages instilled in painted lines and geometric shapes appeal uniquely to humans' visual neurons (*Rock Art of the Lower Pecos*). Neuroaesthetic research, though largely beyond the scope of this thesis, bears the potential to yield novel theories regarding the particular genesis, evolution, and championing of certain rock art styles based on the aesthetic preferences of the human

nervous system. Thus, the particular color scheme, common morphology of stroke, and compositional perspectives of the Pecos River Style may be explained, in part, as a result of neurology of sight, in addition to social, political, ecological, and cosmological factors, among a plethora of others.

Importantly, stylistic and aesthetic studies of art in anthropology and archaeology must account for artistic relativity. If judgement of technical skill proves inevitable in such endeavors, emic-based evaluations of art provide limited protection against culturally biased and ethnocentric valuations. An ultimate limitation of archaeological inquiry is thus revealed, that the interpretation of an artistic and iconographic style necessarily occurs retrospectively (Newcomb). Contemporary rock art research occupies a time and space beyond the crucial context of rock art genesis and is tasked with reconstructing the import, function, and salience of ancient man's material remains. Thus, understanding merely the technical action of painting figures on rock faces proves an inchoate effort. Archaeology demands the discovery of the social actions that occasioned and accompanied this artistic expression, of the essential instructional niche that these rock art murals fulfilled in their respective cultural matrices. The customary maxim of the discipline of archaeology rings true, that material remains alone contain no assured referent of original social import or function. Supplemental avenues of data via ethnohistoric, ethnographic, chemical, biological, faunal, and environmental sources, among numerous others, are mandated for an exhaustive effort in theorizing the meaning of the material vestiges of man.

Consideration of the Process of Generating Meaning from Art

Semiotic theory in Art History illuminates the complexity of the task of retrospective meaning-making, revealing that context itself is not immune to predisposed interpretation (Bal & Bryson). The oppositional dichotomy of artistic act and context forwards the context as a fixed state from which the act derives its principal import (Bal & Bryson). Veritably, contexts acquire meaning via events and thus necessitate recognition as dynamic, evolving settings that affect art and are affected by art (Bal & Bryson). Archaeology's conundrum regards the multi-faceted, contingent nature of "context" that "implies from its first moment a potential regression without brakes" (Bal & Bryson). Attempts at theorizing semiosis of rock art thus include a study of the infinite transfers of meaning between signifiers, of a "perpetuum mobile" in which signifiers retain no origin of semiosis nor final destination of meaning (Bal & Bryson 5). An added difficulty arises from Nietzsche's "chronological reversal" of semiosis regression in which Art History rhetoric relates context to a specific work of art, thus conjuring a version of context from the work itself while maintaining the original role of context in producing the work of art (Bal & Bryson 6; 23). Art History semiotic theory maintains the reconstitution of art in a plurality of interpretive contexts such that "once launched into the world, the work of art is subject to all the vicissitudes of reception" (Bal & Bryson). Art thus transforms per the variegated conditions of its consumption and monopolizes no decided meaning per its manifold receptive encounters. A tentative provision for the context conundrum posits the deemphasis of "context" as circumstantial of the present via the positioning of "context" as a delimited state of the past (Bal & Bryson 8). Historiography, accordingly, retains limited authoritative determination of

context. Ultimately, semiotic analysis seeks to realize the “logic according to which meanings are engendered” and negates production of interpretation as a viable analytical objective (Bal & Bryson 49). Instead, the process by which social actors make meaning of visual information is emphasized and the transient aesthetic ideologies of each receptive context are acknowledged such that trends in operative codes of viewing emerge (Bal & Bryson 53). A concomitant query arises: did social actors retain differential access to codes of viewing? In the frame of reference of a particular time and space, was cultural cognition egalitarian? Did the makers of the Pecos River Style grant full conceptual access to the meaning of pictographic signs? These questions bear no definitive answers in present rock art archaeology research, but nonetheless crucially predispose the researcher’s methodology to consider this possibility. Finally, semiotic theory offers a valuable critique of language as a means of conveying visual data. Language proves an instrument of generalization that operates in an abstract plane incapable of capturing the dynamic gradations of the visual experience of art. While language retains a hierarchy of “significant units” predicated on the basic unit of the letter, art as painted strokes largely lacks non-arbitrary visual categories (Bal & Bryson). Thus, Art History and the analytical stylistic methodology of this thesis concedes to the arbitrary atomization of the units of visual images as a necessary imposition of a standardized framework for data generation.

Viewing Art as an Interpretive Process

Gestalt Therapy affords consequential delineation of modes of viewing, perceiving, and understanding visual media that underscores the systemic relatedness of experience and expression (Amendt-Lyon). Psychology’s recognition of different

propensities and modes of visual perception, meaning-making, and creative expression among social actors reveals the remarkableness of enduring stylistic trends and the triumph of Pecos River Style as a standardized, coherent rock art tradition spanning over two millennia of consistent production. Psychology of art forwards an awareness of a “middle mode” between the subconscious and the critical conscious during the act of artistic expression that regards neither active nor passive application of the intellect to a concerted task (Amendt-Lyon). Art thus evokes a transformation of individual cognitive states and realities. This transformation is realized manifold in Pecos River Style compositions which regard the subject of narrative transformation of painted anthropomorphs, the animation of such figures upon artistic creation, and the execution of veridical transformations of rock surfaces. The tenets of Gestalt therapy suggest that the praxis of Pecos River Style realized a sacred, transformative process involving the psychological, emotional, and spiritual pilgrimage of the artist through his cosmology. Importantly, Gestalt psychology affords a potential cognitive basis for the particular visual system of Pecos River Style. Psychology research intimates that the human mind spontaneously generates backgrounds in the visual perceptive process and demonstrates a proclivity to “complete wholes” and to enact “closure” of unfinished portions of wholes (Amendt-Lyon). Further, human cognition is finely attuned to the recognition of certain patterns via the laws of similarity and proximity and engages in the reduction of complex geographies into simplified forms (Amendt-Lyon). Accordingly, human perception appears innately reductive and reconciliatory, intimating that complex Pecos River Style panels utilizing over-stimulating color schemes and multi-faceted compositional arrangements induce an increased cognitive response in perceptive agents. Ultimately,

psychotherapy and art suggest humans' predisposition to transform the "mundane" into novel forms bearing emergent knowledge of the world and one's relation to physical reality (Amendt-Lyon). Art and Pecos River Style represent more than the mere recording of individual states—they comprise individual and collective discoveries of new intangible assets, of revelatory cosmological meaning.

An Overview of Meanings of Artistic Style

As this thesis regards the execution of a stylistic analysis of an Archaic Period rock art panel, a discussion of style and conventional methodologies of stylistic analysis proves apropos. Art History considers "style" as the formal quality of a work of art, denoting the unique execution of forms that comprise an artistic totality (Janson & Janson). Style also functions as a measure of cohesion, referring to the degree of semblance between various works of art (Munsterberg). Philosopher Berl Lang suggests that style is a "narrative form [...] tied to the literary trope of synecdoche in which one feature is an ingredient in all the others" (Munsterberg). Accordingly, style may be understood as the way in which people condense real objects into codified representative images and afterimages (Lewis-Williams et. al). Style is necessarily culturally and temporally situated and dependent on knowledge of visual systems that imbue it with idiosyncratic meaning and agency (Schaafsma). The theory of style in Art History maintains that style comprises a spatially and temporally bound preferential technique of artistic execution with an acceptable range of variation (Schaafsma).

Alternatively, style in rock art research denotes a visual system of "shared aesthetic modes signifying participation in a given ideographic system [or] interaction sphere" (Schaafsma 253). In prehistory, artistic style retained marked social agency as a

referent and reinforcer of cultural identity, the visual typology of the social conscious (Schaafsma). Style in Archaic Period rock art thus likely functioned as a socially stabilizing force facilitating a validating standardization of everyday experience (Schaafsma). Traditionally, North American archaeology has employed a style-function dichotomy based on the presence or absence of external compulsion. This exclusive dichotomy ultimately obscures the many intersecting cultural systems that produce human behavior (Bettinger et al.). Understood as an isochrestic phenomenon, style exists as a “patterned behavior reflecting essentially arbitrary choices between essentially functionally equivalent ways of doing things” (Bettinger et al. 137). Accordingly, style may be the product of an evolutionary human need for “routinization of technique” and solidification of human relationships (Bettinger et al. 137).

Techniques of Stylistic Analysis

Art History recognizes three central modes of stylistic analysis via ekphrasis, formal, and iconographic techniques. Ekphrasis regards an ancient method of writing about art—championed in ancient Greek society—that renders the reader an active participant in a vicarious visual and emotive experience (Munsterberg). Alternatively, formal analysis executes an elucidation of visual structure per the compositional organization and function of visual elements (Munsterberg). Units of formal analysis include the elements of color, shape, line, light and dark, space, plane, texture, and composition as well as the principles of balance, contrast, movement and direction, emphasis, pattern, proportion, and unity (“Formal Visual Analysis: The Elements & Principles of Composition.”). Iconographic analysis refers to an interpretation of the “original” meaning retained by a work of art at the time of its genesis (Munsterberg).

Importantly, this type of analysis requires the nuanced process of comparative analysis of art to other temporally and culturally relevant images and texts with the understanding that visual elements often symbolize the complex integration of cosmological ideas (Munsterberg). In his highly influential publication, *Studies in Iconology: Humanist Themes in the Art of the Renaissance*, German American art historian Erwin Panofsky forwards a methodology of meaning-making via three strata of subject matter with attendant processes of pre-iconographical description, iconological analysis, and iconographical interpretation (Panofsky). Primary or natural subject matter include a factual or expressional subject conceived via the recognition of configurations of lines and color representative of natural objects (Panofsky). Secondary or conventional subject matter require the association of artistic motifs with themes or images. For example, a Western, Judeo-Christian viewer would likely interpret an image of thirteen men around a table as symbolic of the Bible's Last Supper (Panofsky).

Though iconographical analysis lies beyond the task of this thesis, a qualification of pure forms and stylistic motifs in Pecos River Style realizes a crucial connection between style and iconography particularly germane to an attempt to apply Art History design principles to rock art archaeology research. As there exists deep bias in artistic expression reflective of the unconscious expression of certain symbolic values of the artist, stylistic analysis represents the first step in deciphering iconography and thus the prevailing ideological context of an artistic creation.

Color Science in Stylistic Analysis Methodology

An analytical Art History perspective for the purpose of this thesis will rely on the study of the elements of art and principles of design as well as theories of color, color

context, numerology, and compositional perspectives. A present review of extant color theory scholarship initiates the generation of a conceptual foundation for a neuroaesthetic investigation of the artistic conventions of Pecos River Style. Orthodox methods of colorimetry include efforts to enumerate the physical causes of color as well as the phenomenon of the subjective perception of color (*Color Perception: Physiology, Processes and Analysis*). Several psychological theories posit that color results from a neural brain-stimulation process or as a psychogenic event that may comprise an evolutionary survival mechanism in man (Agoston 3 & *Color Perception: Physiology, Processes and Analysis*). Further, studies of visual systems of perception demonstrate the palpable impression of color on human physiology via influence of affective states, blood pressure, and veracity of vision, in addition to other anatomic systems (*Color Perception: Physiology, Processes and Analysis*). Selective color use by the Archaic artists of Pecos River Style, thus, may represent a conscious or subconscious effort to manipulate emotive states of social actors per differential cosmological themes of painted compositions.

A plethora of disparate theories seek to explain the phenomenon of color, variably debating the veracity of color as the product of mere illusion or as a real, quantifiable property. The Nineteenth-century Young-Helmholtz chromatic theory retains prominence in color science for postulating the widely affirmed description of color vision as the product of red, green, and blue photosensitive cones in the retina of the eye ("Young Helmholtz Color Vision Theory."). Color science maintains that color is the result of the physical-chemical composition of an object as well as the product of optical events such as refraction, dispersion, interference or diffraction of light from illuminated objects

(*Color Perception: Physiology, Processes and Analysis*). More simply, theories of art recognize that the color of an object exists as a quality of its appearance dependent on optic sensing of light. Color, thus, is inherently associated with sentience (Hyman). As is the case in Pecos River Style pictographic compositions, color in paint relies on various natural pigments that retain a molecularity conducive to the absorption of incident light upon illumination (*Color Perception: Physiology, Processes and Analysis*). Color science and art theories assign three qualifying specifications of color: hue, saturation, and brightness (Hyman). “Hue” or “color” is created via relative frequencies of impulses in the fibers of the red, blue, and green cones respectively, while “saturation” or “purity” is determined by the amount of white resulting from the fusion of the cone fibers (“Young Helmholtz Color Vision Theory.”). “Brightness” or “intensity” is contingent on the totality of the frequency of impulses in all three types of cones (“Young Helmholtz Color Vision Theory.”). Experimental evidence suggests that only four hues are perceived as “pure”—unitary green, unitary blue, unitary red, and unitary yellow—while all other hues are comprised of mixtures of unitary hues and are thus binary (Agoston 12). As Pecos River Style compositions include red and yellow as primary colors in a quaternary color system, a preference for unitary hues in stylistic schemas warrants consideration via physiological and neuroaesthetic avenues of research.

Color Theory entered the American academic milieu in the early twentieth century and assumed new prominence in Art History in recent decades as the legacy of Isaac Newton’s invention of the color wheel (Agoston). Critical assessment of the history of color theory reveals a tendency for eurocentrism as a western model for color perception. Specifically, color theory demonstrates a propensity for the orderly

delimitation of hues assigned to linguistic categories influencing perceptual judgement (Pettersson). As color categories originate in social experience, differential accentuation of color classes produces culturally relative color perception (Ratner). Psychological research regarding the subjectivity of color cognizance proves contentious, with varying levels of evidential support for relative sociohistorical psychological governance of color perception and the seeming universality of perception of mid-point focal colors via a physiological attunement to the medians of color classes (Ratner). Ultimately, it is apparent that an individual's color perception may be influenced by myriad of factors including age, gender, affective state, cultural and social contexts, temporal factors, and perceptual factors such as optic physiology and ambient illumination of one's setting (Pettersson). Efforts to qualify perceptive experiences of color have produced several standardized color notation systems including the Munsell color system, which is widely employed in archaeology as a means for systematic color specification (Agoston). This color system retains a scientific basis in quantification of color via hue, value, and chroma and has informed recent advances in the field of colorimetry including the development of other color systems such as the Swedish SIS Colour Atlas Natural Color System for the selection of color samples per visual means (Agoston). Due to the limitations of remote analysis and the task of digital transcription of the Red Beene panel, this thesis will employ the "RGB"—or Red, Green, Blue—color value system used in digital displays and digital art programs. Though this thesis utilizes the "RGB" system of color standardization for analytical purposes, it is pertinent to recognize that Pecos River Style compositions were likely produced by artists in an altered psychological state induced via consumption of biological hallucinogens such as peyote or datura. Thus, the

optic physiology of the practitioners of Pecos River Style may have been influenced resulting in extraordinary visual perception. Additional neuroscientific studies prove necessary in order to propose testable hypotheses regarding the potential for the unique visual consumption of Pecos River Style by individuals in a hallucinatory state.

The succeeding chapters of this thesis seek to execute an Art History-informed stylistic analysis of an Archaic Period Pecos River Style pictographic panel. Though technical judgement of the Prehistoric rock art of North America by the Eurocentric standards of Art History, or vice-versa, would constitute an invalidating ethnocentric fallacy, a comparison between techniques of color use, morphology of stroke, and compositional organization may yield telling affinities or disparities, which may be further pursued via additional avenues of concrete data. The acquisition of stylistic data denotes the genesis of the preliminary process of associating stylized artistic elements with Archaic Period rock art iconography. Subsequent archaeological inquiry requires finding meaning in such stylistic data, which entails deciphering the meaning of Archaic Period rock art in the cultural, aesthetic, political, and cosmological context of its creation.

CHAPTER TWO

Pecos River Style, Shamanism, & Mesoamerican Cosmology

This chapter will review extant scholarship regarding the rock art styles of the Lower Pecos with specific emphasis on the cultural and ecological context of the production and execution of Pecos River Style (PRS). Further, the diagnostic visual elements of PRS will be identified and the author will discuss the association between shamanism, narcotics, and PRS as a tradition of altered psychology in rock art production. An overview of Mesoamerican cosmology—with particular attention to the creation narrative of the Huichol—affords an exordium to iconographic qualification of PRS and to the complementary coupling of stylistic and iconographic data in rock art archaeology research.

Nascent human artistic expression assumed the form of pictographs and petroglyphs on rock surfaces as early as 50,000 years ago. Much of the world's oldest rock art was produced by peoples in Africa, Australia, and Europe, such as in the El Castillo Cave in Spain which contains the earliest known cave pictographs, dating to around 40,000 years ago (d'Errico). A general evaluation of the phenomenon of human-generated paintings and engravings on rock faces reveals the pervasiveness of anthropocentric, non-naturalistic figures and the scarcity of landscapes and vegetation as focal elements (Newcomb). Homeopathic magic inspired much of the world's early rock art and realistic illustrations of animals and painted scenes of humans running, hunting, and fighting deep within caves in Europe evidence the functional association of rock art and sympathetic ritual practice (Newcomb). Africa is one of the foremost reservoirs of

rock art, retaining a wide breadth of rock art styles ranging from abstract geometric shapes to veristic portrayals of humans and animals (Newcomb). North American rock art also assumes a myriad of divergent styles and is endemic in the arid, western environs of the United States (Newcomb). Notably, the aridity of the Lower Pecos region of Texas has resulted in remarkable preservation of an impressive cohort of prehistoric rock art styles, including one of the continent's earliest and most visually striking rock art styles: the Pecos River Style (Newcomb).

Paleoclimate and Cultural History of the Lower Pecos

A polychromatic pictographic tradition, PRS has embellished the limestone and sotel-speckled landscapes of the Lower Pecos canyonlands for nearly three millennia. The Lower Pecos occupies the dusty arroyos of Coahuila, Mexico and southwestern Texas at the confluence of the Pecos River and the Rio Grande (Turpin). Occupying the junction of the Tamaulipan, Balconian, and Chihuahuan Biotic Provinces, the Lower Pecos canyonlands feature savanna-like vegetation with a predominance of woody plants including mesquite, acacia, Texas persimmon, and creosote (Turpin). The semi-arid climate also supports the ubiquitous presence of succulents, prickly pear, yuccas, and lechuguilla. Javelina, jackrabbits, and whitetail deer are common temperate climate fauna while various species of lizards, rodents, and snakes are also prevalent (*Rock Art of the Lower Pecos*).

Human presence in the Lower Pecos dates back to the Paleoindian Period around 10,000 years ago during a warming paleoclimate in which megafauna became extinct and subsistence economies relied on small game and vegetative foodstuffs (*The White Shaman Mural*). Increased aridity prompted the transition to the Early Archaic Period

lifeway, ranging from 8,000 B.C. to 4,000 B.C., that demanded rigorous cultural adaptation. Portable art, such as painted pebbles and clay figurines, appeared on the Pecos landscape during this time (*The White Shaman Mural*). Spanning from 4,000 B.C. to 1,500 B.C., the Middle Archaic Period experienced desertification of regional landscapes as population densities increased along rivers. The use of earth ovens to cook lignin-rich foods burgeoned during this time, intimating reduced population mobility and augmented dietary reliance on complex carbohydrates such as sotol and lechuguilla (Dering). This invention of specialized techniques to process desert succulents evinces an episode of internal cultural transition and a consolidation of cultural capital that produced a distinct cohort of Lower Pecos Archaic Period rock art traditions (Perttula).

PRS arose in the terminal half of the Middle Archaic Period as the number of regional forager sites proliferated (Perttula). A cooler and wetter climate returned in the Late Archaic Period, ranging from 1,500 B.C. to A.D. 1000, and resulted in the transient return of bison as grasslands expanded (Turpin). The appearance of central Texas dart points, open site habitation, and a mature Red Linear rock art style during this period intimate an accelerated rate of immigration to the Lower Pecos region (Shafer). The regional production of rock art continued through the Late Archaic Period and into the Late Prehistoric Period, dating from A.D. 1,000 to A.D. 1,500, with the introduction of the bow and arrow to the Lower Pecos around A.D. 700 (*The White Shaman Mural*). The Late Prehistoric marked a period of cultural revolution as peoples, rather than ideas, migrated into the Lower Pecos region from northern Mexico (Shafer). The Historic Period, spanning from A.D. 1650 to the present, included dramatic population relocation and intensification of warfare at the arrival of Spanish troops to the region (Perttula).

Rock art produced during this period, the Historic style, emphasizes the antagonistic nature of the relationship between European colonists and Native Americans.

The creators of PRS were nomadic hunter-gatherers whose material culture remains remarkably well preserved in dry rockshelter deposits affording an exceptional 11,000-year archaeological record of local lifeways (*The White Shaman Mural*). The peoples of the Lower Pecos roamed the desert landscape in small bands—likely less than 25 people—related by marriage or descent and typically inhabited provisional upland shelters unless extreme weather mandated relocation to rockshelters (*Rock Art of the Lower Pecos*). These forager groups were egalitarian and practiced a broad-spectrum economy dependent on seasonal rounds. Local resources sustained a diet of 35 wild plant foods and nearly 60 different kinds of small fauna (*Rock Art of the Lower Pecos*). The largely unprecedented concentration of hunter-gatherer sites along the region's rivers, coupled with stellar preservation, have yielded an impressive archaeological assemblage of twine sandals, mats, cordage, containers, stone tools, cooked plant remains, coprolites, faunal bones, and fire-cracked rock (*The White Shaman Mural*).

Hundreds of rockshelters along the Rio Grande and Pecos Rivers contain rock art images on their walls. These rockshelters range from shallow cliff overhangs to extensive, cavern-like spaces, some with only a few flecks of remnant paint, others with breathtaking murals measuring over 30 feet in height and well over 100 feet in length. The rock art of the Lower Pecos is in many cases extraordinary, particularly so for its stylistic diversity, its preservation, and its temporal range of production, dating from around 2,000 B.C. to the time of the Spanish “discovery” of the Lower Pecos in the 16th century (*The White Shaman Mural*).

Review and Critique of Formative Lower Pecos Rock Art Literature

Emma Gutzeit and Mary Virginia Carson of the Witte Memorial Museum, Forrest Kirkland, William Newcomb, and A.T. Jackson comprise the foremost pioneers of Early 20th-century Lower Pecos rock art research (Newcomb). Published in 1967, William Wilmon Newcomb's *The Rock Art of Texas Indians*, with rock art panel illustrations by Forrest Kirkland, constitutes one of the first, seminal efforts to visually document the region's art. Though Newcomb's work remains a formative mainstay of Archaic Period rock art scholarship, recent archeological investigations of the Lower Pecos have challenged several of Newcomb's PRS hypotheses. Accordingly, critiques of Newcomb's PRS cultural stasis hypothesis and shamanic model hypothesis are forwarded in order to clarify the current state of archaeological understanding of PRS and to appreciate the ever-evolving state of archaeological knowledge.

Newcomb's cultural stasis hypothesis characterizes the Pecos cultural connection as an "inward looking tradition with ancient origin suited to a static existence" (Newcomb). Newcomb further argues that the western Archaic Period cultural base remained stable in the Lower Pecos region despite precipitated demographic transition, asserting that local cultures ultimately practiced a conservative cultural tradition that preserved stylistic and technological modes through time (Newcomb). However, recent archaeological research suggests that paleoclimatic change prompted cultural transition in the Late Archaic as reduced water availability instigated a regional increase in population densities and mandated novel modes of social control. Increased forager mobility, diversification of diet, and utilization of various ecological niches indicate the development of a generalized food procurement strategy (Perttula). Ultimately, it appears

that the Lower Pecos Archaic Period cultural core was not static as suggested by Newcomb. Rather, it realized an adaptive society via an intensification of ritual practice that culminated in the public production and display of rock art panels (Shafer). Thus, the Lower Pecos cultural mode, including the praxis of PRS, demonstrated remarkable flexibility amenable to the pressures of a capricious climate (Pertulla).

A review of Newcomb's regional rock art typology reveals the origins of the application of the shamanic model to the interpretation of PRS pictographs. Newcomb identifies four PRS substyles representative of the style's developmental and chronological sequence. Ongoing Lower Pecos rock art research suggests that Newcomb's substyles impose an overly rigid criteria for PRS's internal variability which constitutes a gradient of stylistic dynamism rather than discrete categories of stylistic execution. Ultimately, Newcomb's assertion that PRS progressed from crude forms to an institutionalized coda of representative figures remains unconfirmed by the latest rock art research. Further, Newcomb's hypothesis that detailed, highly stylized anthropomorphs signify shamans while simple and diminutive figures represent subordinate humans has been challenged (Newcomb).

Recent archaeological advances in North American rock art research indicate that Newcomb's shamanic model hypothesis proves a reductive fallacy that suggests an exclusive dichotomy of divine and mortal elements. While anthropomorphic figures may well denote either gods or men, it is common to see the conflation of both divine and mortal attributes within the same figure. Also, though anthropomorphs often comprise the focal subject of PRS compositions, veritably every element, regardless of size or

classification, retains iconographic significance as an essential component of the compositional narrative.

Ongoing Lower Pecos Rock Art Documentation Projects

While pictographic rock art was a common convention of the North American Archaic Period, it comprised a singular obsession of the Lower Pecos peoples. Until recently, four temporally successive styles were identified in the Pecos canyonlands: the Red Linear Style, Pecos River Style, Red Monochrome Style, and Historic style. PRS and Red Monochrome styles remain the most prevalent and well-known styles among Lower Pecos pictographs (*Rock Art of the Lower Pecos*). Recent analysis of the superpositioning of rock art styles has revealed that PRS, originally theorized to constitute the oldest rock art style of the Pecos region, actually overlies the Red Linear style, thus reversing the regional style chronology (“A Reassessment of Red Linear Pictographs...”). Though four rock art styles were originally identified in the Lower Pecos, current rock art documentation efforts suggest the existence of transitional styles as well as entirely separate, distinct styles, such as a yet-unnamed style of dark maroon geographic shapes and bulbous anthropomorphs frequently observed in Seminole Canyon State Park in Val Verde County. Ultimately, ongoing documentation of these various pictographs reveals the marked stylistic diversity within and between Lower Pecos rock art styles, suggesting that there exist additional, distinct stylistic traditions yet to be identified.

The formidable task of digitally documenting the rock art of the Lower Pecos has been championed by the Shumla Archaeological Research and Education Center. A nonprofit organization working internationally to preserve cultural heritages through rock art recording and preservation, Shumla maintains that it is “imperative to create a

permanent visual, auditory and textual [rock art] archive for present and future generations” (“Digital Documentation...” 98). Importantly, the generation of this digital repository of archived rock art data facilitates multidisciplinary research and public education initiatives. The organization was founded in 1998 by Dr. Carolyn Boyd, an internationally renowned rock art researcher and professor at Texas State University, San Marcos. Recently, Shumla has launched its Alexandria Project plan to perform baseline documentation of the rock art of the Lower Pecos as deteriorative agents such as flooding, microbial growth, mineral accretion, vegetative disturbance, sheep rub, vandalism, and a changing microclimate threaten the preservation of the region’s ancient visual codices.

The majority of the primary data analyzed in this thesis, including Gigapanorama imagery, Structure for Motion 3D models, and DStretch enhanced imagery of the Red Beene PRS pictographs, were recorded, created, and publicly shared by Shumla. Further, Dr. Boyd’s PRS research has not only proved critically instructive in the execution of this thesis, but her book, *The White Shaman Mural*, veritably inspired the author to pursue a rock art-centered research topic. Through various correspondence, the Shumla staff archaeologists have contributed significantly to the author’s knowledge of Lower Pecos rock art styles.

Overview of Lower Pecos Rock Art Styles

The four most prevalent rock art styles of the Lower Pecos present engrossing stylistic affinities and disparities that reflect the emergence and internal maturation of each style relative to its stylistic predecessor. The oldest rock art style, Red Linear, includes diminutive, stick-like human forms and often features group activity with

clusters or linear sequences of anthropomorphic figures (*Rock Art of the Lower Pecos*). Though predominantly executed in red, rare black Red Linear pictographs have been documented. Unlike the Red Linear style, PRS uses yellow, red, black, and white paint in its compositions. PRS demonstrates a marked interest with anthropomorphic figures and enigmatic designs, with individual elements ranging from a few inches tall to nearly 30 feet in height. PRS anthropomorphs are typically depicted in the frontal perspective with long, tapering rectangular bodies, outstretched arms, flat, geometric, or absent heads, and arm or waist paraphernalia. PRS compositional totalities may cover a few inches of the rock wall or stretch several hundred feet in length. In a recent Lower Pecos rock art study, Accelerator Mass Spectrometry (AMS) dating of twenty-five samples of organic paint binder used in PRS compositions revealed that the production of PRS was common from approximately 2,250 B.C. to around 1,000 B.C. (*Rock Art of the Lower Pecos*). However, additional radiocarbon and AMS dating of PRS paint samples is required to ascertain a more accurate, comprehensive temporal range of PRS production. PRS predates the Red Monochrome style, which typically portrays frontally positioned humans, often life-sized, with bent arms. Realistic animals and positive handprints are also common in this rock art style. The Red Monochrome style uses a distinctive orange-red paint and emphasizes scenes depicting antagonistic anthropomorphic encounters. The youngest rock art style, the Historic Period style, features detailed, realistic illustrations of colonial encounters with Spanish officers, horses and cattle, and Christian missions as focal subjects depicted in red paint.

Considered the most common and idiosyncratic of the Lower Pecos rock art styles, PRS rock art is pervasive in Val Verde County and is commonly concentrated

within river drainage systems including the Rio Grande, Pecos, and Devils rivers. Spanning a temporal production range of nearly three millennia with marked stylistic coherence, PRS was likely ubiquitous in the Lower Pecos during the terminal Archaic Period. Today, PRS pictographs are nearly universally discovered in long, shallow rock overhangs termed “rockshelters” indicating a locational preference for PRS production, though preservation factors may have resulted in differential visibility of rockshelter pictographs in the archeological record. Black, red, yellow, and white paint comprise the PRS’ quaternary color scheme. PRS pictographs were occasionally painted on elevated surfaces and shelter ceilings—as is the case for the Red Beene shelter mural—and thus required the use of scaffolding. As scaffolding was both resource and time intensive, PRS rock art was not merely the results of creative impulse; rather, it functioned as a socially sanctioned, culturally salient event. The nature of the ontogenesis of PRS remains unresolved as various theories forward external development, transmission, and adaption of PRS while others maintain the plausibility of in-situ evolution as evidenced by the breadth of PRS morphological variability. Mesoamerican archeologist J. Charles Kelley theorizes that PRS emerged within the Pecos region as an artistic cult responding to cultural pressures from Mesoamerica (*Rock Art of the Lower Pecos*). Shaffer, while also championing internal development, suggests that stylistic affinities between Mesoamerican and Lower Pecos rock art arise from differential adaptive responses to a common desert culture base (*Rock Art of the Lower Pecos*). The latest rock art scholarship forwards that the emergence of PRS was largely the result of in-situ development to climate change-induced ritual intensification and regionalization that coincided with frequent flooding of the Pecos River (Perttula).

Social Function of Pecos River Style

The byproduct of a unified regional cosmology, PRS exhibits a redundant thematic and stylistic canon across the Lower Pecos that suggests a shared ritualistic mode of execution (Perttula). The very invention and widespread painting of PRS pictographs suggest their cultural salience (Newcomb). Crucially, the rock art of the Lower Pecos facilitated the transfer and distribution of the region's intangible assets, constituting an alternative mode of social and ritual instruction (*Rock Art of the Lower Pecos*). Moreover, PRS realized the concretization of social and cosmological dynamics via abstract, representational forms that codified individual experiences into shared experience via a regional visual "writing" system (*Rock Art of the Lower Pecos*).

The artists of PRS assumed a paramount role in the Lower Pecos sociocultural system as both recorders of cosmological narratives and instructors of trance inducement for supernatural vision quests (*Rock Art of the Lower Pecos*). Thus, PRS not only functioned as a standardized reference of trance experience but also as a means of indoctrination through the codification of the meanings of trance-imagery. As regional populations became concentrated near scarce water resources in the Middle Archaic Period, high population densities produced a superfluity of cultural information, or scalar stress, that necessitated a novel cultural capital management system (Perttula). Thus, PRS rock art and apropos rituals likely facilitated social cooperation regarding shared ownership and use of meager resources in harsh times (Newcomb). Ultimately, it seems that PRS served to manage cultural information via the integration and standardization of cosmological and ritual knowledge in redundant stylistic and iconographic codes (Perttula).

Diagnostic Elements of Pecos River Style

PRS commonly features polychromatic and monochromatic anthromorphs and zoomorphs, typically felines and white-tailed deer, as well as abstract or ideational figures termed “enigmatics.” PRS paints were fashioned by mixing ochre, carbon, clay, and other colored mineral pigments with an organic binder such as bone marrow from deer, a yucca emulsifier, and water (*Rock Art of the Lower Pecos*). Paints were applied in liquid form with a brush crafted from sotol leaves or were applied dry using a triangular crayon (Newcomb). Well-preserved PRS panels still bear visible traces of the individual “hairs” of brush strokes, which variably create fastidious, crisp lines or violent, curving slashes across rock faces. From pragmatic execution to stylistic scheme, PRS appears a meticulous, ordered rock art tradition. Analysis of paint color stratigraphy of PRS panels has revealed a nearly universal standardized PRS chronology of paint color application. As discovered by Dr. Boyd, black paint was applied first in the overwhelming majority of documented PRS panels, followed by red paint, then yellow paint, and finally white paint (*The White Shaman Mural*). Further, ongoing rock art documentation has revealed that many of the clean, tapering lines that bound the bodies of anthropomorphs required the use of a stencil and that different colors of paint rarely overlap unless intended by the artists.

PRS Anthropomorphs appear in a wide range of sizes and color combinations with numerous accouterments including elbow and wrist adornments, atlatls, and powerbundles. Notably, the heads of PRS anthropomorphs are often stylistically deemphasized, appearing as a flat line, a small circle or square, or often missing as a result of decapitation. The minimization of the anatomical features of PRS

anthropomorphs is conspicuous as mouths, eyes, and ears are incredibly rare. PRS' abstraction of the landmarks of the human visage markedly differs from the European Renaissance's fascination with the human form and signals a prospective bias of Art History design theory.

Common PRS zoomorphs include white-tailed deer, which are commonly depicted as small, red figures with oval bodies and thin, straight legs that may have antlers, dew claws, tails, or ears. PRS deer are frequently pierced through the body with a dart and are often painted in groups or linear sequences. Felines are another recurrent PRS zoomorph customarily depicted as large figures with piloerection, claws and a long tail that curves back over their bodies.

Enigmatic figures are prevalent in PRS and include abstract, geometric shapes as well as zoomorphic and anthropomorphic confluents. The diversity of PRS enigmatics, which vary widely in size, shape, and color, suggests that this classification contains numerous stylistic schemas that codify iconographic themes. Further research regarding the iconographic import of PRS enigmatics is sorely wanting.

As a whole, PRS is a uniquely balanced, fastidious artistic tradition. As demonstrated in the subsequent chapters, PRS artists utilized the principles of repetition, interval, and complementary use of color and negative space to achieve a visually stimulating artistic style that remained salient in ritual use for thousands of years with minimal modification.

Shamanism and Altered Psychological States

Though recent rock art research suggests that many PRS anthropomorphs represent deities or supramundane figures instead of shamans, the practice of shamanism was

integral to the development and practice of Lower Pecos rock art. Seminal American rock art archaeologist Polly Schaafsma forwards that a majority of North American rock art retains shamanic origins and that shamans are responsible for the generation of art as part of their communication with the realm of the supernatural (Schaafsma). In the Lower Pecos, it is hypothesized that shamans, under the influence of hallucinogenic substances, recorded their vision quests to the Otherworld, or the realm of the divine. Ethnographic and ethnohistoric research demonstrates that shamans encounter culturally interpreted icons and images when they enter an altered psychological state and that these images comprise the basis for complex Lower Pecos rock art illustrations.

Shamanism is characterized by four essential beliefs: contact with the supernatural realm, the shaman's intermediary role between supernatural beings and humans, inspiration from animal spirit companions, and ecstatic states induced via narcotic consumption (*Rock Art of the Lower Pecos*). Throughout Mesoamerica and into the Lower Pecos region, shamans are regarded as guardians of the physical and psychic equilibrium of society. An altered state of consciousness enables the ritual death of the shaman, enabling the shaman's soul to travel into the Otherworld (*Rock Art of the Lower Pecos*). Animal spirit helpers afford a source of power to the shaman as he or she journeys to the supernatural world and forsakes the human condition. The shaman's rebirth into the realm of the supernatural entails the possession of preternatural organs as the shaman enters the womb of primeval life as a skeleton (*Rock Art of the Lower Pecos*).

The inherent association of shamanism, narcotics, and rock art reveals altered cognitive functioning as an intrinsic feature of PRS. Altered states of consciousness constitute the veritable premise, context, and medium of PRS which bears significant

implications for stylistic analyses of PRS panels. The cognitive aspects of rock art production warrant further research to determine the influence of somatic hallucination, entoptic imagery, and the emotional effects of altered psychology on the conception, creation, and consumption of PRS.

As shamanism and hallucination are almost universally inclusive, shamans frequently induce trance-like states via the consumption of hallucinogenic plants, fasting, self-hypnosis, rhythmic drumming and bloodletting to enter the Otherworld (*Rock Art of the Lower Pecos*). Trance is a measurable biological state in which the activity of the posterior superior parietal lobe—the area of the brain that produces spatial and orientational awareness—is dramatically reduced. Interestingly, the posterior superior parietal lobe regulates a sense of “self” such that the suppressed function of this part of the brain induces a sensation that one is infinite and entwined with the matrix of the universe (*Rock Art of the Lower Pecos*). PRS, in addition to the world’s collection of shamanic-derived rock art, thus constitutes an especially efficacious and emotive means by which to convey culturally relative existentialist experience.

The application of cognitive neuroscience research to rock art archaeology has revealed the fascinating universality of entoptic phenomenon, or phosphenes, that result from the excitation of the central nervous system by narcotic ingestion (*Rock Art of the Lower Pecos*). These visual precepts manifest as grids, circles, wavy lines, crosses, and other geometric shapes that shimmer, rotate, or graduate in the field of vision of the shaman. Such visual hallucinations of entoptic phenomenon include culturally subjective, iconic imagery in the latter stages of trance experience. California archaeologist Thomas Blackburn was the first researcher to use ethnography and cognitive neuroscience data in

archaeological research while Amerindian archaeologist Reichel-Dolmatoff championed the seminal hypothesis linking entoptic phenomenon with artistic expression. As a result of such pioneering interdisciplinary research, archaeology now recognizes that widely disseminated rock art motifs often bear an uncanny semblance to phosphene images, particularly in art associated with ritual utilization of narcotics (*Rock Art of the Lower Pecos*).

Lewis-Williams and Dowson forward an instructive neuropsychological model that typifies the ecstatic experience of shamans and illuminates the processes of conception, production, and consumption of PRS (Lewis-Williams). In the early stages of trance, geometric forms appear as static visual images. The geometric forms are then replicated, integrated, disintegrated, superimposed, and rotated until they are assembled into culturally meaningful mental images (Lewis-Williams). The entoptic forms then comprise an abstract backdrop as cultural icons dominate the field of vision.

Experimental and ethnographic data suggests that crenulated lines morph into serpents that surround the subject as a vortex or portal emerges and swallows the subject, shuttling them towards a blinding light. Sensations of falling or flying with the generation of complex imagery denote the shaman's entry into the supernatural realm in which the shaman's body becomes dismembered. The shaman is then merged with an animal and ritually killed, often via impalement with a spear, to ensure the completion of the transformation. Ultimately, sensations of transformation, serpent imagery, and passage through a vortex demonstrate that the shaman's experience and the resulting rock art creations contain pragmatic knowledge regarding neurophysiology as well as mystic information concerning a culture's cosmology (*The White Shaman Mural*).

Peyote, or *Lophophora williamsii*, was the prime biological hallucinogen used by the artists of PRS to produce altered states of consciousness (Carod-Artal). A round, spineless, blue-green cactus with over sixty different hallucinogenic alkaloids, peyote was widely used by the Lower Pecos people for its therapeutic and vision-inducing properties (“Medicinal and Hallucinogenic Plants...”). The geographic range of peyote spans from the Texas borderlands to central Mexico. Peyote grows in shallow soils and swells after rain, becoming visible above the surface of the ground (*The White Shaman Mural*). Peyotism, or the ritual use of peyote, appeared around 5,000 years ago in northern Mexico. In prehistoric times, aboriginal groups traveled annually to the canyonlands of the Lower Pecos to harvest peyote for ritual use as part of the yearly rebirth of the cosmos (*The White Shaman Mural*). As from its trance-inducing qualities, liquid extracted from the peyote cactus can treat snakebites, scorpion stings, and skin lesions due to an alkaloid with antibacterial properties (Carod-Artal).

An alkaloid of the phenylethylamine family, mescaline produces the hallucinogenic properties of peyote. Peyote buttons are typically dried and either chewed or incorporated into a drink. Thirty minutes after ingestion, peyote produces sympathomimetic symptoms, nausea, and vomiting. Visual hallucinations and altered psychology then ensue for at least six hours during which subjects experience colorful phosphenes, lose their sense of self, and perceive culturally-meaningful imagery.

Peyote ceremonies remain an important social rite of the Huichol, who travel annually from Sierra Madre to the sacred site of peyote in Potosi, named Wirikuta, to reenact the pilgrimage of the ancestors and communicate with the supernatural realm (*The White Shaman Mural*). The Huichol pilgrimage includes spiritual purification,

promise of abstinence, and the shooting of the peyote cactus with an arrow. The Huichol “hunt” the peyote to ensure the perpetuation of time and creation. A studied understanding of the cosmology and iconography of PRS requires a familiarity with the cosmologies of peyote-using peoples which begins with an overview of Mesoamerican cosmology and, finally, with an investigation of Huichol cosmology.

Mesoamerican Belief System and Huichol Cosmology

Five themes comprise the pre-Columbian Mesoamerican conceptual universe: cyclical time as a sacred entity, the defined spatial organization of the cosmos into the sky, earth, and underworld, the conflict of the supernatural and the secular, the innate dualism of all life forms, and the potent symbolism of oral and written language. Mesoamerican societies believed that the human body housed at least two souls. The first, *tonalli*, was considered to retain solar origin and to connect humans to their gods. The second, *yolia*, was thought to reside in the heart and escape upon death to the afterlife. As professed by Dr. Boyd in *The White Shaman Mural*, pre-Columbian Mesoamerican cultural practices are only truly understood when one recognizes the dichotomization of the cosmos into a balanced organization of oppositional counterparts. The intrinsic conflicts of day with its light and dark elements and the night with its hot and cold elements serve as prime conceptual models for Mesoamerican myths where day or warmth is associated with the color red and night or cold with the color black. Boyd posits that many of the PRS panels contain elements that are “strikingly similar to not only Huichol creation stories, but to those of other Southern Uto-Aztecan-speaking peoples” (*The White Shaman Mural* 57). The mythology of the Huichol—a Native American people of unknown origin residing in the Sierra Madre Occidental of

northwestern Mexico—proves singularly germane to stylistic and iconographic PRS research.

Two seminal Huichol creation stories likely represented in the rock art of the Lower Pecos include the Birth of the Sun and the Birth of Peyote. The Huichol are considered the authoritative origin for understanding pre-Hispanic Mesoamerican belief systems as their iconography sustains Mesoamerican pictorial codas representative of the ceremonial peyote hunt. The Birth of Peyote describes the self-sacrifice of a deer named Tamatsi Parietsika who leads various animals, the first ancestors of humans, on a pilgrimage through the underworld to a mountain where the sun would rise and illuminate the darkness. In finding his spiritual being, Tamatsi Parietsika shot a deer, who was himself, and morphed into *hikuli*, the sacred peyote cactus. When the other pilgrims consumed the meat of the deer, they transformed into deities (*The White Shaman Mural*). The Birth of the Sun narrative describes the sacrifice of a crippled orphan boy who threw himself, at the exact moment that Tamatsi Parietsika killed himself, into a fire in the west. After five days of descending through the underworld, the orphan boy emerged through a cave entrance as a solar deity, the Sun Father (*The White Shaman Mural*). On an annual basis, the Huichol reenact the peyote pilgrimage, with a shaman heading an expedition to Wirikuta, as if it were the initial, original event to ensure the perpetuation of the universe. The peyote pilgrimage includes a rite of purification to secure the unity of the pilgrims in which individuals confess their transgressions and ultimately metamorphosize into divine beings: the original Ancestors.

A studied familiarity with Mesoamerican cosmological iconography proves essential to the succeeding chapters' recognition of the Red Beene panel's stylistic and

iconographic schemas. A qualification of Mesoamerican and Huichol creation narratives reveals pictographic motifs of arches, serpents, anthropomorphs, and animals as iconographic referents of otherworld journey narratives. Specifically, iconographic analysis of the rock art of the Lower Pecos demonstrates a common narrative motif depicting anthropomorphic figures traversing an opening in a serpentine arch, representing the birth of the Sun god (“Shamanic Journeys into the Otherworld...”). In the Red Beene panel, the use of complementary color context and the presence of an inverted portal suggest a scene of anthropomorphic transformation representative of an otherworld journey.

CHAPTER THREE

Research Methodology

Pecos River Style (PRS) includes a remarkable breadth of stylistic variation despite a cohesive iconographic canon. Qualitative and quantitative research methodologies are employed to inventory iconographic attributes and analyze the stylistic execution of PRS in the Red Beene rock shelter panel. The Red Beene dataset consists of Shumla site documentation forms, Gigapanorama (Gigapan) images, and a Structure for Motion (SfM) 3D panel model. The Gigapans and SfM model of the site were produced by the Shumla Archaeological Research and Education Center and posted publicly on the website *Sketchfab*, an invaluable open resource enabling remote study of the rock art of the Lower Pecos. The author will overview her instructive research questions as well as relevant field and laboratory modes of documenting, recording, and analyzing rock art. Further, the author will present her analytical framework regarding a classificatory scheme of design element categories. This chapter will include demonstration of quantitative data generation via total figure classification counts and categories of identified iconographic attributes. Initial Red Beene site documentation and rock art recording was performed by the Shumla Archaeological Research and Education Center. The author, by necessity, engages with the Red Beene site vicariously, utilizing the primary data collected by Shumla to initiate a remote analysis of the stylistic and iconographic attributes of the Red Beene composition.

Research Questions & Rock Art Data Collection Methods

Stylistic analysis of the Red Beene panel involves the study of the patterned usage of common shapes, stroke direction and force, element and stroke symmetry, element orientation, color context and color scheme, perspective, and meaningful space—among many other design elements. In undertaking an analysis of the stylistic regimen of the Red Beene pictographs, the author formulated several research questions to initiate the preliminary stages of focused data generation. First, in what order were the paint colors applied in the Red Beene panel? Next, is color used stylistically in this panel? Specifically, is there evidence of stylistic use of color context? Third, what is the compositional perspective of the panel? Does it fit any compositional paradigms frequently found in European art, such as one-, two-, or three-point perspectives? What elements seem to be stylistically emphasized via the panel's composition? Finally, what is the “locus of focus” of this panel? Finally, how does style inform iconographic import and vice versa in the Red Beene panel?

In the early twentieth century, archaeologists employed various “low-technology” methods such as physical tracing, free-hand scale copying, and photography to record and document historic and prehistoric rock art. Manual transcription of rock art panels remains germane to contemporary rock art documentation methodologies as it affords archaeologists an intimate understanding of the morphology of the artist's stroke, the chronology of paint application, and the relationships of elements within the composition. Over the past decade, Shumla has curated a cohort of standard field and laboratory rock art documentation procedures that emphasize holistic and comprehensive archaeological data collection. The author is personally acquainted with Shumla's rock art

documentation methodology as she participated in the baseline recording process for numerous Lower Pecos rock art shelters during her time as a Shumla intern. The “Shumla Method”, which was used by Shumla staff archaeologists to collate the primary Red Beene site data, is subsequently described in order to contextualize rock art pictographs as a feature of their local setting.

Data collation begins as soon as one approaches the archaeological site. Geophysical and ecological settings are carefully noted as well as the manner of entrance to the site, the topography of the locale, and the overall size of the rock shelter. With this context in mind, the archaeologist beholds the rock art panel, observing the bounds of the composition, the viewshed, and the panel’s orientation. Next, the archaeologist strolls the length of the site, looking for cultural material and archaeological features while surveying the art in greater detail. Per the Shumla method, the “start” and “end” of the rock art composition are identified, and the number of “panels” defined. If necessary, large panels are divided into sections to facilitate Gigapanorama (Gigapan) documentation. Photogrammetry documentation includes Gigapan, Structure for Motion (SfM) 3D modeling, General Panel Photography, and feature and context photography. Shumla utilizes several digital forms for field data entry such as the TexSite Form and Rock Art Site Form. The “Site Narrative” and “Iconographic Inventory” sections prove critical components of the Rock Art Site Form, qualifying the iconographic attributes of elements in the composition while also considering the comprehensive archaeological context of the rock art. Field work ultimately entails the collection of baseline data that includes the documentation of significant motifs and elements to produce a descriptive narrative that guides the reader intuitively through the art.

The laboratory portion of rock art documentation involves the downloading, processing, organization, storage and backup of field data. Gigapans and SfMs are processed while Rock Art Site Forms and TexSite Forms receive multiple revisions and final edits. In large part, laboratory work regards fastidious remote study of rock art panels via photogrammetry data. DStretch, a software that manipulates the color space of an image and renders an enhanced, high-contrast color landscape, is applied to photos and Gigapans to enhance visibility of faint paint residue, often with the revelation of previously inconspicuous or indiscernible pictographs. Digital image manipulation has proven indispensable in rock art research as a noninvasive, remote analysis technique that has replaced the destructive use of kerosene in the twentieth century by rock art enthusiasts and archaeologists seeking to transiently enhance the visibility of pictographs for photographs.

The Red Beene Site

Identified as “Shumla Cave #4” in the 1993 George Martin report of Lower Pecos rockshelters and rock art, the Red Beene Shelter (41VV0951) is a sizeable rockshelter located along the Rio Grande River in Val Verde County (See Figure 1). Measuring approximately 70 meters from end-to-end, the Red Beene site contains two PRS pictographic panels, a panel of groove mark petroglyphs, and a burned rock midden (Shumla Archaeological Research and Education Center).



Figure 1. View of the Red Beene shelter interior facing west, upstream. Photo Credit: Shumla Archaeological Research and Education Center.

Though the exact dates of occupation of this rockshelter are undetermined, Shumla estimates an intermittent human presence from at least 2,200 B.C. to A.D. 300 (Shumla). The site's two rock art panels, accordingly, are hypothesized to date to the Middle-to-Late Archaic Period. Panel 1 resides at the center of the shelter and contains one remnant section of red paint and one unclassified red figure, as shown in Figure 2.



Figure 2. Real-color image (left) and DStretch enhanced image of red paint (right) of Panel 1. Photo Credit: Shumla Archaeological Research and Education Center.

Panel 2—the subject of this thesis—lies toward the eastern, downstream portion of the site. Significantly larger than Panel 1, Panel 2 measures 6 meters in height by 20.4 meters in length with an exposure of 232 degrees. As shown in Figure 3, the inferior register of this main pictographic panel has been heavily degraded due to natural erosion of the bedrock, though groove mark petroglyphs are still visible directly below the main panel (Shumla). Notably, Panel 2 is located approximately 7 feet off of the rockshelter floor, intimating that some form of scaffolding was used by the PRS artists. “Appendix A” shows a screen-grab image of the Red Beene Panel 2 SfM model.

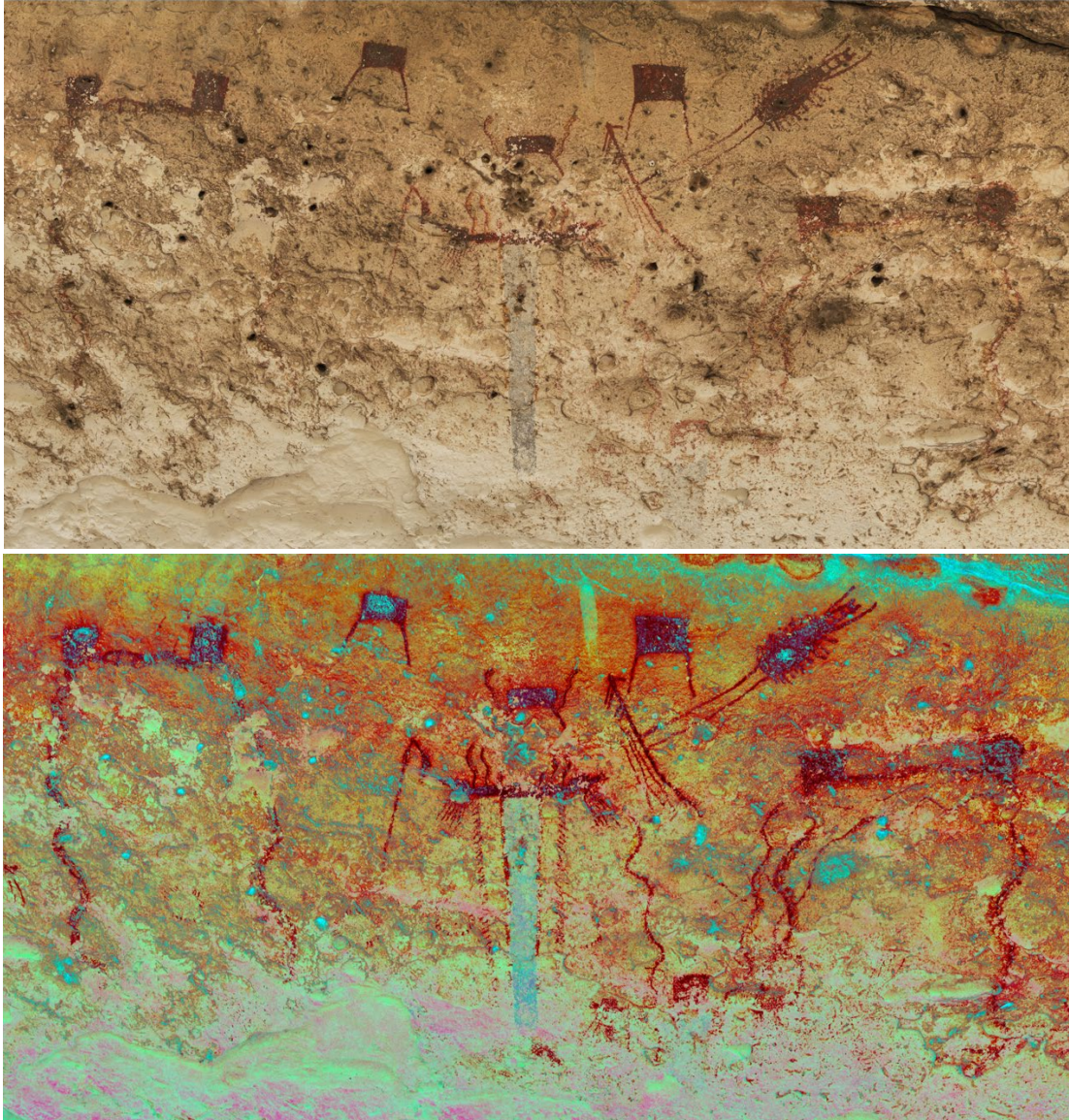


Figure 3. Red Beene Panel 2 central composition in real-color (top) and DStretch LRE channel enhancement (bottom). Photo Credit: Shumla Archaeological Research and Education Center.

Rock Art Terminology, Author Bias, and Methodological Limitations

Standardization of archaeological terminology is crucial to the generation of viable rock art data. Rock art is universally recognized as an archaeological feature due to its inherent non-portableness. A descriptive definition of “panel” proves necessary, though potentially problematic, as it foists a western abstraction of space on non-western

behavior (*Rock Art of the Lower Pecos*). This fact serves as an important reminder of the conceptualizing influence of the author's language, that linguistic categories influence perceptual judgement of art via visceral jargon, arbitrary itemization, and ethnocentric bias. However, the generation of free hand full-panel transcriptions ultimately necessitates identification of a compositional beginning and end. Accordingly, Dr. Carolyn Boyd has produced and employed the preceding definition of a rock art panel in her research: "the imagery contained within or immediately adjacent to a rock shelter, or contiguous imagery located along a cliff face with no more than four meters between painted surfaces" (*Rock Art of the Lower Pecos*). It is pertinent to note that while this definition is suited to the particular rock art styles of the Lower Pecos, it imposes a level of arbitrariness in its recognition of discrete compositional "units."

Explicit definitions of "element" and "motif" also prove vital to the collation of usable stylistic and iconographic data. Boyd defines "element" as a "single pictographic component of a rock art panel, such as an anthropomorph [or] a geometric form" and "motif" as a "recurring theme in rock art that contains two or more pictographic elements" (*Rock Art of the Lower Pecos*). For the purpose of this thesis, "figure" is defined as the classification of elements as one of several different types, such as anthropomorph or zoomorph. Ideally, unambiguous definition of elements and motifs enables distributional analysis of rock art as a composition within a rockshelter *and* as discrete visual elements within a compositional totality.

Free-hand digital transcription of the Red Beene panel constitutes a prime enterprise of the research methodology of this thesis. In approaching an accurate, systematic rendition of the rock art panel, it is apropos to consider the limitations of

remote digital transcription of prehistoric art. First, illustration of the Red Beene panel unintentionally suggests that the art exists in a void. Contextual relationships between the panel and the environment and topography are lost. The factors of direction, orientation, viewshed, and elevation are absent. It is important to recognize that cultural, ideological, and physical settings critically inform the import of art and that the significance of PRS compositions may well be a function of their locational context. With this in mind, the author attempts to strike a balance between formalism of illustration and contextualism of site data in the stylistic analysis of the Red Beene pictographs. Second, digital transcription of the Red Beene panel produces a reductive 2D image of pictographs that exist veridically on a 3D rock surface. This reduces the topographical complexity of the panel's natural "canvas" to a featureless backdrop that negates occasions for incorporation of the rock surface into the artistic composition. PRS is known to often stylistically include the natural texture of the rock face in its pictographic illustrations, compositionally incorporating the undulations of nature's enduring canvas into man's painted murals. Third, digital rendition of the Red Beene panel will inevitably illustrate the PRS pictographs in intensified opacity and clarity. By its very nature, digital illustration favors high opacity, high resolution feedback that may produce strokes and in-fill that appears garishly conspicuous when juxtaposed with the present, time-worn state of the Red Beene panel.

Ultimately, however, it is the objective of the author to depict the Red Beene panel as it may have looked upon completion some several millennia ago. Time and various chemical and biological agents of deterioration have resulted in areas of pigment loss within the panel and have covered the PRS pictographs in a layer of accretion that

has significantly dulled the vibrance of the composition's colors. Accordingly, a moderate degree of informed conjecture and artistic liberty is necessitated to approximate the original hue, saturation, and tone of the panel's paints. Finally, an unavoidable limitation of remote rock art analysis regards the confounding factor of photographic and digital display color distortion. Computer monitor color calibration can improve RGB color accuracy, but remote color reproduction will inevitably prove imprecise due to color distortion in the photogrammetry data. Gigapans, for instance, are not immune to the whims of differential levels of exposure, ambient illumination, and the constraints of photographic equipment. In order to address these various limitations of digital transcription, illustration and concomitant analysis of the Red Beene panel will emphasize the use of "Site Narrative" data to contextualize the panel within the landscape. Additionally, the SfM 3D model of the Red Beene panel, produced by Shumla and posted publicly on the website *Sketchfab*, will be referenced throughout the illustration and stylistic analysis of the panel to afford depth data regarding the topography of the rock surface (Appendix A).

Iconographic, Stylistic, and Design Element Categories

This thesis largely regards a formal feature analysis of the Red Beene panel. As outlined by Boyd in *The White Shaman Mural*, feature analysis includes a fastidious documentation of panel elements. Free hand illustration not only elicits an appreciation of compositional content, but also affords a sensitivity to patterns and idiosyncrasies within a single panel and across a rock art style. Each pictographic element is inventoried, studied for iconographic attributes, and digitally rendered. Ethnographic review and formulation of hypotheses commences once the panel has been fully rendered and

inventoried. This next research step involves the identification of similar archaeological and ethnographic cultural patterns that comprise recurring rock art themes. Upon the generation of stylistic data, the author will propose a tentative hypothesis regarding the correlation of style and iconographic motif in the Red Beene panel. Finally, the testing of hypotheses, beyond the scope of this thesis, entails the evaluation of other facets of regional material and cosmological culture through advanced ethnographic, ethnohistoric, and archaeological research.

The author's dataset includes Shumla's TexSite Form and Rock Art Site Form (RASf), real color and DStretch LRE Channel Gigapans of Panel 2, and a SfM 3D model of Panel 2. This thesis' qualitative research methodology includes the following figure classifications: anthropomorph, zoomorph, enigmatic, and unclassified. Therianthropes, anthropomorphs with animal features, are excluded from this primary classification system as animal characteristics will be qualified in the iconographic inventory of the panel. All panel elements are assigned a figure classification and the quantity of each figure type is recorded in Chapter Four. Further, every panel element will receive a standardized reference label consisting of the prefix "A" for anthropomorphs, "Z" for zoomorphs, "E" for enigmatics, and "U" for unclassified. This prefix will be followed by a designated element number starting from panel left and moving towards panel right such that the first anthropomorph on panel left will be labeled "A01." Table 1 illustrates the categories of classificatory figure data:

Table 1. Categories of figure classifications used to identify Red Beene Panel 2 elements.

<i>Figure Classification</i>	TOTAL COUNT	ELEMENT LABEL
Anthropomorph		
Zoomorph		
Enigmatic		
Unclassified		

A curated cohort of iconographic attributes derived from both Shumla’s own RASF “Iconographic Inventory” and extant rock art scholarship serves to collate the Red Beene’s primary iconographic data in readily consumable format. This scheme of iconographic categories reflects a broad, though hardly exhaustive, account of common iconographic attributes of North American and, specifically, PRS rock art. This iconographic inventory lists color schemes first, followed by anthropomorphic attributes, zoomorphic attributes, and finally enigmatic attributes and geometric shapes. A comprehensive iconographic inventory of the entirety of the Red Beene panel is presented in Chapter Four, as well as iconographic inventories of each individual element. “Appendix B” affords the various categories of iconographic attributes used to generate Panel 2 iconographic data.

Derived from an Art History informed perspective, analysis of the style of the Red Beene pictographs is grounded in categories of conventional “elements of design.” These categories of artistic design include line, color, shape, form, value, space, and texture. Adapted to artistic expression in the form of painted pictographs, the following categorical design tenets will guide stylistic data acquisition: morphology of stroke, color

context, color stratigraphy, location of artistic elements within the composition, spacing of elements, numerology of strokes and elements, and symmetry and rhythm of colors, lines, and forms. “Appendix C” affords a “style inventory” that lists categories of stylistic traits in expounded detail. Additional analyzed stylistic traits include comparisons of element sizes and orientations within the composition, compositional arrangement including single, bi, and poly-point perspectives, color patterning, and over- and under-stimulation via color context.

Digital Illustration Methods

The author’s digital illustration of the Red Beene panel employs a layered methodology simulating the order in which paint colors were applied by the PRS artists. This method was developed through trial and error experiments with digital transcription and with reference to the framework utilized by Boyd in her digital free-hand illustration of the White Shaman mural in her book, *The White Shaman Mural*. Via this exercise, the author seeks to assume the posture of the PRS artists to gain an experienced appreciation of the scale, precision, and nuanced stylistic schema of PRS rock art compositions.

The author’s rock art illustrations were produced via SketchBook, a free digital drawing software, and a Huion 940p digital illustration pad tablet. Only after many days of meticulous, deep-zoom examination of, and familiarity with, the panel photogrammetry was digital illustration attempted. First, a real color Gigapan image of the composition was imported into SketchBook. Using a pre-installed digital color meter computer application, RGB values of the paint colors and rock surface of the Gigapan were obtained. Determination of RGB values included the averaging of three RGB “samples” per each color. Samples were taken of areas of the panel that did not have

obvious evidence of accretion, calcium carbonate staining, or major spalling so as to ascertain an approximation of the original hue, tone, and vibrance of the paints upon their initial application. A new “layer” labeled “White Background” was added. Then, another new “layer” labeled “Rock Background” was created in *Sketchfab* with a solid in-fill consisting of the “mean” RGB value of the natural rock surface of the Red Beene panel. A new layer labeled “Black” was added and the “Rock Background” and “White Background” layers were hidden. Prior fastidious inspection of the panel via deep zoom revealed instances of conspicuous paint color superpositioning, thus enabling a confident estimation of the composition’s paint color application chronology: black was applied first, then red, then yellow, and finally white. This color chronology is confirmed in numerous other PRS compositions in the Lower Pecos. Starting on panel left and working within the “units” of elements, the black paint of the real-color Gigapan was carefully traced. This tracing process required constant reference to detailed closeups of both the real color and DStretch enhanced Gigapans. Initially, the mean RGB sample value for black was used to illustrate the panel’s black paint. However, the author found that this yielded a deep azure hue in her illustration as the increased opacity of the digital stroke exaggerated the underlying blue tint of the panel’s degraded black paint. After a consultation of germane rock art illustrations in extant archaeological scholarship, the author elected to approximate the original appearance of the black paint and crafted a darker, deeper hue of black-blue for her digital illustration. As a similarly intense black was utilized in Boyd’s illustration of the White Shaman PRS mural, the author felt comfortable with this exception to her RGB sample methodology.

After all of the panel's black paint was digitally transcribed, a new layer labeled "Red" was created while the "Black" layer was hidden. All of the red paint in the panel was traced using the mean RGB sample value for red paint. This process was repeated for the "Yellow" and "White" layers. By hiding and revealing the appropriate layers, "color maps" of the panel were produced on the natural rock background, the solid mean RGB "rock" background, and the white background. These color maps—black, red, yellow, and white—illustrate the chronological application and independent placement of the paint colors in the panel, ultimately affording a spatial awareness of the use of color in the Red Beene composition. Finally, as shown in Chapter Four, all the layers are revealed on the natural or artificial rock background, generating the final, complete illustration of the Red Beene composition.

The succeeding chapter will present the author's original visual content including color maps of the Red Beene panel and the final digital illustration. Quantitative and qualitative data will be accompanied by an analytical and interpretive summation of the stylistic significance of the design elements and iconographic attributes of the Red Beene composition.

CHAPTER FOUR

Stylistic Analysis & Digital Transcription

An Art History-based rock art archaeology methodology proffers a valuable supplement to iconographic research via unconventional data avenues. Stylistic analysis of the Red Beene Panel 2 utilizes disciplinary “design” categories to generate both qualitative and quantitative PRS data. First, “color maps” of each paint color are presented, representing the order of original pigment application as well as the author’s systematic treatment of the digital transcription of the panel. The final Red Beene digital illustrative transcription is presented in several reiterations including the original rock face, illustrative rock background, and a white background. Next, an iconographic inventory and description of the panel elements are presented with assignment of element labels. The author’s initial research questions, discussed in Chapter Three, the “Research Methodology” portion of this thesis, as well as several additional, emergent queries are explored and engaged. Each panel element is considered individually as an isolated illustrative unit before the compositional totality is analyzed for apparent perspective, cohesion, and rhythm.

Red Beene Color Maps and Digital Illustration of Composition

Commencement of digital transcription of the Red Beene Panel 2 necessarily requires the satisfaction of the following query: What is the color scheme and color chronology of the Red Beene panel? Customarily, PRS compositions consist of four colors: white, yellow, red, and black. Via examination of various photogrammetry data, the author concludes that the Red Beene panel indeed realizes this quaternary color

scheme. Employment of color theory per the disciplinary tenets of Art History, however, intimates a triadic color scheme. As color theory does not regard “white” as a true color and as white is used in only one of the panel’s figures, black, red, and yellow form the Red Beene’s triadic color scheme. Specifically, a triadic color scheme signifies that colors are approximately equally spaced on the color wheel and that such colors are typically quite vibrant and thus vie for visual dominance. Accordingly, this color scheme is deemed “tricky” to employ and, commonly, only one color is used dominantly while the others function as accent colors. In the Red Beene panel, two colors, red and yellow, vie for dominance while black serves as an accent color.

Fastidious inspection of the real-color Gigapan of the panel yielded several conspicuous instances of paint color stratigraphy, revealing the ordered application of paint colors during the composition’s initial conception several millennia ago. The locations of each noted instance of paint color overlap within the Red Beene panel are indicated in Figure 4.



Figure 4. Location of clear paint color stratigraphy within Panel 2. The panel left circle indicates an instance of yellow paint overlying red paint. The center circle indicates an instance of yellow paint overlying black paint while the panel right circle notes the superpositioning of red paint over black paint.

Figure 5 presents obvious evidence of yellow paint overlying red paint on the panel left, descending polychromatic sinuous line of the panel left box-line combination enigmatic, E01.



Figure 5. Real-color Panel 2 Gigapan close-up of yellow paint overlying red paint on E01.

Next, Figure 6 demonstrates the superpositioning of yellow paint over black paint towards the inferior portion of the black censtrastyling bar of A01, the panel's central anthropomorph.

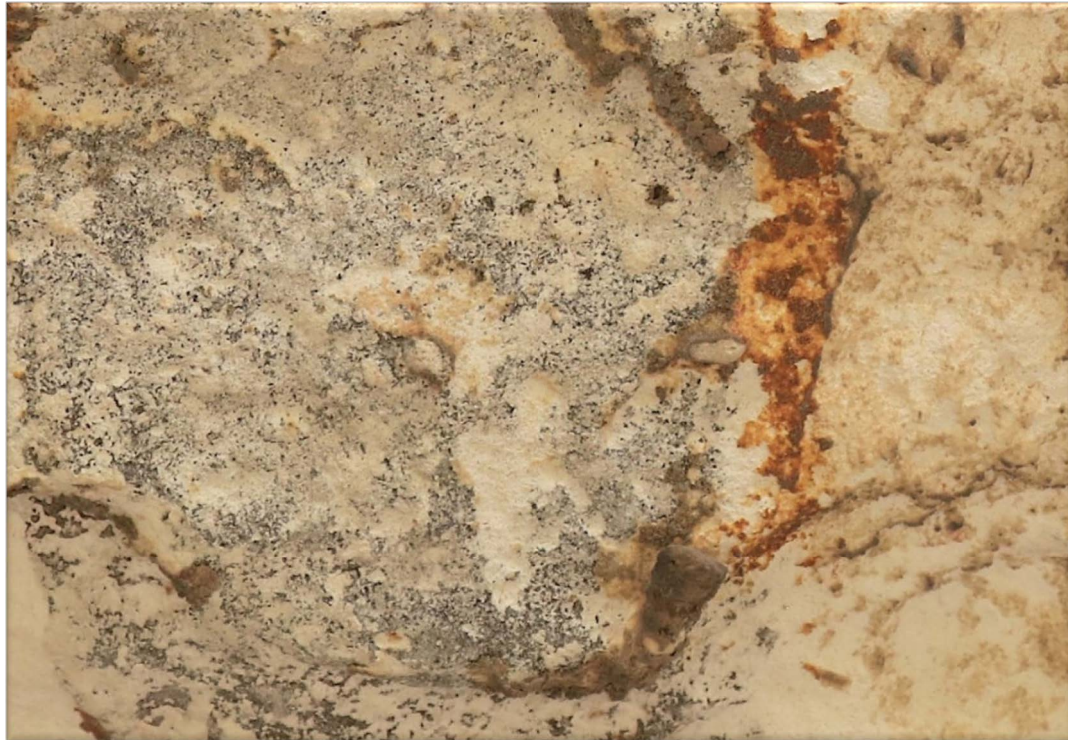


Figure 6. Real-color Panel 2 Gigapan close-up of yellow paint overlying black paint on A01.

Lastly, Figure 7 shows the application of red paint over black paint along the panel right, vertically descending polychromatic sinuous line of E10, the panel right line-box combination enigmatic.

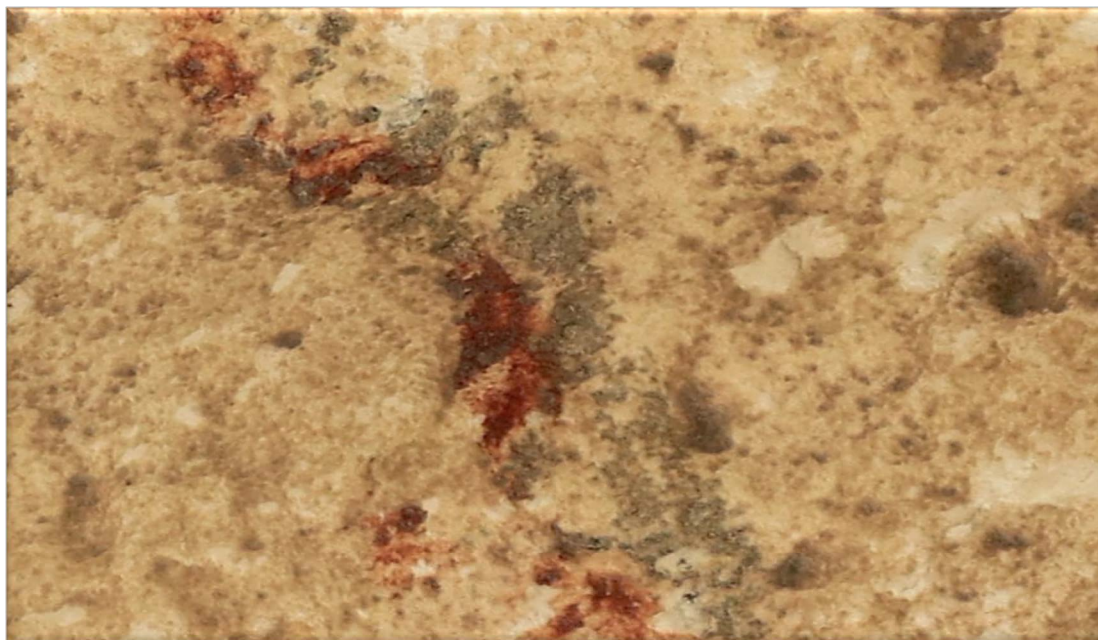


Figure 7. Real-color Panel 2 Gigapan close-up of red paint overlying black paint on E10.

Based on these three instances of clear paint color overlap, it appears that the color stratigraphy of the Red Beene panel adheres to the regional paradigm of PRS chronological paint color application forwarded by Boyd. As such, it appears that black paint was applied first in the Red Beene composition, followed by red paint, then yellow paint, and lastly white paint. Unfortunately, the white paint in the Red Beene panel, found in the outline of a small, black anthropomorph, A02, is too occluded via accretion and degradation to determine color stratigraphy remotely. Thus, in this instance, the author has elected to assume that the regional paradigm is upheld, and that white paint overlies black paint.

With confident determination of the color stratigraphy of the Red Beene panel, the exact hue, value, and chroma of the Red Beene colors, barring colorimetry limitations discussed in the “Research Methodology” chapter of this thesis, were measured and recorded using the previously described three-sample method. Table 2 affords the mean

RGB values for each color that represent the final color values used in Red Beene digital transcription.

Table 2. Mean RGB values for Panel 2 paint colors

<i>Paint Color</i>	R	G	B
Black	38	38	45
Red	131	54	46
Yellow	215	159	12
White	253	243	217

Using these mean RGB values, color maps of the Red Beene composition were rendered, mimicking the ordered application of each paint color in the panel. These color maps not only afford spatial awareness of the use of color in the Red Beene panel, but also intimate the stunning complexity of the artistic planning process for PRS compositions. Veritably, distinct color chronology suggests that PRS creations were conceived and realized in discrete planes of colors, that the style of ordered color application and color context directly informs, and is informed, by the iconography of the artists' cosmology. The implications of the use of color planes to depict depth and dimensionality in PRS compositions are evaluated in the aftermath of the author's complete digital transcription of the Red Beene panel. Figure 8 presents the digital illustration of the application of black paint that realizes the first "layer" or "plane" of the Red Beene composition. Each color map shows a paint color both on the natural,

veridical rock background of the Red Beene panel and on a white background to satisfy both formal and contextual considerations of PRS.



Figure 8. Black paint “color map” for Panel 2 on rockshelter surface (top) and white background (bottom).

Figure 9 presents the red color map of the Red Beene panel as the second color “plane” of the composition.



Figure 9. Red paint “color map” for Panel 2 on rockshelter surface (top) and white background (bottom).

Figure 10 depicts the third color “plane” of the panel with a map of the color yellow.

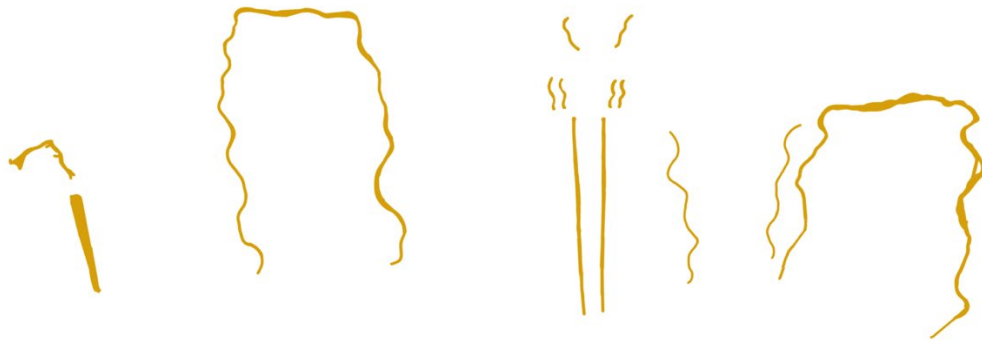


Figure 10. Yellow paint “color map” for Panel 2 on rockshelter surface (top) and white background (bottom).

Finally, Figure 11 displays the final layer of the Red Beene composition, white paint, on the natural rock background.



Figure 11. White paint “color map” for Panel 2 on rockshelter surface.

The completed Red Beene digital illustrative transcription is presented in Figures 12-14, which portray the composition in three different iterations: upon the panel’s natural rock surface, upon an artistic background mimicking rock, and on a blank white canvas.



Figure 12. Digital illustration of Red Beene Panel 2 on rockshelter wall.

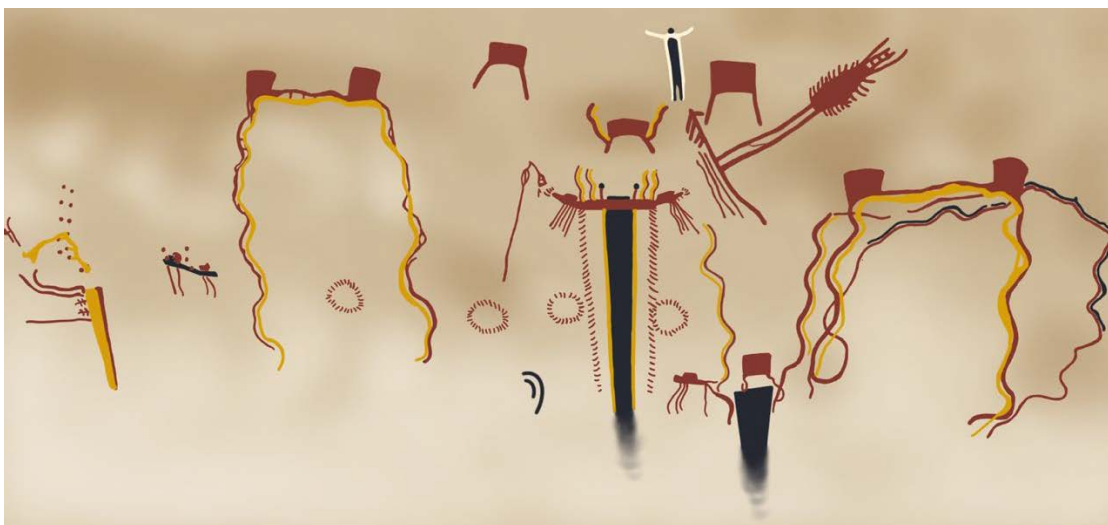


Figure 13. Illustration of Red Beene Panel 2 on abstracted, artistic background. Full-size illustration provided in “Appendix D.”

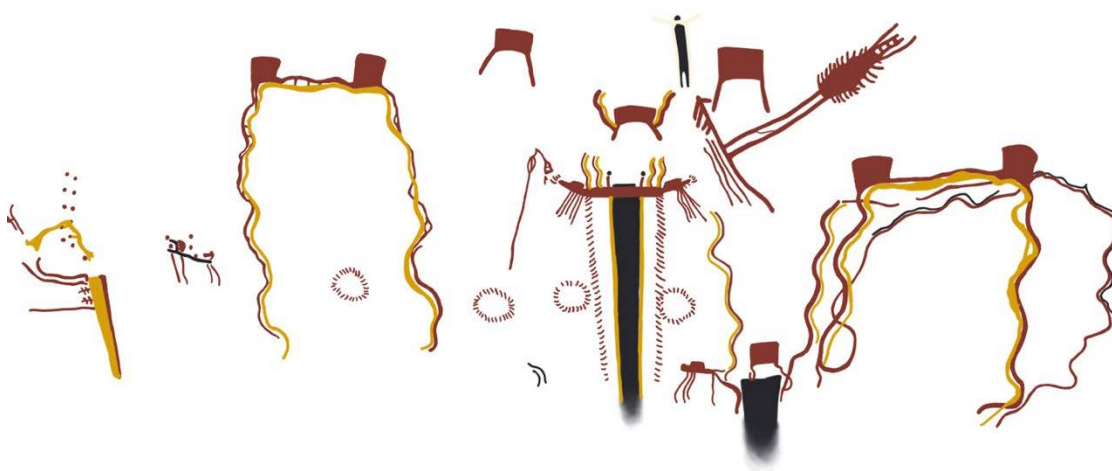


Figure 14. Illustration of Red Beene Panel 2 on white background.

The ordered viewing of the Red Beene color maps help clarify the panel's color scheme. Specifically, yellow and red are revealed as co-dominant colors, which demonstrates that, in the specific case of this panel, there is not a positive correlation between order of color application and the total area covered by that color. Black, which is applied first, does not prove to be the most prevalent color. Notably, the color red is used in every discernible figure, classified or unclassified, in the panel except for two: the remnant black concentric circles, E05, and the small black anthropomorph outlined in white, A02.

Iconographic Inventory and Element Labels

Utilizing the completed digital illustration of the Red Beene panel and data from the Shumla Rock Art Site Form, an iconographic inventory is proffered in both written and visual formats. In seeking to methodologically describe each of the panel's elements, the author has designated "panel left", the viewer's leftmost boundary of the composition, as the standard commencement point for iconographic inventory. Thusly, all narrative treatment of the Red Beene panel starts on panel left and moves systematically panel right. Figure 15 presents element label assignments and serves as a useful reference in clarifying the subsequent iconographic description. For the sake of ready visual differentiation of figure types, "Unclassified" element labels are written in green, while "Enigmatic" element labels are blue, and "Anthropomorph" element labels are red. No zoomorphs were positively identified in the Red Beene panel.

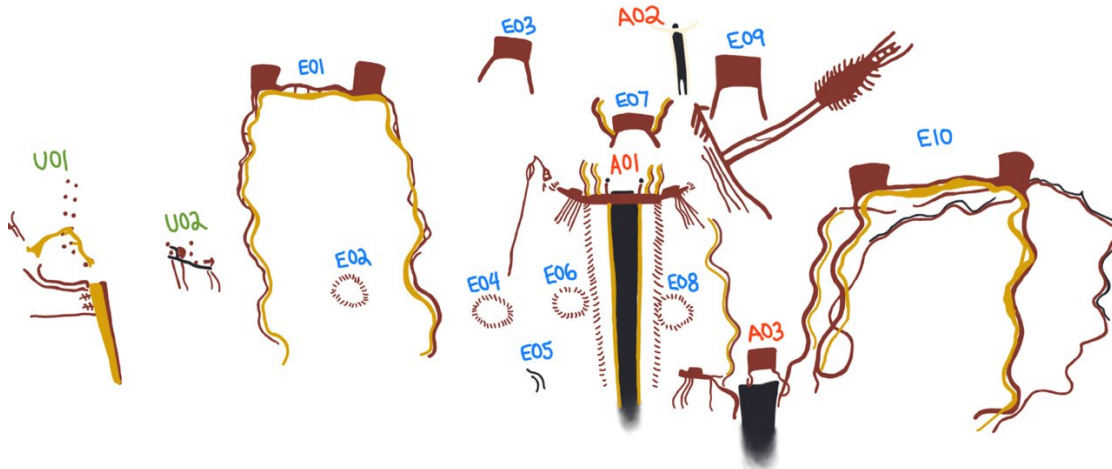


Figure 15. Red Beene Panel 2 element label assignments in green for unclassified figures, in blue for enigmatic figures, and in red for anthropomorphic figures.

The far-left periphery of the panel contains a red and yellow unclassified figure, U01, with possible speech breath in the form of red dots. This figure may be an impaled anthropomorph or zoomorph. Just right of U01, there is another unclassified figure U02, which is comprised of red dots and two sets of vertical red lines descending from a horizontal black bar, possibly a quadruped. Moving panel right, there is a red and yellow enigmatic serpentine line-box combination, E01, with a set of polychromatic, descending sinuous lines. The vertical sinuous lines of E01 encompass E02, a negative space, red circle with an outline composed of short dashes or piloerection. Towards the superior boundary of the panel and just right of E01 lies E03, a red box-with-legs. Just below E03 is E04, another red, negative space circle identical to E02. E05, just below and panel right of E04, appears to be the remnants of a set of black concentric circles. Diagonally upward and panel right of E05 is E06, a third negative space circle similar to E02 and E04. Next, a large central anthropomorph, A01, occupies the center of the composition holding a red weighted atlatl, 3 red spears, and a red staff with powerbundle that projects diagonally

upward toward panel right. This anthropomorph has elbow adornments and shoulder tassels with a flat, black head bounded by two short red “antennae” tipped with black dots. Directly above A01 is a red box-with-legs, E07, stylized with a red and yellow sinuous line projecting diagonally upward from the topmost portion of each “leg.” Just above and panel right of E07 is A02, a small, black anthropomorph with legs and a black head outlined in white with white, outstretched arms. E09, another red box-with-legs like E03, lies directly panel right of the small black anthropomorph. Moving towards the inferior portion of the panel, E08, the fourth and final negative space circle, touches the waist of A01. Just below and panel right of E08 is a degraded black anthropomorph, A03, with red arms and elbow adornments. Finally, E10, another red-yellow enigmatic serpentine line-box combination like E01, occupies the far panel right. Table 3 presents the total counts for each figure type with associated element labels.

Table 3. Total element counts per figure classification categories.

<i>Figure Classification (15 total)</i>	TOTAL COUNT	ELEMENT LABELS
Anthropomorph	3	RED; A01-A03
Zoomorph	0	N/A
Enigmatic	10	BLUE; E01-E10
Unclassified	2	GREEN; U01-U02

Research Questions: Stylistic Use of Color, Compositional Orientation, and Locus of Focus

Several research questions were developed by the author in the initial stages of this thesis: 1) What are the discernible stylistic traits of the Red Beene panel? 2) Is color

used stylistically in this panel? Specifically, is there evidence of stylistic use of color context? 3) What is the compositional orientation of the panel? Does it fit any compositional paradigms frequently found in European art, such as one-, two-, or three-point perspectives? What figures seem to be emphasized via the Red Beene compositional orientation? 4) What is the intended artistic and iconographic “locus of focus” of this panel? Does the stylistic treatment of the anthropomorphs in the Red Beene panel suggest that they are the central elements of interest, as PRS anthropomorphs are widely understood to comprise the focal subject and obsession of PRS?

In qualifying the stylistic traits of the Red Beene composition, the author elected to first examine each element individually as a discrete illustrative unit. In doing so, a microcosmic perspective is adopted that seeks to generate “intra-stylistic data” regarding stylistic traits specific to each element. Then, a macrocosmic evaluation of the composition as an artistic totality is executed that considers the stylistic relationships between elements to yield “inter-stylistic data.” Each element is subsequently presented in Figure 16 as an isolated unit for stylistic analysis following the “Stylistic Trait” criteria developed by the author and presented in “Appendix C.”



Figure 16.1. Stylistic Analysis of Red Beene Element U01

- Linear and Curvilinear stroke
- Dots/Small circles: Red
- Numerology: 13 red dots
- Polychromatic and Analogous: Red and Yellow
- Solid In-fill/Shading
- Vertical directionality
- Possible demonstration of 3-Dimensionality via color stacking of yellow in the “foreground” and red in the “background”
- Degraded condition
- Iconography: single pole ladder, speech breath



Figure 16.2. Stylistic Analysis of Red Beene Element U02

- Linear and Curvilinear stroke: Discontinuous
- Dots/Small circles: Red
- Numerology: 5 red dots
- Polychromatic: Black and Red
- Degraded condition

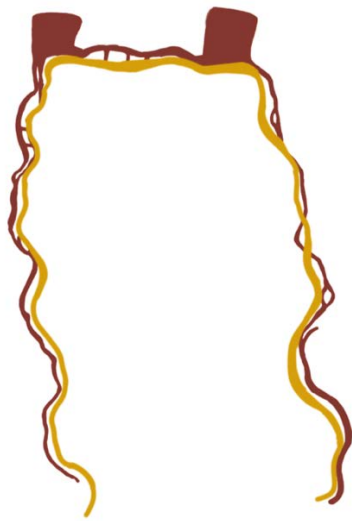


Figure 16.3. Stylistic Analysis of Red Beene Element E01

- Sinuous Stroke: Long; polychromatic
- Short Linear Stroke: Red
- Polychromatic and Analogous: Red and Yellow
- Solid In-fill/Shading
- Vertical directionality and periphery framing
- Significant Color Overlap



Figure 16.4. Stylistic Analysis of Red Beene Elements E02, E04, E06, E08

- Linear Stroke: Short
- Discontinuous Outline: Red piloerection
- Negative Space Interior
- Monochromatic: Red
- Iconography: possible portal



Figure 16.5. Stylistic Analysis of Red Beene Elements E03 & E09

- Linear Stroke
- Single Stroke “Legs”
- Solid In-fill/Shading
- Monochromatic: Red
- Iconography: possible Otherworld Journey motif



Figure 16.6. Stylistic Analysis of Red Beene Element E05

- Curvilinear Stroke: Single
- Monochromatic: Black
- Remnant

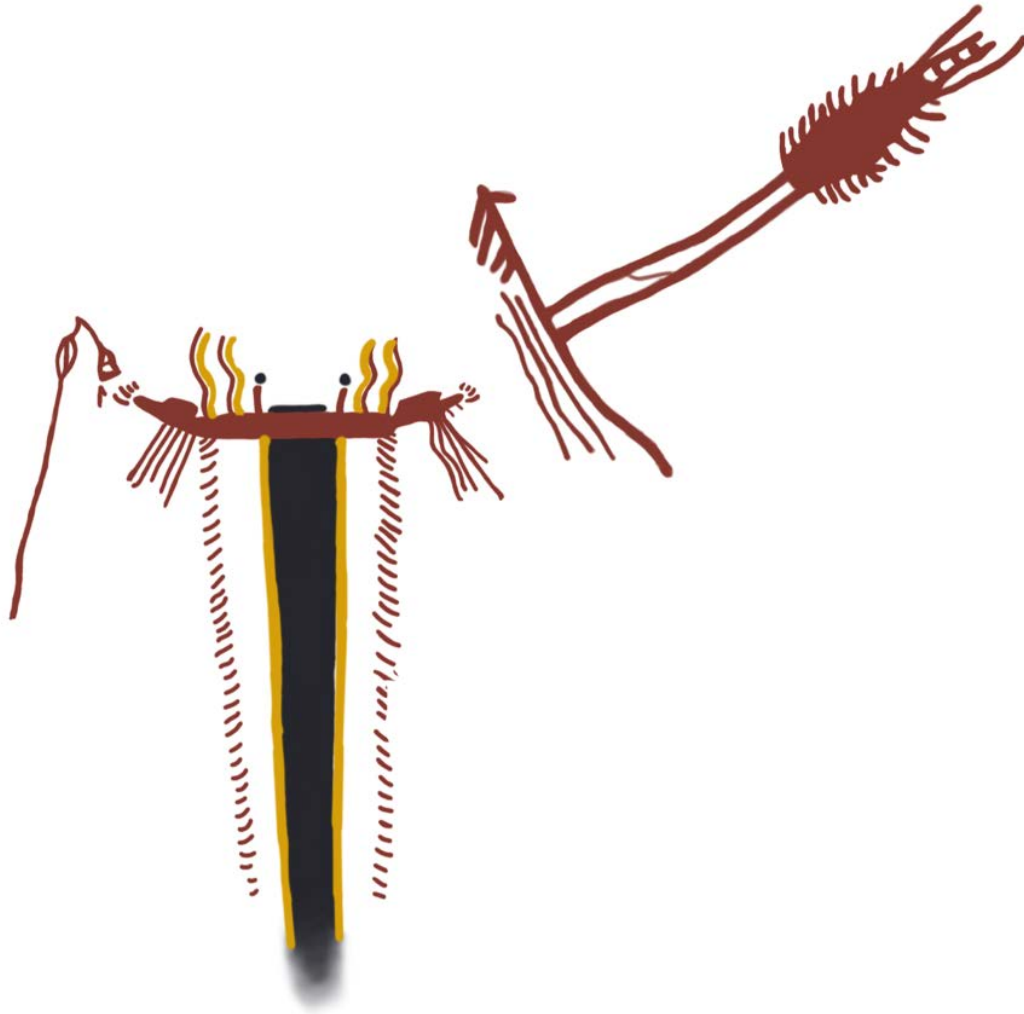


Figure 16.7. Stylistic Analysis of Red Beene Element A01

- Linear and Curvilinear Stroke: Long and short
- Polychromatic Sinuous Stroke: Panel Right Terminations
- Dots/Small circles: black
- Numerology: 6 “antennae/tassels”
- Discontinuous Outline: Red piloerection
- Panel Right and Panel Left Red Piloerection
- Solid In-fill/Shading
- Negative Space Interior
- Complementary Color Contrastingly: Black and Yellow
- Polychromatic: Black, Red, and Yellow
- Vertical directionality
- Iconography: weighted atlatl with dart, elbow adornments, stylized powerbundle, black-tipped antennae



Figure 16.8. Stylistic Analysis of Red Beene Element E07

- Linear and Sinuous Stroke
- Solid In-fill/Shading
- Polychromatic and Analogous: Red and Yellow
- Panel Right Sinuous Stroke Terminations
- Iconography: possible Otherworld Journey motif



Figure 16.9. Stylistic Analysis of Red Beene Element A02

- Linear Stroke
- Dot/Small circle: black
- Solid Outline: White
- Solid In-fill/Shading: Black
- Polychromatic and Complementary: Black and White
- Iconography: black, round head



Figure 16.10. Stylistic Analysis of Red Beene Element A03

- Linear and Curvilinear Stroke
- Solid In-fill/Shading
- Polychromatic: Black and Red
- Vertical Directionality
- Heavily Degraded/Remnant
- Iconography: Possible Otherworld Journey motif

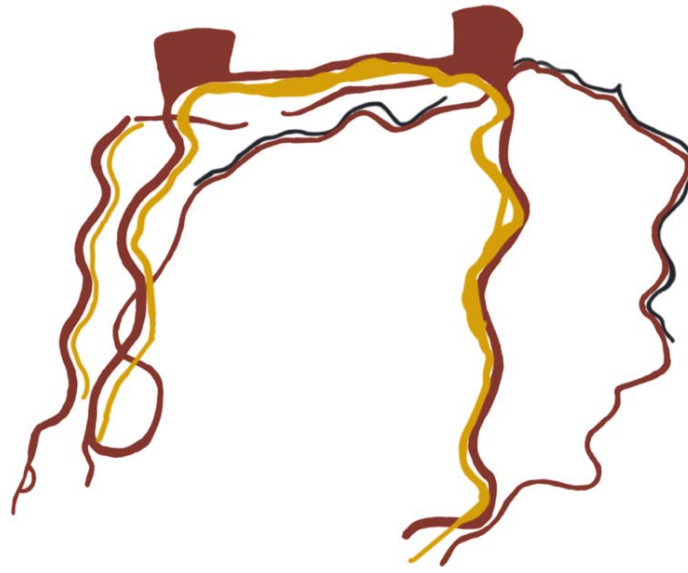


Figure 16.11. Stylistic Analysis of Red Beene Element E10

- Sinuous Stroke: Long; polychromatic
- Solid In-fill/Shading
- Polychromatic and Analogous: Black, Red, and Yellow
- Vertical directionality and periphery framing
- Significant Color Overlap

Stylistic Use of Color

Color Context refers to how color behaves in relation to other colors and shapes, that colors may be combined to make one figure appear more vibrant or duller, or that the appearance of the size of a colored element may be altered via manipulation of its color context. Determination of the prevalence of each color in the Red Beene composition reveals that red paint covers the largest surface area. Also, red paint is used in the vast majority of the panel elements, appearing in 13 of the 15 total figures. Yellow, though co-dominant in the composition, only appears in 6 of the 15 figures. Black also appears in 6 of the 15 figures but is used much more sparingly in the composition. Finally, white only appears in one of the 15 figures, A02. The Red Beene color maps and digital illustration

prove useful in recognizing the stylistic use of color—especially complementary colors—to emphasize certain elements. Following the PRS paradigm of ordered color application, the stylistic uses of black paint, then red, yellow, and white are considered. Figure 17 is presented for reference.

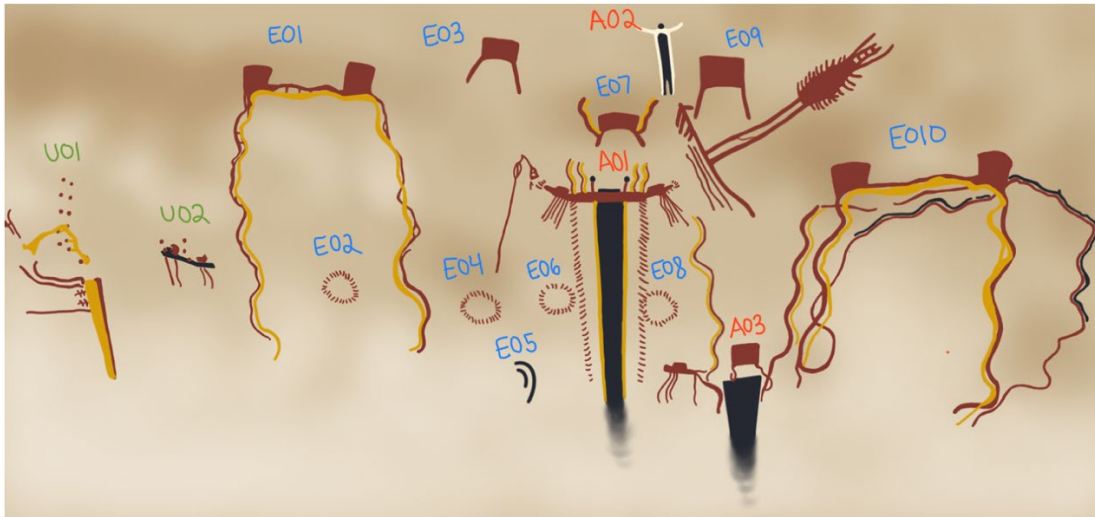


Figure 17. Digital illustration of Red Beene Panel 2 on abstracted background with element labels.

Black: The black paint is centrally located within the densest portion of the composition and flanks the superior, lateral sides of the pictograph cluster, thus defining the bounds of the panel via periphery framing and drawing the eye to the center of the panel where the black bar of the contrasty central anthropomorph, A01, provides a strong sense of vertical directionality.

Red: Red is the most prevalent color of this panel and appears predominantly above and to either side of the central anthropomorph, serving as an internal frame within the composition. Red, thus, visually complements the “locus of focus”—the large central anthropomorph.

Yellow: Yellow is often paired with red in this panel, thus creating an analogous color scheme in several of the individual figures. This analogous color scheme is particularly evident in the enigmatic red-yellow line-box combinations, E01 and E10. Interestingly, the *only* instance that yellow is paired with black appears in the large central anthropomorph, A01. A yellow line is used to outline the black bar that centrastyles the anthropomorph's body. This creates a high-contrast, complementary color context that visually emphasizes the central anthropomorph, implying, again, that this is the "locus of focus" of the panel.

White: White appears only once in the panel as the outline of a small black anthropomorph, A02. As with the color yellow, white is used to create a complementary color context, rendering an otherwise diminutive, non-contrastyled, and overall inconspicuous black anthropomorph visually stimulating. The rarity of white paint in this panel and the use of complementary color scheme intimate that this small anthropomorph retains marked significance not evidenced by its small size or "simple" execution.

In the Red Beene panel, color context appears to function not only as a stylistic instrument but also as a referent of iconographic import via PRS color iconography. Explicitly, the panel's color context seems to suggest an Otherworld Journey motif, which appears frequently in PRS rock art. As discussed by Dr. Carolyn Boyd in her book, *Rock Art of the Lower Pecos*, the Otherworld Journey motif is strongly associated with shamanism and altered state of consciousness. Mesoamerican societies and the artists of PRS held a common system of color iconography in which red signifies heat, dryness, the sun, masculinity, the earthly realm, and blood. Black, the foil to red, denotes primordial essence, wetness, cold, femininity, and otherworldliness. Yellow represents the rising sun

while white denotes the light of midday when the world is without shadow. Figure 18 shows the combination of the black and red color maps with the “white” and “yellow” layers hidden.



Figure 18. Black and red color maps of Red Beene Panel 2 demonstrate stylistic use of color context.

Red paint frames the large central anthropomorph, A01, and comprises the veritable scope and substance of the Red Beene composition. Red, taken as the hot, dry earthly realm thus surrounds and engulfs the vertical black centrastyling bar of A01, representative of cold, wet otherworldliness. This, in addition to the negative space on either side of A01's black strip which may imply a spirit-like translucence or hollowness, may intimate, via stylistic usage of color context, the rising of a shaman, deity, or otherworldly figure into the Middle Realm. Subsequent evaluation of the numerology, compositional perspective, and “locus of focus” of the Red Beene panel corroborate this hypothesis. The purposive artistic juxtapositioning of red and black paint, thus, realizes

stylistic use of color context to generate iconographic import regarding the motif of transformation in the Otherworld Journey.

Numerology

A culturally relative stylistic analysis of the Red Beene panel mandates the consideration of the stylistic use of numerology in PRS, or the study of the iconographic significance of numbers. In PRS, the number of artistic units, such as strokes or lines, within a figure and the number of repetitive figures within a composition are often purposive and suggestive of iconographic motifs. Unfortunately, remote analysis and the degraded condition of portions of the Red Beene panel preclude a detailed study of the composition's numerology. Accordingly, the author cannot test her hypothesis that elements E02, E04, E06, and E08—the red negative space circles—are comprised of the same number of short strokes.

The red dots associated with U01 are partially obscured by calcium carbonate staining, making it difficult to confidently identify the original number of dots, though it appears that thirteen red dots remain. Thirteen heavens are recognized in Aztec mythology and the Aztec calendar numbers 260 days, comprised of twenty thirteen-day “weeks” or cycles (Cartwright). As Uto-Aztec speakers, it is possible that the PRS artists painted thirteen dots in the Red Beene panel to represent the thirteen days that comprise one Aztec “week” or, alternatively, to represent the Aztec deity Texcatlipoca, who is associated with the number thirteen (Cartwright). Known as a Creator god, Tezcatlipoca was one of the supreme gods in Postclassic Period Mesoamerican culture and was revered as the bringer of both good and evil, though he was considered malevolent when associated with the number thirteen (Cartwright). Moving panel right,

there are five red dots within U02. In Huichol cosmology, the number five signifies perfect sacrifice, completion of a cycle, and the four cardinal directions plus the axis mundi (*The White Shaman Mural*).

Examination of numerology in another Red Beene figure suggests the fascinating possibility for a “good” versus “evil” motif as well as a “creation” versus “death” motif. The powerbundle of A01, the large anthropomorph, is well-preserved and ten short dashes, likely piloerection, are identifiable along each side of the distal end of the anthropomorph’s stylized powerbundle. The Aztec calendar associates the number ten with “goodness” and with Mictlantecuhtli, the preeminent god of death which all souls will meet upon their demise (Cartwright). This possible antagonism between good and evil and life and death is further implied by the numerology of the six “tassels” that surround A01’s head. In the Aztec calendar, six denotes death and evil, serving as a foil to the ten strokes on either side of A01’s powerbundle that, added together, comprise a neutral twenty associated with Xochiquetzal, the Aztec goddess of love, fertility, and arts (Cartwright).

The three anthropomorphs depicted in the Red Beene panel, A01 through A03, and the three boxes with legs, E03, E07, and E09, may connote the three levels, or tiers, of the Huichol universe: the Lower realm, Middle realm, and Upper realm. Ultimately, a stylistic analysis of numerology in the Red Beene panel produces several hypotheses regarding the iconographic import of the composition. However, these hypotheses are, at this stage, tentative and untested, requiring validation via multiple supplemental data sources and intensive ethnographic and ethnohistoric research.

Rhythm and Symmetry

Consideration of the rhythm and symmetry of artistic elements within the Red Beene panel divulges the highly organized order of the composition and intimates, via the spatial arrangement of figures, the panel's intended locus of focus. A01 occupies the approximate center of the panel and is flanked by matching enigmatic line-box combinations, E01 and E10. Three boxes with legs are located above A01 with E07, the stylized box with legs, bounded by two nearly identical conventional boxes with legs, E03 and E09. This symmetrical arrangement of boxes with legs above A01's head affirms the gravity of the composition's center. The four negative space circles, E02, E04, E06, and E08, comprise a horizontal linear series that stretches from panel left to panel right, just past the composition's center. This horizontal linearity is balanced by the vertical linearity of A01's centrastyling. Close inspection of stroke morphology reveals a distinct rhythm of sinuous lines within and between artistic elements. The short "tassels", or red and yellow sinuous lines to either side of A01's head, follow the exact same curvature, such that the two sets of lines are identical, rather than mirror images. This is an interesting exception in the Red Beene composition as, elsewhere in the panel, right and left attributes of figures tend to be "reversed". The mirrored curvature of the diagonal red and yellow sinuous lines projecting from E07, the middle box with legs, as well as the "reversed" piloerection that forms the body outline of A01 afford prime exemplars of the panel's mirror-image paradigm. From a stylistic standpoint, the variation of stroke morphology in A01 is puzzling and likely indicative of the iconographic salience of A01 in the Red Beene composition.

Red Beene Compositional Perspective

The compositional perspective of the Red Beene panel is subsequently described using traditional paradigms in Art History, many of which derive from Renaissance Period artwork. Several compositional perspectives have traditionally dominated European art: one-, two-, three-, and four-point perspectives, perceptual perspectives, and aerial or atmospheric perspective. Figure 19 affords an example of one-point, or vanishing, perspective in a fresco entitled “School of Athens” painted by Raphael between 1509 and 1511.

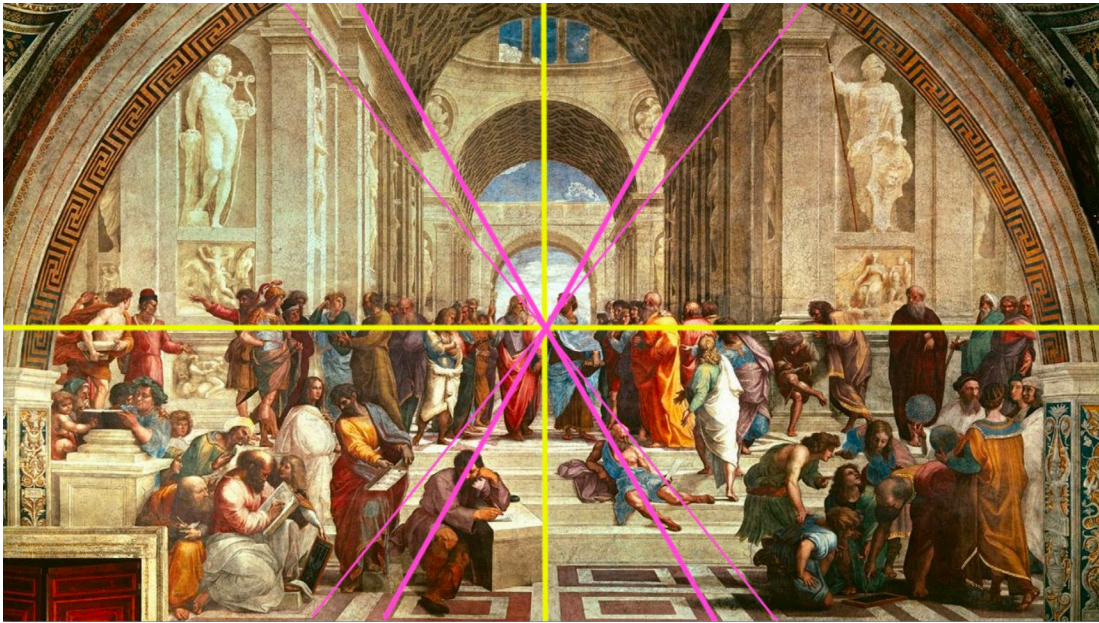


Figure 19. “School of Athens” painted by Raphael demonstrates use of one-point vanishing perspective. Image Credits: *Raphael Paintings.org*

Figure 20 applies this compositional perspective to the Red Beene panel, revealing a near-perfect alignment of the panel’s figures to compositional paradigm. Figure 21 shows the various groupings of the panel’s elements according to the one-point vanishing perspective.



Figure 20. One-point vanishing perspective lines applied to the Red Beene Panel 2.

Via this compositional perspective, the three boxes-with-legs, E03, E07, and E09, create an inverted triangle-shape that funnels the viewer's focus downwards to the large anthropomorph, A01, as shown in Figure 21. The anthropomorph's powerbundle and atlatl mirror the diagonal convergent lines while the large serpentine line-box combinations, E01 and E10, occupy the negative space to either side.



Figure 21. Grouping of Red Beene Panel 2 elements according to one-point vanishing perspective.

This compositional perspective implies the essential gravity of the large anthropomorph, that all elements are aligned according to its axis, that it orchestrates the order of the Red Beene composition. This one-point perspective also suggests an implied compositional depth, that A01 may reside deeper “within” the composition than the other, more “superficial” elements that reside “closer” to the viewer. The fact that the central anthropomorph may well occupy the panel’s “vanishing point” bears fascinating implications for differential artistic modes of perceiving and expressing 3D space in 2D planes. First, the stylization of depth and space via implication, rather than explicit illustration, challenges dominant Eurocentric modes of depicting perspective and distance in visual art. Second, the hypothesis of implied compositional depth prompts a concomitant investigation of the possible association of color planes and 3-dimensionality, that each paint color may represent a different level of depth, or 3D space, within PRS compositions. As such, black paint may signify the greatest depth or

“distance” from viewer and white paint the least distance from the viewer. Third, consideration of implied 3D space in 2D planes merits evaluation of the significance of the rock surface as its own “plane” or compositional layer. Perhaps PRS artists perceived the rock surface as its own entity, as a barrier separating them from their painted pictographs on the “other side”. PRS compositions frequently depict cosmological narratives and the act of painting supramundane figures veritably revitalizes them in visually comprehensible form. As such, it is possible that the PRS artists recognized the vitality of their artistic creations as animated characters on the other side of the rock surface looking outward into the world and meeting our gaze. Thus, the rock surface may function as the translucent veil separating the divine from the mortal. Additional ethnographic and ethnohistoric iconographic research is needed to evaluate the association of artistic animation, stylistic implication of depth, and color planes within PRS compositions.

Style and Iconography in Box-with-Legs Motif

A closer examination of the Red Beene’s prominent box with legs motif, depicted in Figure 22, yields fascinating intimation of the panel’s intended locus of focus. The two boxes-with-legs, E03 and E09, that appear on either side of the large anthropomorph, A01, are conventional without special stylizations. However, the middle box-with-legs, E07, directly above the head of A01 features diagonally oriented red and yellow sinuous lines that project from the top of each “leg”, mirroring the red and yellow sinuous lines that frame A01’s head. Via stroke morphology and color context, an essential association between this middle box-with-legs and the central anthropomorph is visually emphasized, suggesting a shared stylistic, and likely iconographic, property between the two figures.

Moreover, close examination of the terminations of the red and yellow sinuous lines on both E07 and A01 reveals that the end of each sinuous line is purposively curved towards panel right.

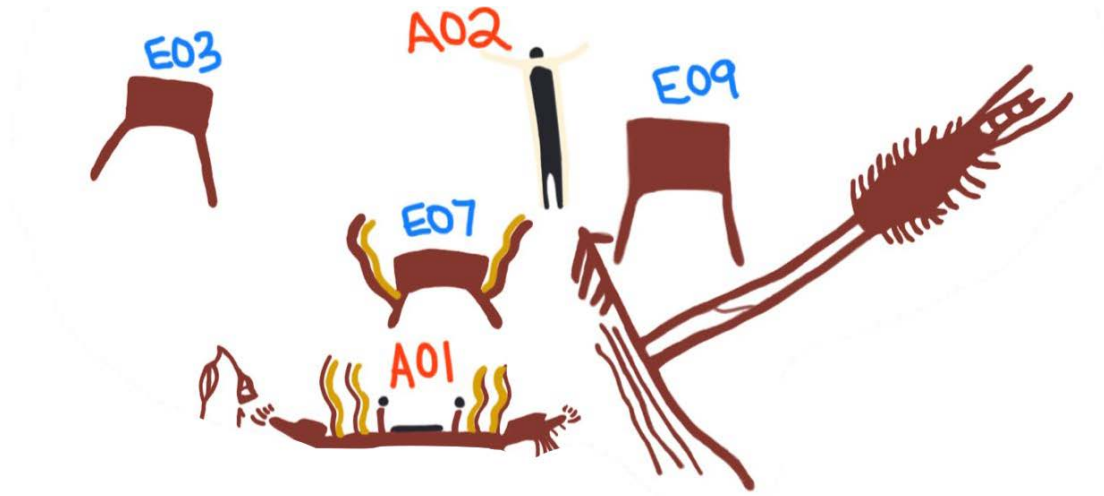


Figure 22. Detailed view of Panel 2 box-with-legs motif in superior panel register.

Figure 23 shows the curving terminations of E07 in greater detail with an especially conspicuous bending of the element's superior termination on the panel left, diagonal red and yellow sinuous line.



Figure 23. Close-zoom image of curving terminations on E07, the middle box-with-legs.

Notably, just panel right of these sinuous lines is the red staff of A01, which points upwards in the opposite direction, towards panel left, of the panel right curving terminations of A01 and E01. Figure 24 illustrates the overlay of a series of hypothetical linear projections from each curving termination of E07 and A01 as well as from the staff of A01. These linear projections overlap at the exact location of the small black anthropomorph, A02.



Figure 24. Overlay of linear projections from curving terminations on E07 and from A01's staff, overlapping at the location of A02.

Thus, via directionality of stroke and linear suggestion, the eye of the beholder is drawn to the small black anthropomorph. As intimated previously by color iconography, A02 appears once again to be emphasized in the Red Beene composition, indicating the centrality of its iconographic import in this panel. The fact that A02 has a circular, black head also denotes its iconographic significance as the Huichol typically depict their deities with black faces. Given the limitations of remote analysis and the diminutive size of A02's head, it is unknown if facial features are depicted. Nonetheless, A02's black head suggests that the figure retains *iyari*, the divine soul of the Huichol Ancestors.

Implications of Stylistic Data and Next Steps

Realization of the collaborative potential of Art History stylistic data and rock art iconographic data yields valuable insights regarding the import of the stylistic motifs of PRS. Specifically, stylistic analyses of color scheme, color context, and compositional perspective appear to support the iconographic data that suggests that this panel depicts an Otherworld Journey scene. Common in PRS rock art, the Otherworld Journey motif

regards the entering of the spirit world or the supernatural realm via the portal of the Axis Mundi, which is often stylistically depicted as an arch or a serpent. The box-with-leg motif is a customary element of the otherworld journey in PRS, as is the inverted portal, which may be represented in the Red Beene panel as a set of downward converging polychromatic sinuous lines above A03. Further, the one-point vanishing perspective of this panel draws the eye of the viewer to A01, the seeming subject of this otherworld journey motif. The complementary pairing of yellow and black within the body of A01 also proves visually provocative, further intimating that the anthropomorph is the panel's intended locus of focus. Consideration of Mesoamerican color iconography provides additional evidence for the Otherworld Journey motif, as yellow paint touching black paint may represent the light of the earthly sun shining on the primordial essence of a transformed deity. Moreover, the box-with-legs, E07, directly above A01 has red and yellow sinuous lines that are similar to the red and yellow sinuous lines that frame the anthropomorph's head, suggesting an essential association or connection between the anthropomorph and the boxes-with-legs otherworld journey motif, perhaps implying the process of the transformation of the anthropomorph as it journeys or transforms from one world or realm to the next. Finally, the black centrastyling bar of A01 exerts a strong sense of vertical directionality at the composition's center, perhaps stylistically representing the vertical movement of the anthropomorph as it ascends or descends from one world or realm into another.

In completing her stylistic analysis of the Red Beene panel, the author proposes two hypotheses, the "next step" in rock art research, concerning the iconographic meaning of the composition's pictographs. The first hypothesis regards the panel's

stylistic implication of an Otherworld Journey. Specifically, the author proposes that A01, the central anthropomorph, is depicted in the veritable act of transformation from a mortal to an ancestral deity. Per Mesoamerican color iconography, the black vertical bar that comprises the centrastyled body of A01 suggests that this figure is associated with the primordial “other realm”. A01’s black head further intimates that this figure is not mortal, as human heads are typically painted red to represent the presence of *kupuri*, the hot life force given to humans by the gods (*The White Shaman Mural*). However, though the black head of A01 implies its association with the divine, its lack of a face indicates the absence of *nierika*, or the supramundane gift of sight in Huichol cosmology, which indicates that A01 is not fully divine (*The White Shaman Mural*). The black dots on the red “antennae” to either side of A01’s head may represent *iyari*, the heart-souls of the Huichol Ancestors in the peyote cosmological creation narrative, as is frequently represented in PRS iconography as black-tipped red antlers of the Huichol Fire-Sun God (*The White Shaman Mural*). Moreover, the panel’s negative space circles may denote the junctures of the four cardinal directions and represent portals between the realms, providing further evidence that the Red Beene composition depicts an Otherworld Journey motif capturing the consequential moment of transformation of A01, which bears both mortal and divine qualities, from a mortal to a divine ancestor, or vice versa. At this inchoate stage of iconographic supposition, the “direction” of transformation, into or from the middle, earthly realm, remains unclear.

The author’s second hypothesis regarding the iconographic significance of the Red Beene panel posits that the composition realizes a dualistic, antagonistic motif between good and evil and life and death—as is frequently found in PRS transformation

scenes. Analysis of numerology within the Red Beene panel revealed that the thirteen red dots in U01 may be representative of death and evil while the five red dots in U02 may denote sacrifice or completion of a cycle. The ten piloerection strokes on either side of A01's powerbundle may connote death while the six "tassels" that flank A01's head may signify goodness and the act of creation. If these iconographic suppositions prove true, it appears that the Red Beene panel regards a narrative of transformation and dynamic conflict between creative and destructive elements within the same figure.

Ultimately, it is apparent that this PRS panel is a meticulously planned narrative composition and that its artists utilized the elements of color, line, and compositional perspective both functionally and aesthetically in this panel, that these artistic elements reinforce and perpetuate cosmological narratives, and that stylistic schemas animate and codify motifs of supramundane figures. The acquisition of these stylistic data enables the commencement of the preliminary association of stylized artistic elements with the iconography of PRS cosmology. Concomitant archaeological inquiry necessarily engages in the process of finding iconographic meaning in these data, which requires making meaning of Archaic art in the cultural, aesthetic, political, and cosmological context of its creation—certainly no simple feat, but nevertheless a scintillating prospect.

APPENDICES

APPENDIX A

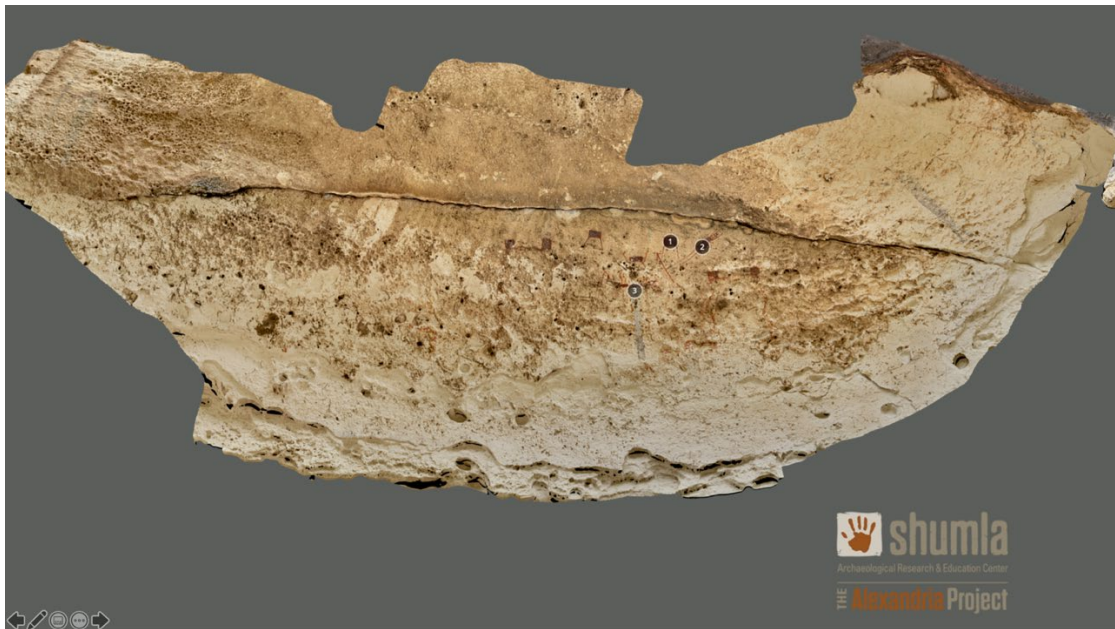


Image of the Structure for Motion (SfM) 3D photogrammetry model of the Red Beene Site Panel 2, created and published by Shumla on the website *Sketchfab*.

APPENDIX B

Categories of common iconographic attributes used to generate iconographic data from the Red Beene Site Panel 2.

<i>Iconographic Attribute</i>	YES/NO	ELEMENT LABEL & # OUT OF FIGURE TOTAL
Element(s) with Black		
Element(s) with Red		
Element(s) with Yellow		
Element(s) with White		
Contrastyled		
Profile: Front		
Profile: Side		
Full Figure		
Decapitated		
Head only		
Half bodied		
Dismembered		
Total Headdress		
Headdress: Antlers		
Headdress: Antlers with dots		
Headdress: Rabbit ear(s)		
Headdress: Other		
Mouth		
Eyes		
Other facial features		

Bent arms		
Upraised arms (>45 degrees)		
Straight out arms		
Hands		
Legs		
Feet		
Manual digits		
Pedal digits		
Paraphernalia: Simple atlatl		
Paraphernalia: Stylized atlatl		
Paraphernalia: Dart point		
Paraphernalia: Hip cluster		
Paraphernalia: Simple powerbundle		
Paraphernalia: Stylized powerbundle		
Paraphernalia: Other		
Left-Handed		
Wings		
Speech breath		
Skeletonization		
Impaled anthropomorph		
Deer		
Feline		
Avian		
Impaled zoomorph		

Conflated zoomorph		
Arch		
Portal		
Arch with Portal		
Box with Legs		
Crenulated shape		
Comb shape		
Impaled dots		
Single pole ladder		
Grid		
Zig zag		
Sinuous line		
U-shape		
Cluster Motif		

APPENDIX C

Categories of stylistic traits used to facilitate stylistic analysis of the Red Beene Site
Panel 2.

<i>Stylistic Trait</i>	YES/NO	ELEMENT TYPE
Stroke: Linear		
Stroke: Curvilinear		
Stroke: Sinuous		
Sinuous Line: Single		
Sinuous Line: Multiple		
Sinuous Line: Multiple and monochrome		
Sinuous Line: Multiple and polychrome		
Presence of Outline		
Outline Type: Solid		
Outline Type: Discontinuous		
Outline Color: Black		
Outline Color: Red		
Outline Color: Yellow		
Outline Color: White		
Outline Width: Thin		
Outline Width: Thick		
In-Fill/Shading: Solid		
In-Fill/Shading: Strokes/crosshatch/diagonal/ etc.		
Interior: Negative Space		

Element Color Scheme: Monochrome		
Element Color Scheme: Polychrome		
Element Color Context: Complementary		
Element Color Context: Analogous		
3-Dimensionality/Depth		

APPENDIX D

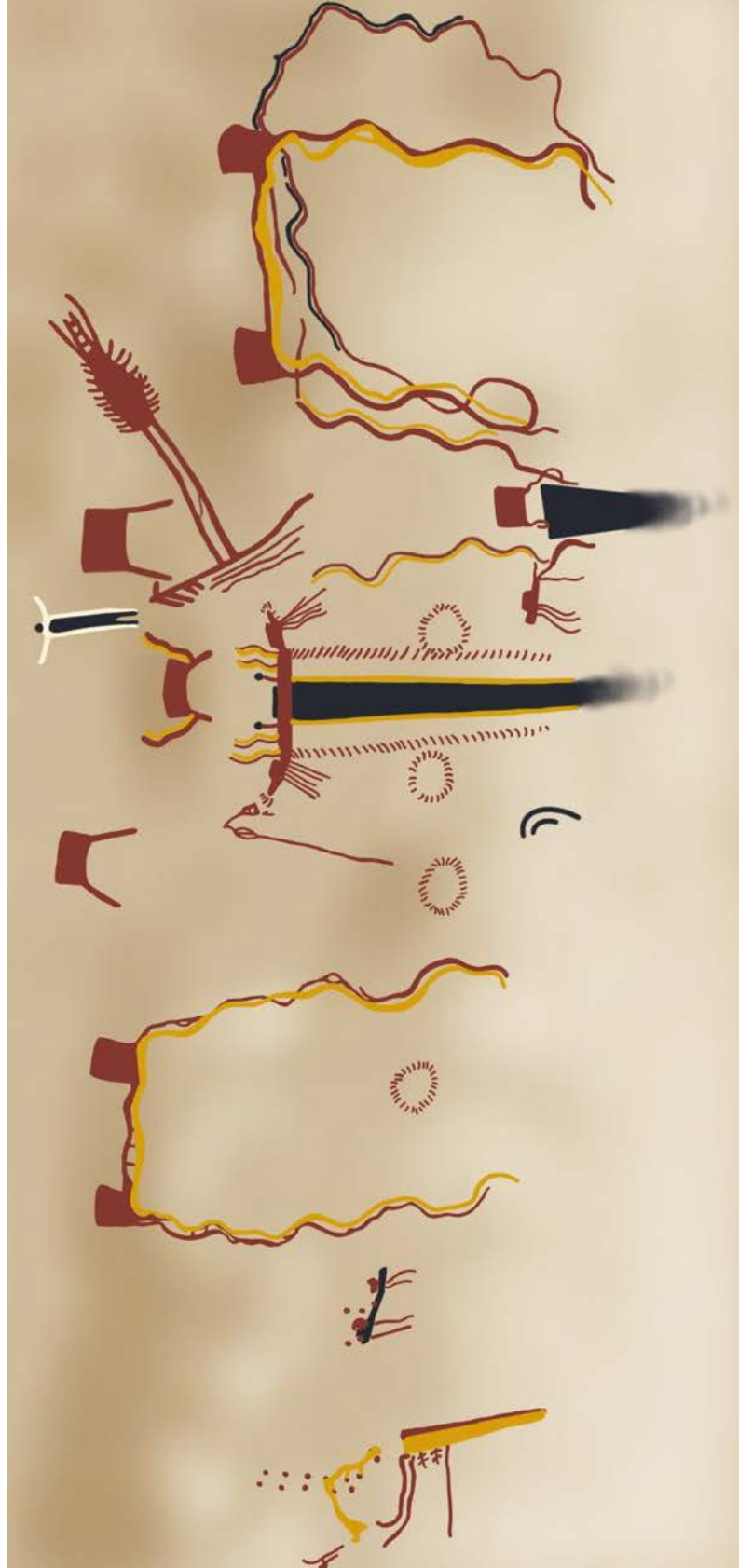


Illustration of Red Beene Panel 2 on abstracted, artistic background.

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