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Present in the Trans-Pecos rock art of west Texas are many motifs intelligible within hunter-gatherer ontological frameworks. These motifs – including human figures missing heads and limbs, figures with disproportionately large eyes, polymelia, and pilo-erection – are concerned with somatic transformations and distortions experienced in altered states of consciousness. Ethnographic analogies also demonstrate that other Trans-Pecos features – smearing, rubbing, and chipping of pigment, and incorporation of natural inequalities of the rock surfaces into images – are evidence of kinetic experiences or *embodied processes*, including the important interaction with the 'veil' that separates one tier of the cosmos from others.

By exploring the related concepts of embodiment, somatic transformation, and process within non-Western ontologies, I offer a unified but multi-component explanation for the meanings and motivations behind several Trans-Pecos rock art motifs. I also address the consumption of rock art in west Texas – how it was viewed and *used* by the original artists and subsequent viewers to shape, maintain and challenge ideologies and identities.

Trans-Pecos Texas: an illustrative case study

The eastern Trans-Pecos region of west Texas comprises approximately 80,000 sq. km (31,000 sq. miles) of the northern Chihuahuan Desert, extending from the New Mexico state boundary and the Guadalupe Mountains in the north to the Rio Grande in the south, and from the Salt Basin in Hudspeth County in the west to the Pecos River in the east (Fig. 1). Geologically, the Trans-Pecos is complex, with strata ranging from the Precambrian to the Cenozoic; there are igneous and limestone plateaus and outliers, and elevations ranging from broad desert basins (550 m or 1800 ft) to tree-clad mountain peaks (2590 m or 8500 ft) (Mallouf 2005: 220).

Fig. 1. The eastern Trans-Pecos region of west Texas delineated by the Pecos River and state boundary on the north, the Rio Grande on the south, and archaeologically defined cultural

areas – the Lower Pecos (east) and Jornada Mogollon (west). 'Trans' refers to Anglo-American pioneers crossing the Pecos from east to west. El Paso is indicated in the inset. Courtesy of Center for Big Bend Studies (CBBS), Sul Ross State University, Texas.

The rock art of the Trans-Pecos is little known (cf. Jackson 1938; Kirkland & Newcomb 1967; Mallouf 1985; 2005; 2008; Kenmotsu 2001; Cloud 2004; Hampson 2011; 2013a; 2015). Importantly for concepts of archaeological regionalism in the Greater Southwest (and beyond), however, both the eastern and western boundaries of the eastern Trans-Pecos have been defined in part according to the presence or absence of certain rock art motifs – this is one of the reasons why I chose the Trans-Pecos as a case study for my work on regionalism in 2008 and 2009.

From c. AD 1000, if not earlier (Sutherland 2006: 12; Hampson 2011; 2013a; 2015; Wiseman pers. comm.), the *western* Trans-Pecos is characterised by the well-known agriculturalist Jornada Mogollon culture and its artefacts such as pottery, pithouse villages, and, above all, rock art. Western Trans-Pecos petroglyphs and pictographs include 'mask' motifs, 'stepped-fret' and 'blanket' designs, and other evidence of Mogollon and Mesoamerican influences such as Tlaloc-esque motifs, horned serpents, and other supernatural figures (Schaafsma 1975; 1980: 183–186, 198; 1992: 60–72; 2003: 8; Plog 1997; cf. Hays-Gilpin 2011; Munson 2011: 105–106).

The borders between the western and eastern Trans-Pecos, and between the eastern Trans-Pecos and Lower Pecos regions, are of course in many ways both capricious and flexible – prehistoric inhabitants of these three culturally dynamic regions would not have considered any one of them as 'bounded'. Certainly, cultures and cultural remains occur on continuums with ill-defined bounds, and any temporal or spatial divisions drawn up today are necessarily arbitrary. In order to deal with vast amounts of information, however, researchers impose artificial divisions onto the remaining material culture that is both available and accessible (Ohl 2008: 1; Hampson 2011; 2013a; 2015). Although the main focus of this paper is the eastern Trans-Pecos, I also consider embodied rock art motifs in other regions of west Texas.

The Lower Pecos region, east of the Pecos River, is justifiably famous; it contains a vast array of colourful pictographs, mostly from the Archaic era (Kirkland & Newcomb 1967; Turpin 1994; 2004; Boyd 2003). The Pecos River style pictographs (c. 2100 – 1200 BC) include ritualistic anthropomorphs, often with elaborate paraphernalia, zoomorphs, and geometric motifs (see, e.g., Kirkland & Newcomb 1967; Turpin 1994).

Returning to the Trans-Pecos, although the rock art has until recently been overlooked, research in the last few decades has yielded evidence of indicators of ritualism, especially from the Late Archaic period (c. 1000 BC – AD 700): flexed burials with burial 'furniture'; occasional caches of dart points; an increasing number of bone, shell, and seed beads; and marine and freshwater shell pendants (Mallouf 1985: 116–127; 2005: 230; for a summary of artefacts found in the Trans-Pecos, see Kelley 1990; Cloud 2004). Some of these artefacts are found on or near mountain peaks, far from water and other crucial economic resources (Mallouf 1985: 127).

Towards the end of the Late Archaic, Mogollon groups entered the western Trans-Pecos from the northwest, bringing ceramics, agriculture, and rock art (Cloud 2004: 12; Hampson 2015). There is little evidence, however, that these innovations profoundly impacted the nomadic hunter-gatherer lifeways in the *eastern* Trans-Pecos (Mallouf 1985: 127; 2005: 239) – the Mogollon people certainly did *not* bring their distinctive rock art.[i] In the Late Prehistoric period (c. AD 700 – 1535), Jumano traders enter the region.[ii]

Apache and other Plains Athapaskans entered the Trans-Pecos in successive migratory waves from c. AD 1650, or possibly earlier (Mallouf 1999: 69–73; Cloud 2004: 5). As we shall see, although it is difficult to match specific rock art motifs with specific hunter-gatherer groups, broader patterns *can* be identified, especially after the ingress of Athapaskan peoples.

Finally, notable Historic era Spanish *entradas* include those led by Cabeza de Vaca (AD 1535), and several more until the end of the eighteenth century AD (Griffen 1969;

Kenmotsu 2001; Cloud 2004). Evidence of these *entradas* are also found in the rock art (Hampson 2015; in press).

Embodiment as a social and ritual practice

The related concepts of embodiment, somatic transformation, and process within non-Western ontological frameworks prove useful when addressing Trans-Pecos cosmologies and the significance, meanings, and motivations behind the creation of rock art there, a region which serves as an illustrative case study.

Drawing from the work of sociologist Bryan Turner (1996), Geoff Blundell (2004) summarises two important issues that have emerged in the study of the body. First, researchers have analyzed the body as a *set of social practices*:

> [T]he human body has to be constantly and systematically produced, sustained and presented in everyday life and therefore the body is best regarded as a potentiality that is realized and actualized through a variety of socially regulated activities or practices. (Blundell 2004: 76.)

The production of rock art – including several classes of motifs in the Trans-Pecos – is one such socially regulated practice.

Second, the body and manifestations of the body, including rock art motifs, are studied as *systems of signs*, as the carriers of social meaning and symbolism (Turner 1996: 26; see also Hays-Gilpin 1993).

More recently, and most importantly for the study of rock art in west Texas and elsewhere, researchers are developing and considering a third analytical issue: the body as *lived experience*, or *embodiment*. As Blundell (2004: 76) makes clear, embodiment theory – rather than study of 'the body' – emphasises the diversity of bodies as lived experience, as opposed to Foucauldian analyses that stress the body as socially inscribed. Or, put in another way (Turner 1996: xii; my emphasis), the very word 'body'

> suggests a reified object of analysis, whereas 'embodiment' more adequately captures the notion of *making and doing the work of bodies* – of becoming a body in social space.

Researchers such as Blundell, hoping to avoid limitations of revisionist approaches to rock art, have investigated the embodied role of paintings and engravings in a 'somatic past', albeit within a well-established, theoretically-informed, ritualistic framework (Blundell 2004: 76; Loubser 2010). Researchers within the broader social sciences have recently re-conceptualised 'the body' (Meskell 1999; Meskell & Joyce 2003; Blundell 2004: 76; Miracle & Boric 2008; Harris 2009; Sørensen *et al*. 2010), and, at the same time, championed data – but not in a simple empiricist way.

Phenomenological approaches and notions of embodiment have been key motivating factors in recent developments within rock art studies (e.g., Blundell 2004, Loubser 2010) and archaeology and anthropology as a whole (e.g., Meskell 1999; Meskell & Joyce 2003; Miracle & Boric 2008; Harris 2009; Sørensen *et al*. 2010).[iii]

More than fifty years ago, Merleau-Ponty's (e.g., 1962) main goal was to re-discover the perceived world with the help of philosophy, aesthetics, and art. Help was necessary because, as we know from research on altered states of consciousness (ASC), it is the role of the bodily senses not only to organise experience and constitute the physical world, but also to cover their own tracks when doing so (Baldwin 2004: 10). Merleau-Ponty's interest in art and aesthetics was one factor that indirectly spurred several archaeologists to embrace phenomenology.

Often, however, post-processual researchers have fallen into what Smith & Blundell (2004) call the "empathetic trap" when employing phenomenological and experiential approaches to rock art and archaeology, including landscape archaeology. Moreover, phenomenological and experiential approaches by themselves cannot help us discover the *meaning* of artefacts or images, which is partly why I did not stress topographical relationships when first describing the 44

Trans-Pecos rock art sites in my earlier work (Hampson 2011; 2013a). I do not however suggest that the landscape *per se* was unimportant to the groups that lived in it, and modified it. On the contrary, each painted and engraved rock art site was certainly part and parcel of a network of socially differentiated ritual locations that connected the various groups living in the west Texas environment (Turpin 1994; 2004; Boyd 1996; 2003; Keyser & Whitley 2006; Hays-Gilpin 2011).[iv]

Blundell (2004: 79–80) points out that given how readily some archaeologists have embraced phenomenology and related frameworks (e.g., Shanks & Tilley 1987; Tilley 1994; David & Wilson 1999; Ingold 2000; Hodder & Hutson 2003), it is surprising how few have considered embodiment as an analytical tool. Those studies that *have* considered embodiment tend to focus on burials (e.g., Shanks & Tilley 1987) and therefore on bodies as social objects, and avenues to ancient sexualities and "the straightforward power dynamics of the Foucauldian body politic" (Meskell 1999: 42). This objectivist perspective champions how bodies are constructed, controlled, and manipulated by institutions of power rather than how the body "is experienced and rendered meaningful" (Meskell 1999: 42). In turn, this leads to the bypassing of the "embodied individual in favour of a body which is a passive reflector of large scale social processes", or what Meskell terms the objectivist "society-in-microcosm model" (Meskell 1999: 43). Although we cannot identify the work of individual artists in the west Texas rock art sites, it is possible to avoid Foucauldian impositions and consider instead how bodies in and after ASC are 'rendered meaningful'.

Rock art, ritual, and embodiment

Despite the blurring of animal-human-material boundaries and the exaggeration of human physiological features in rock art corpuses worldwide (e.g., Pearson 2002; Whitley 2005), there are surprisingly few examples of rock art researchers employing embodiment theory as an analytical tool. Blundell's (2004) work in a region named 'Nomansland' by nineteenth-century South Africa colonists is a rare exception. Blundell (2004: 81) makes clear that the notion of embodiment allows researchers to treat rock art images as a *direct metaphorical comment on prehistoric and historic social processes*, while at the same time accepting that the artists *experienced* the images (in a

somatic sense) and did not simply intellectualise them (Blundell 2004: 81). This realization can help researchers avoid the temptation to pigeon-hole rock art in a diagrammatic representation of how society operates and putatively changes over time; the notion of embodiment allows a non-structural, yet "social", approach to rock art (Blundell 2004: 81).

Most importantly, Turner's (1996) concept of "somatic society" – individuals and societies using the body to express important personal and political concerns – offers opportunities to avoid the pitfalls of imposing ill-conceived theories wholesale on prehistoric communities. Turner (1996: 38) states that, among other things, every society is concerned with the reproduction and regulation of populations in time and space, and – most importantly for rock art studies – also with the representation or manifestation of the 'exterior' body in social space.

It is here that my use of embodiment theory diverges from Blundell's: like previous researchers (e.g., Parkington *et al.* 1986; Mazel 2009), Blundell's primary concern is how to 'use' San rock art in South Africa to write a *history* of the San and their interaction with nomadic and agriculturalist settlers. Employing the concept of somatic society, Blundell (2004: 85) demonstrates that a shaman-artist's body is "not simply a religious symbol but also a political one", which allows researchers to "bridge the dichotomy between meaning and motivation that has hampered southern African San rock art research since the 1970s".[v]

In west Texas, partly because far less is known about the precise authorship of the pictographs and petroglyphs, or about the *specific* social motivations for their production in different eras, I concentrate on ASC hallucinations and somatic transformations that are also manifest in some of – *but not all of* – the region's rock art. By employing the tools of embodiment theory, certain rock art images in west Texas can be seen as expressions of how the shamanistic (or, more broadly, animistic)[vi] world was perceived, how it *was*, and how identities were tied to physical beings and manifestations of physical beings. Importantly, as with research on shamanism and animism, embodiment theory can help us overcome the tendency

in rock art studies to treat the original image-makers as reactive viewers of their own handiwork (Blundell 2004: 88). A key point is that, once created, pictographs and petroglyphs are symbolic manifestations and powerful things in themselves; they are not mere reflections of either natural or supernatural phenomena.

Six examples of somatic transformation and other diagnostic features in the Trans-Pecos rock art corpus

Animal-human therianthropy in the Trans-Pecos rock art corpus is rare; other than Thunderbird motifs (Fig. 2) (discussed further below), possible candidates include an anthropomorph with frog-like legs, sheep and deer with human-like feet, and a lizard-like anthropomorph. Clay effigies recovered from a canyon site close to the Mexican border also demonstrate both catfish and anthropomorphic features (Madrid 1996: 8). Some Trans-Pecos anthropomorphs have horns, while others are conflated with projectile points (Hampson 2013a; 2015). In addition to these examples, there are numerous Trans-Pecos motifs exhibiting bodily transformation and other diagnostic somatic features (Hampson 2013a; 2015):

- Headless and limbless human figures.
- Skeletonised and zigzag human figures.
- Figures with exaggerated somatic features, including eyes.
- Polymelia.
- Pilo-erection.
- Vulvas and cupules.

Like the famous Barrier Canyon Style spectral figures in Utah, which have elongated bodies, undersized or missing limbs, disproportionately large eyes, and otherworldly headgear (Schaafsma 1980: 344), several human figures in the rock art of the Trans-Pecos exhibit combinations of these peculiar transformations. My work on regionalism (Hampson 2015) demonstrated that once we have accepted that there are many widespread and intelligible somatic motifs throughout west Texas that confirm the centrality of supernatural potency and associated concepts of a tiered cosmos (e.g., Loubser 2010: 190), in both prehistoric and historic knowledge systems,

we should be less surprised to encounter pictographs and petroglyphs that embody combinations of shamanistic or animistic elements. In any case, no alternative explanations for the creation of Trans-Pecos rock art have been proposed.[vii] In short, rock artists were not painting or carving what they saw in the mundane, everyday world.

Fig. 2. Thunderbird (c. 1.6m wide) at Meyers Springs.

1) Headless human figures are found in at least six Trans-Pecos sites (Hampson 2011; 2015); all of the examples illustrated below (Fig. 3) also have raised or outstretched arms; some have missing legs and/or exaggerated or emphasised fingers too. Limbless human figures with intact heads are also present in at least four sites.

Fig. 3. Headless human figure at Cuevas Amarillas. Note headdress (despite the missing head), and also 'outlined' body, missing legs, and raised arms. One of the figure's ears (c. 5 x 5 cm) has flaked off.

We know that a sense of dissociation is commonly experienced in ASC, and many societies believe in the regenerative powers of a death-like trance and subsequent rebirth (Halifax 1982: 76–77; Hedges 1983: 56; Patterson 1992: 214; Turpin 1994; Hampson *et al*. 2002: 27–28; Boyd 2003: 50, 55–56; Lewis-Williams & Pearce 2005: 118). Initiates worldwide receive "renewed organs and bones" from his or her helping spirit (Eliade 1964: 63).[viii] Harner (1973: 139; see also Boyd 2003: 61) cites an example of henbane (nightshade) intoxication and the resulting sense of dissociation and dismemberment:

> My feet were growing lighter, expanding and breaking loose from my body. Each part of my body seemed to be going off on its own. My head was growing independently larger, and I was seized with the fear that I was falling apart.

In the Lower Pecos, Kirkland & Newcomb (1967: 49, 56) found that more than 40% of what they call 'shaman figures' (in their loosely-defined second-oldest period) lacked heads, and almost 75% lacked feet or toes; in addition, they found that 37% lacked legs. Farther afield, in California and the Great Basin, there are superimposed composite motifs, including headless figures *over* Thunderbird-like images. Referring to a specific site in California, Benson & Sehgal (1987: 13) suggest that headless figures represent "death-like trance". The close proximity of this composite motif to a concentric circle design also "suggests that the shaman has been placed at the entrance of a tunnel, poised for his journey to the land of the dead" (Benson & Sehgal 1987: 13).

Missing and disembodied heads and limbs might also not be absent at all: perhaps they are understood as being simply in the spirit world *behind* the rock face veil, and seen there by those who are able to travel between tiered realms (e.g., Lewis-Williams & Dowson 1990; Whitley 2005; Hampson 2015). This may also apply to the outlined anthropomorph at Cuevas Amarillas (Fig. 3 above).

2) Skeletonised bodies and zigzag limbs

In many rock art corpuses, 'centrastyled' or X-ray styles of rock art also embody a sense of dismemberment, organ renewal, and rebirth (e.g., Halifax 1982: 76–77; Turpin 1994; Hampson *et al*. 2002: 27–28).[ix] This section, then, overlaps conceptually with the headless and limbless figures above. According to Eliade (1964: 63), to lose limbs and to "reduce oneself to the skeleton condition is equivalent to reentering the womb of this primordial life, that is, to a complete renewal, a mystical rebirth". Before new organs can be obtained, many groups' ritual specialists must gain the ability to see themselves as skeletons (Kalweit 1988). In Siberia, for instance, Buryat shamans wear tunics with depictions of ribs and sternums as a sign of their initiation (Halifax 1982: 76).

When anthropologists in the middle decades of the twentieth century asked San shamans to draw themselves, shamans did so with central zigzags (representing spinal cords) juxtaposed with additional zigzags and spirals (representing other

parts of the shamans' bodies) (Katz 1982: 235). Importantly, inner states during trance are more important to the San than external anatomical criteria. This notion echoes Aristotle's famous maxim that "the aim of art is to represent not the outward appearance of things but their inward significance".

Skeletonised or X-ray bodies are present in at least two sites in the Trans-Pecos. Anthropomorphs with zigzag limbs (arms, legs, or both) are present in at least four Trans-Pecos sites. Importantly, the zigzag arms on several smeared figures at Meyers Springs might indicate that the figures are Thunderbirds rather than anthropomorphs, or that the figures are therianthropic; again, it is hard to delineate sharp boundaries between humans and animals, especially in non-Western ontologies.[x]

3) Disproportionately large body parts and raised arms

Many figures in the Trans-Pecos rock art corpus have emphasised, exaggerated, or disproportionately large body parts. We know that feelings of attenuation derive from ASC and the sense of flight (Naranjo 1973: 180; Halifax 1980; 1982; Hedges 1985; Vitebsky 1995). Bodies and limbs appear particularly stretched or distorted when seen from above, or from a distance. Exaggerated somatic features on anthropomorphic figures include torsos, arms (Fig. 4), and, most frequently, hands and fingers. The ten sites with exaggerated digits include several illustrated above (Fig. 3) and below (Figs 5–7).

Fig. 4. Abraded human figure at Lobo site with outstretched and exaggerated arms. The circles (top) have diameters of c. 6–10 cm.

Fig. 5. Spread-eagle and headless anthropomorph (c. 40 cm tall) with exaggerated digits at Leyva Canyon. Note the pilo-erect, Thunderbird-like 'fringe' on the lower limbs; it is possible that this is an upside-down bird-like motif.

Fig. 6. Tegarden's (2005: plate 47) drawing from Indianhead shows exaggerated index finger on carved hand (far left); the finger extends upwards as a meandering zigzag line.

Fig. 7. Spread-eagle human figure at Cascade Shelter with exaggerated and smeared fingers, line from head, and penis. Colour has *not* been digitally altered.

On occasion, zoomorphs have emphasised or exaggerated somatic features too. A quadruped's tail at one site is disproportionately long, and several mountain sheep at another have over-sized heads and horns (Fig. 8). Other sheep are bicephalic (Fig. 9).

Fig. 8. from Storyteller site includes a sheep with exaggerated horns and human-like feet; the sheep is connected to a spiral motif (left centre, above the scale). Note outlined human figure with eyes, superimposed by a square-bodied deer with human-like feet (centre); disembodied antlers (right centre); coyote with spiral tail (top right); and horned and 'hooded' human figure below an open-mouthed quadruped (bottom centre). The 'hood' accentuates the figure's eyes.

Fig. 9. Bicephalic sheep from Storyteller site. Bicephalism is connected to polymelia. Also note the striped/skeletonised body.

Often, the human figures with exaggerated digits are in the spread-eagle posture: they have raised or outstretched arms and legs. Although we do not yet know the full significance of this particular somatic feature, present in at least 13 sites, it occurs throughout the Americas (e.g., Keyser & Klassen 2001: figs 8.11, 9.5, 9.9). Vastokas & Vastokas (1973: 70–71) have suggested that raised arms are connected with ritual specialists:

> [T]he rendering of the raised arm and the emphasis on gesturing hands carry a specific meaning in Algonkian pictography; the gesture is always associated with shamans. … All denote gestures of reverence, supplication or communication with the sky and more specifically to the Great Spirit, *Kitchi-Manitou.*

The Desana of Colombia also depict their centrastyled spirit beings with raised arms (Reichel-Dolmatoff 1975). A petroglyph at Blackbird Hill (Nebraska) features bird-like ritual specialists and a raised hand that "symbolizes the voice in song, strength and power" (Halifax 1982: 86). In the San Juan Anthropomorphic Style in the Southwest, too, raised arms with bent elbows and drooping hands were formerly cited as "merely a stylistic convention" (Schaafsma 1994: 57); Schaafsma now considers this posture to suggest the "lifelessness" of the trance state. Despite these interesting leads, more research is needed – especially because no other explanations have been proposed.

Exaggerated and highlighted eyes in the Trans-Pecos rock art corpus (Fig. 10) are also manifestations of ASC experiences; they are of especial significance because they unambiguously refer to the ritualistic sense of sight and preternatural vision. Ritual specialists who experience 'visions' believe that they can actually see the different levels of a tiered cosmos – which is why they claim to know, among other things, which supernatural beings inhabit them. Few people on the Plains claim to have actually seen Thunderbird, for example, but those that do are usually credited with exceptional powers of revelatory vision (Hallowell 1960: 32). Ritual specialists claim that when they are in ASC, they can see lost objects, the cause of an illness, spirit helpers, evil spirit beings, and into the past or future (Eliade 1964: 42). Indeed, although ASC affect all five senses, informants worldwide speak most about sight; preternatural sight and transcosmological travel are frequently linked (Lewis-Williams & Pearce 2005: 70).

Fig. 10. Possible eyes at Graef site. Note nested curves (bottom right). Scale bars are 10 cm. Courtesy of Centre for Big Bend Studies.

Zuni rain priests rub hallucinogenic *datura* on their eyes in order to commune with the 'Feathered Kingdom' (Schultes & Hofmann 1979; see also Pearson 2002). In South America, a priest-like Desana shaman is said to have an "interior light, a brilliant flame that shines and unveils the intimate thoughts of all people who speak to him"; this light is seen in his eyes, in his "penetrating glance" (Reichel-Dolmatoff

1971: 137). Among the South American Waiwai, the interior light is related to the ritual specialist himself: the "eye-soul [is] the small person one always sees in the other's eye" (Sullivan 1988: 244). In Colombia, a Barasana shaman spoke about his "inner seeing": "This is how the shamans travel, as they see with their thoughts and cross between the levels of the world" (Hugh-Jones 1979: 121). Farther afield, San in South Africa told Wilhelm Bleek that a shaman known for making rain was feared because "his eyes used to shine like a beast-of-prey's" (Bleek 1933: 390). Moreover, the shaman's eyes were as large as an ostrich's (Bleek 1933: 390).

In Western laboratory conditions, a man who ingested hallucinogenic mushrooms reported that he actually *became* a "disembodied eye, invisible, incorporeal, seeing but not seen" (Narby & Huxley 2001: 144). Here we see the abandonment of simile, and a more specific sense of embodiment.

Other than the petroglyphs at the Graef site, examples of highlighted and accentuated eyes in the Trans-Pecos include pictographs at Tall Rockshelter (Fig. 11), and more recent 'mask', Tlaloc-esque, and other anthropomorphic motifs at Hueco Tanks, Jaguar Cave, and Storyteller sites (Fig. 12). There are also several sites where eyes of quadrupeds are accentuated (Fig. 13).

Fig. 11. Tall Rockshelter in the Davis Mountains. Note loops and dots at top of > 5 m polychromatic vertical lines; these figures may be stylised anthropomorphs with heads and eyes. Courtesy of CBBS.

Fig. 12. Ithyphallic anthropomorph from Storyteller site. Note accentuated eyes and erect penis, both indicators of altered states.

Fig. 13. Unusual quadruped with accentuated eyes from near Fort Hancock. Note also horned serpent (to right of eyes). The right of the panel is obscured by a tree. Courtesy of J. McCulloch.

Painted and etched pebbles – dated in the Lower Pecos to c. 6000 BC and through to the Late Prehistoric period – have been recovered from strata in the Trans-Pecos in at

least five sites (Jackson 1938: 324–328; Kirkland & Newcomb 1967: 110, plates 66–68; Parsons 1986; Mock 1987; Turpin 1996; Cloud 2004; Keller 2006: 3; Mallouf 2008: 6). Several pebbles from the Trans-Pecos also include depictions of eyes (Fig. 14; see also Roberts in prep.), as do the anthropomorphic clay effigies from Bee Cave (Fig. 15; see Harrington 1928: 315; Coffin 1932: 58). Buried in rockshelters or deposited in water, these artefacts penetrated the veil between the mundane world and the underworld (cf. David 2009); their accentuated eyes may have symbolised the sense of preternatural sight. Occasionally, the ends of the pebbles or clay artefacts have been deliberately broken, so the figures appear headless – another indicator of ASC and dissociation.

Fig. 14. Ocular motifs on painted pebbles from Bee Cave. Note central vulva-like motif in the top half of the left pebble. Courtesy of NMAI and CBBS.

Fig. 15. Clay artefacts from Bee Cave. The effigy on the left is c. 12 cm tall with breasts and missing head. The right figurine is c. 7 cm tall. Note accentuated eye, painted in black. Courtesy of NMAI and CBBS.

Pebbles, like rock surfaces, were not *tabulae rasae*; they were important artefacts even before they were painted or etched. Formed as a result of geological aquatic processes, they were collected from and returned to sacred springs and other water sources (Mock 1987; David 2009). The modification of pebbles by humans – whether by adding pigment, etching, or re-shaping the pebbles – proliferated their inherent potency.[xi]

4) Polymelia, defined as the sensation of possessing extra limbs or parts of limbs, is another somatic distortion experienced in ASC and present in at least five Trans-Pecos rock art sites. There are extra fingers on handprint motifs, for example, and extra legs on zoomorphs at Meyers Springs and other sites. The extra limbs and digits are carefully drawn and clearly intentional; as with the missing heads and limbs, they are not artists' errors or a result of indecision.

5) Pilo-erection is present at Meyers Springs, Leyva Canyon (Fig. 5 above), and Cascade Shelter. Pilo-erection, when hairs stand erect due to contractions of muscle fibres, is an autonomic response controlled by the nervous system (Young 1957). Mammalian pilo-erection is used to regulate heat (the 'goose bumps' of *Homo sapiens*) and to intimidate rivals (raised bristles increase the apparent size of an animal), but pilo-erection and accompanying sweating also occur when mammals are in ASC and close to death (Young 1957; see also Hollmann 2002: 1).

In southern Africa, pilo-erection has been identified as the model of painted rock art bristles associated with images of dying antelope, therianthropes, felines, rain-animals, serpents, and other creatures (Lewis-Williams & Dowson 1989; see also Hollmann 2002). Moreover, pilo-erection is a crucial symbolic link between antelope death and the 'death' of ritual specialists as they enter ASC; the "bristling of dying antelope … was thus a model for harnessing potency for socially beneficial ends" (Hollmann 2002: 2).

Potency could also be used maliciously; like electricity, it is dangerous if not controlled (Lewis-Williams 2002: 138; Lewis-Williams & Pearce 2005: 141). In southern Africa, lion's hairs are said to grow from the back of a shaman whose potency has become uncontrollable (Bleek 1935). Similarly, an informant reporting his experience of transformation in ASC stated: "When I turn into a lion, I can feel my lion-hair growing and my teeth forming. I'm inside that lion, no longer a person." (Katz *et al.* 1997: 24.) Tactile hallucinations often begin as itching skin on the hands, legs, and back, and progress to give the sensation of sprouting wings and growing hair. Like many of the sensations of ASC, pilo-erection interacts recursively with theories of 'natural modeling' within ritualistic frameworks (Whitley 1994; Loubser 2010), and although rock art images are not simple reflections (or even 'representations') of objects in nature, many non-Western knowledge systems are nevertheless "sophisticated interweavings of acute observation of nature with subtle, multi-referent symbolism" (Hollmann 2002: 6).

I finish this section on somatic transformations by considering motifs that could also be categorised under the next sub-heading, that is *rock art as an embodied kinetic process* and as an interaction with the veil between this world and other realms.

6) Vulvas and cupules

Vulva motifs, known as vulvaforms in the northern Plains, are found throughout North America (e.g., Sundstrom 1993: 295; Keyser & Klassen 2001: 181–182, 187). In the Trans-Pecos, engraved vulva motifs are present at four sites including the recently discovered Tres Yonis (Fig. 16).

Fig. 16. Vulva motifs at Tres Yonis. Courtesy of CBBS.

As we saw earlier, categorization of rock art motifs is necessarily subjective and, because it is related to motivation and meaning, often contested. In this section, I am prompted by the formal similarities between vulva motifs and cupules to suggest that rather than solely reflecting or incorporating notions of gender (notions that are often ill-defined), both these motifs or features – and the *process* of creating them – had more to do with connecting with spirit worlds behind or within the rock face.[xii]

The two motifs or features are certainly not identical, nor were they created or used for identical reasons. Cupules – small concavities, ground or pecked into boulder or bedrock surfaces, and sometimes known simply as 'pits' – may have been used occasionally to store seeds, or, like the wider and deeper bedrock mortars, to grind plant stuffs and possibly pigment (Loubser 2005; Peel pers. comm.). Nonetheless, vulva motifs and cupules can both be seen as the result of a ritualistic interaction with the veil that separates this world from the next. The *act* of pecking or hammering, together with the repetitive and resonant sound, was (and is) meaningful to many groups worldwide. Unlike the creation of pictographs, when material is *added* to the rock, engravings involve not only interaction with the rock face veil, but also the laborious *removal* of material. The rock itself, of course, was not a meaningless support, and 'connecting' with it would have had significance, "perhaps even releasing, activating or giving form to some inherent potency within

the stone" (Lewis-Williams & Pearce 2005: 217). Similarly, Whitley *et al*. (1999) have shown that quartz hammerstones were carefully selected and used over a long period for ritualistic reasons. From a purely technical viewpoint, quartz is not the best stone for repeated percussion, but, as we know from research elsewhere (Hampson 2013b), it is considered potent by many indigenous groups.

In the far western USA, cupules were used in ceremonies that "restored the world" (Nissen & Ritter 1986: 73) and balanced natural and supernatural forces (Hedges 1976; Gillette 2002; see also Loubser 2005). Pomo groups refer to cupule-ridden boulders as 'baby rocks' (Parkman 1994), and the Luiseño produced cupules as part of their puberty rites, for either boys or girls or perhaps for both (Hedges 1976: 17). Shasta groups, on the other hand, speak of boulders with cupules being 'rain rocks' to control the weather (Hedges 1983; Parkman 1993). Tellingly, cupules are sometimes found on vertical (or near-vertical) walls in the Trans-Pecos; in these instances, they cannot have been used for storing foodstuffs. Intriguingly, at Auras Canyon in the Trans-Pecos, six rayed red lines have been added around the diameter of the cupule.

In many non-Western ontological frameworks, transcosmological travel is thought of as a journey into a womb – the neurologically generated sensation of passage through a tunnel or vortex (Lewis-Williams 2002: 175; see also Vitebsky 1995: 70). Similarly, Whitley (2005: 84, 146) has demonstrated that rock art sites (especially caves) in California were seen as symbolic vaginas; in this sense, caves, shelters, and rock art sites themselves are gendered. The Huichol also consider caves to be womb-like, with a female floor, and male walls (Furst 2006: 48–49). We must however remember that shamans were considered virile; that erections – such as those at Storyteller site (Fig. 12 above) – are associated with ASC and sleep; and, above all, that abstract concepts of 'fertility' are often vague and inappropriate in non-Western societies. If anthropologists were able to ask clay effigy-makers in west Texas why they made so-called 'goddess' figurines – as found at Auras Canyon and Bee Cave (Fig. 15 above) – or to ask etchers or painters of pebbles why so many of their artefacts appear to embody female genitalia, they would have responded with a

myth or some other explanation integral to their shamanistic and animistic ontologies, not with abstract and Western concepts of fertility (Lewis-Williams & Pearce 2005: 114). I stress again the significance of the ritualistic burial context of pebbles and clay effigies underground (e.g., Harrington 1928: 315), and also note that the utilization of the binary gender system might be inappropriate for a social analysis of hunter-gatherer societies.

Like cupules, vulva motifs are certainly 'openings'. Intriguingly, in rock art sites in the northern Plains, as in the deep caves of western Europe, vulvaforms are sometimes smeared with red pigment and incorporated into what some researchers have (vaguely) called 'birthing scenes' (e.g., Greer & Keyser 2008: fig. 1). Vulvaforms, however, are openings in the sense that rock walls 'give birth' to spirit creatures and supernatural beings through these portals (Lewis-Williams & Pearce 2005: 114): "It was to the fecundity of 'membranous' mediatory walls that … vulva motifs referred, not to 'fertility' as conceived by some in the modern Western world." There are also vulvaforms that have been 'rubbed out' (see below), perhaps by women seeking supernatural power (e.g., Greer & Keyser 2008: fig. 6).[xiii]

Finally, I suggest that the 'squid' motif found at several sites in the Trans-Pecos may have also been a variant of vulva motifs; Tegarden's (2005: 134–135) definitions do not allow for an interrogation of the polysemous and shared meanings between these motifs, or the possible overlapping motivations for their creation.[xiv] It is likely that all three varieties were concerned with penetrating fecund, potent, and mediatory rock surfaces, and interaction with different cosmological tiers.

Process and product: interactions with the rock surface

Rock art in the Trans-Pecos is the result of an embodied kinetic process, a ritualistic interaction with the veil between this and the spirit world. I argue also that – in addition to cupules and bedrock mortars (above), and incorporation of natural inequalities of the rock surface into images – several specific features and techniques are variations on this pervasive theme, albeit sometimes in ways that are not yet entirely clear. I consider four variations – handprints; superpositioning of potent

images; grooves and tally marks; rubbing, smearing, scratching, and chipping – in turn.

1) A hands-on experience: harnessing potency

Handprints and footprints seem to lie between the representational and non-representational categories of rock art; they highlight the fact that these categories are inevitably subjective. Handprints and footprints are also forms of somatic image. As Lewis-Williams & Pearce (2005: 119–120; my emphasis) make clear:

> Although the image of a hand no doubt had significance as the residue of a specific ritual and person, we argue that the *processes* of production of those images mattered a great deal…. Moreover, the paint used for making handprints was probably itself not merely a technical material, as Westerners may think of paint, but rather a powerful substance that effected or enhanced contact with the supernatural.

Handprints, present in at least 15 Trans-Pecos sites, were products of ritual actions that comprised several stages within the *chaîne opératoire*: preparation of a potent substance (pigment and binder), followed, in the case of positive handprints, by application of that substance to a hand, and pressing of the hand against a surface from and into which forms of animals and other spirit beings sprang and disappeared (Lewis-Williams 2002: 161; Loubser 2006). Rather than simply a 'signature' or some vague form of 'marking', the production of handprints and footprints was powerfully meaningful within a ritualistic framework, and probably associated with ritual touching of the rock (discussed below). With negative handprint stencils, a human hand was painted on to the wall by blowing – or, perhaps uniquely in the Trans-Pecos, by scraping soot. Thus, the hand was also blown or scraped *into* the wall or 'membrane' between this world and the next; like outlined figures and missing body parts, negative handprints *disappeared* behind the pigment and rock face.

U-shaped 'decorations' on the positive handprints at Cosmic Shelter and other sites are telling. Not only are the U-shapes entoptic motifs (Lewis-Williams & Dowson 1988), they also embody a somatic sense of 'tingling' in the hands reported by many people in ASC.[xv] Perhaps the patterns were created before pressing the hand onto the rock. If however pigment was removed from the rock face *after* the hand had been applied and withdrawn, this precise act would constitute another stage in the ritual of engaging with the veil that separated this world from the spirit world. Indeed, the precision of the 'decorations' suggests that these patterns are not the result of certain areas of pigment simply adhering to the rock more effectively than others. Similar 'decorated' handprints are found throughout the Greater Southwest (e.g., Schaafsma 1980: 119, plate 11).

Other remarkable handprints are those with missing thumbs at Meyers Springs (Kirkland & Newcomb 1967: plate 70). As in western European Palaeolithic caves, these are not representations of mutilated hands (Morley 2007). Rather, like the outlined figures and missing body parts described above, fingers (and parts of fingers) disappeared in the spirit world behind the rock face. Another somatic experience of ASC related to handprints (and footprints) is polymelia; some hands and feet have extra digits.

2) Potent pigment and superpositioning

Rock art images are powerful 'things in themselves'. Many indigenous groups consider the very pigment used to create pictographic rock art to be powerfully imbued with supernatural potency (Erlandson *et al*. 1999; Whitley 2005: 143; Robinson 2006: 236–238; Schaafsma pers. comm.). In some parts of California, the word for 'paint' was the same as the word for 'supernatural spirit' (Hann *et al*. 2005; see also Whitley 2005: 9). Also in California, red pigment was sometimes obtained from sacred quarries and hot springs – special kinds of transcosmological portals e.g., Whitley *et al.* 2005). Pigment was traded over large distances (e.g., Franklin & Bunte 1994; Whitley 2005). Hunter-gatherers in west Texas sometimes used valued deer fat and marrow to bind pigment to the rock face (Boyd 2003: 24). Animal and human blood has also been found in binders (e.g., Reese *et al*. 1996). Similarly, and

reminiscent of the smeared vulva motifs in the Plains and a smeared natural hole in the rock face at Meyers Springs, the southern African San believed that pigment 'dissolved' the rock face veil and allowed images of and from the other world to slip through. Pigment, like the rock art motifs themselves, is sometimes considered powerful in a dangerous way; as noted above, rock art, like electricity, is potentially harmful. In south-central California, for example, touching rock paintings and rubbing one's eyes was said to lead to death (Zigmond 1986). Because art 'performs', we should always ask what it can *do* (Boyd 2003: 106).

Some rock shelters acquired more and more potency as the quantity of pigment and powerful images piled up, one layer on top of another; at least 30 of the Trans-Pecos sites have some form of superpositioning. Superpositioning is clearly *not* a consequence of the lack of suitable or unadorned rock surfaces on which to paint or engrave; often, we find sites where most of the rock wall is bare, with images concentrated in a relatively small area. At sites like Tall Rockshelter (Fig. 11 above), large quantities of pigment and binder were prepared and applied to large areas and in many layers, further evidence that paintings were not idle doodles because of the time and labour required to create the art.

3) Grooves and tally marks

There are grooves and tally marks at many sites throughout North America (e.g., Keyser & Klassen 2001: 295–296). Many sites in the Trans-Pecos have grooves in relatively inaccessible places, and the sites themselves are often far from the nearest petroglyphs. I argue that grooves were not used simply for sharpening tools (cf. Sanger & Meighan 1990: 30): as with cupules, it was primarily the interaction with the world behind the rock face that mattered. Perhaps ritual abrading or incising of the rock surface transferred potency within the rock to the tool and the person using it (Keyser & Klassen 2001: 295). The same emphasis on process also applies to the production of ritualistic tally marks, which are probably connected in some way to entoptic visions (Keyser & Klassen 2001: 100–101, 295–296; see also Lewis-Williams & Blundell 1997). The simplicity of these and other geometric motifs – simple in a

narrow Western sense – is best explained by stressing *process rather than product* (e.g., Heizer & Clewlow 1973: 5; Whitley 2005: 95).[xvi]

4) Smeared, rubbed, scratched, and chipped pigment

There is little ethnographic evidence on precisely what happened to potent rock art images after they had been made, and how and by whom they were consumed or used during the final (but not necessarily finite) stage of the *chaîne opératoire*. But some images, like the 'palettes' in southern Africa, were clearly meant to be touched (Lewis-Williams 2002: 160; Lewis-Williams & Pearce 2004: 105, 181, 200; Hampson 2013b: 368; 2015; Schaafsma 2013: fig. 6.1).

Present in at least 14 Trans-Pecos sites, smeared, rubbed, scratched, and chipped patches of pigment are remnants of tactile encounters between human skin, or perhaps a specially selected lithic tool, and the rock surface veil (Fig. 17). These pervasive, active, immediate, and intimate encounters were both facilitated and accentuated by the potency in the pigment and binding agents *after* these materials had been applied to the rock. The creation of rock art was "an externalization of the individuals' sentience in an expression of motion and pigment" (Highwater 1982; see also Robinson 2006: 231). Later, touching the images on the rock surface "may have activated the *'atiswin* [potency] of entities both nearby, and in the extended environment" (Robinson 2006: 239). Additionally, by touching the images after they were made, certain members of society came into physical contact with the spirit world and its inhabitants – in this way rock art was *used*.

Fig. 17. Dotted line indicates unusual scored but unpainted ear (c. 10 cm long) at White Deer Shelter. The image is unusual because although the *act* of scratching was important in itself, most scratch marks in the Trans-Pecos are *over* pigment.

Chipping pigment (Figs 18–20) was not necessarily a form of vandalism or obliteration, regardless of which groups the original artist and subsequent 'chipper' belonged to. There is evidence in South Africa that subsequent herder and agriculturalist groups painted over or chipped earlier San art to harness its inherent

potency; subsequent groups believed that the efficacy of the hunter-gatherer art continued long after the original artists perished or migrated. For these reasons, *pace* Roberts 2005, I refer to the chipping of pigment from anthropomorphs, zoomorphs, and geometrics in the Trans-Pecos as 'ritual removal' rather than 'ritual obliteration'.

Fig. 18. 'Ritual removal' at Auras Canyon; the chipping of potent pigment from each red geometric triangle was deliberate and precise. Each triangle is c. 5 cm tall.

Fig. 19. 'Ritual removal' of pigment from anthropomorph (c. 15 cm tall) at Panther Cave in the Lower Pecos.

Fig. 20. 'Ritual removal' at Tablecloth site; the pecking of the black and white spread-eagle anthropomorph is precise and deliberate. The bowman's head is c. 1 cm in diameter.

Embodiment and consumption of rock art: acts of immersion and transference

Although I have deliberately paid little attention to *macro*-topography, the physical properties of both rock art images and of the space in which people viewed and engaged with those images are important (Tilley 1994; Bradley 2000; Janik *et al*. 2007; Loubser 2010). Until we understand these properties, we shall not fully grasp the significance of the production and consumption of rock art. Physical and kinetic properties of both image and engagement space necessarily impact the human body, through immersion, transference, and transformation (Blundell 2004: 158; Loubser 2010; Hampson 2011; 2015).

Indeed, Jannie Loubser (2010: 184–185), drawing from the secularist idioms of Lakoff & Johnson (1999), points out that humans experience space as having bounded areas, even though space in itself has no such structure. Conceptual inferences are formulated within the sensory centres of our brains – the same neural mechanisms that allow us to perceive *and to move* also create our complex conceptual systems (Lakoff & Johnson 1999: 4, 20). Loubser (2010) demonstrates that certain groups of humans (including the Blackfoot in North America and the San in southern Africa) use the body as a *culturally-mediated* microcosm – a kind of metaphorical blue-print –

of their inner and outer spaces and also of their perceptions and use of both movement and time – concepts that also intertwine with immersion and transference (see also Whitley 2008).

At many Trans-Pecos sites rock art motifs are often small and detailed, and in relatively inaccessible and cramped spaces. Similar observations in other regions have led many researchers to differentiate between 'public' and 'private' rock art (Whitley 2005). Although it is likely that some rock art sites were more 'private' than others – perhaps fewer rituals and vision-quests were conducted there, and by fewer ritual specialists than at other, more 'public' sites – I reject this binary distinction. The terms 'public' and 'private', often employed without due care, do not necessarily apply to hunter-gatherer societies (see, e.g., Bradley 2009; David 2009).

I concentrate instead on the *acts* of seeing and – through kinetic, embodied processes – actually using the images. Earlier, I discussed tactile engagements with images on the rock face. Because of the need to get close to the pictographs and petroglyphs to see them, even if people did *not* touch the rock face they became immersed in the images simply by viewing them (Blundell 2004: 167). Jamake Highwater (1982: 55), a Native American philosopher, artist, and dancer, believes that the concept of immersion is an act that goes beyond mere viewing. Immersion stems from "primal" – as opposed to Western – thinking. Drawing from Merleau-Ponty's phenomenology, Highwater (1982: 55) believes that in the Western world the

> "conceptualizing" of art into something special called "Art" produced a wide separation between commonplace experience and *specialized* forms of expression. … [Whereas for] primal peoples, on the other hand, the relationship between direct experience and expression has remained so direct and spontaneous that they usually do not possess a word for art.

Many Native Americans and other indigenous groups immerse themselves in 'art' and then transform – that is, they "know something by temporarily turning into it" (Highwater 1982: 61; Lakoff & Johnson 1999: 565; Loubser 2010: 188). This notion of

embodiment is akin to 'knowing by becoming' – a notion more easily achieved in dreaming or in other altered states. Importantly, 'knowing by becoming' can take place before, during, and after the production of rock art.

I am not suggesting that Westerners are incapable of transformation, transference or immersion; nor do I condone Highwater's (1982) implication that Western:non-Western is a strict binary opposition. Blundell (2004: 167) cites the example of Wassily Kandinsky (1866–1944), a Russian painter who suffered from synesthesia and who is sometimes called the progenitor of 'spiritual art'. Similarly, Chipp (1968: 546–548) cites the US artist Jackson Pollock:

> On the floor I am more at ease. I feel nearer, more a part of the painting, since in this way I can walk around it, work from the four sides and literally be *in* the painting. This is akin to the method of the Indian sand painters of the [American] West. … When I am *in* my painting, I'm not aware of what I'm doing. … I have no fears about making changes, destroying the image, etc., because the painting has a life of its own.

The production and consumption of rock art images in west Texas involved not only the topography of the individual sites, and small and detailed imagery, but also the neurological evidence of ASC, in which there is a blurring of body, rock art image, and identity. As with San viewers of southern African rock art, people engaging with west Texas pictographs and petroglyphs might have seen projections of themselves moving across the painted and engraved panels (Blundell 2004). Other viewers may have felt themselves merge with the images, and, in some cases, as the distinction between image and viewer eroded, "transference would have taken place and the viewers of the images would have become the images themselves" (Blundell 2004: 169). Ritual specialists standing in rock shelters and viewing the art would thus have *become* their embodied rock art motifs (Blundell 2004: 169). Put another way, the "perceived opposition between the disembodied mind and embodied experience … falls away; Subject and Self become one." (Loubser 2010: 188.)

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[i] Incipient agriculture however was probably being practised as a dietary supplement in certain portions of the eastern Trans-Pecos by AD 200 – 500, at the same time as smaller dart points appear in the archaeological record – importantly, these dart points probably represent the transition from use of the atlatl and spear to the bow and arrow (Mallouf 1999: 60; 2005: 239). This transition is also evident in the rock art (Hampson 2011; 2013a; 2015).

[ii] For more on the Late Prehistoric period, see Cloud 2004; Mallouf 2005. For more on the Jumano, and unsuccessful attempts to identify a Jumano rock art 'style', see Kelley 1986; Hickerson 1994; Kenmotsu 2001; Hampson 2011.

[iii] Phenomenology is an approach that concentrates on the study of consciousness as well as the objects of direct experience. *Pace* Whitley (2005: 149), it does not necessarily reject the application of a

scientific method to mental phenomena. Objectivism in philosophy is the belief that certain things, especially moral truths, exist independently of human knowledge or perception of them (*Oxford English Dictionary*; see also Wylie 1989; 1993).

[iv] Later, in the section on embodiment and the consumption of rock art, I stress the importance of the micro-topography of individual sites.

[v] I refer the reader to Blundell's 2004 thesis for further analysis of the relationship between South African history and rock art. Some researchers prefer the phrase 'ritual specialist' to 'shaman'; others do not.

[vi] I do not dwell here on the shamanism *vis-à-vis* animism debate in rock art research (cf. Dowson 2007; 2009; Robinson 2013), but in short consider shamanism to be a useful analytical framework that can, in some circumstances, be considered part and parcel of a broader animistic ontology (Hampson 2015).

[vii] For a rebuttal of other Great Basin hypotheses, including art-for-art's-sake and hunting magic, see Hampson (2015).

[viii] I do not of course suggest a one-to-one 'translation' of these features (cf. Hampson 2015). The efficacy of ethnographic analogies has been written about at length (see, e.g., Wylie 1982; 1985; Whitley 2005).

[ix] X-ray or centrastyled figures usually have internal body markings, whereas outlined or 'hollow-bodied' figures do not (e.g., Hampson *et al.* 2002).

[x] Thunderbird, a liminal, powerful, and cave-dwelling spirit being, is an important component of shamanistic earth-sky dualism in Plains Indian cosmologies (Ingold 2000: 279; Keyser & Klassen 2001: 34). In several ethnographic accounts – for example, the Ojibwa – thunder is the sonic incarnation of the Thunderbird (Hallowell 1960: 32). In this sense, which parallels experiences of the third and heaviest stage of ASC, thunder *is* the bird, and the Thunderbird is a "phenomenon of experience" that blurs the 'material' and the 'spiritual' (Ingold 2000: 279).

[xi] In California, there is a link between portable rock art made by malevolent shamans and springs, which were often considered inherently dangerous as well as sacred. Water spirits – like water itself – were often attributed with quixotic characteristics (Whitley 2000; David 2009; Robinson *et al.* 2010).

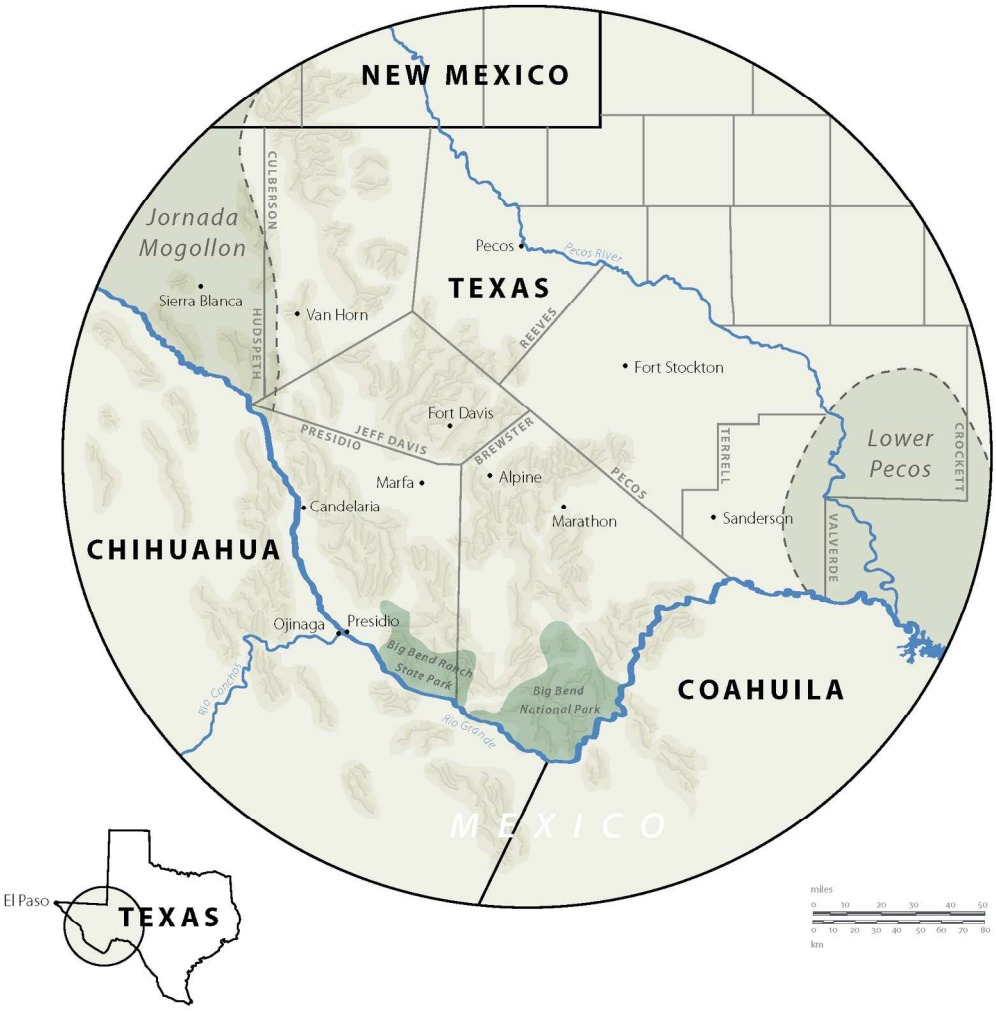
[xii] Other researchers are working on this important topic (see, e.g., Hays-Gilpin & Whitley 1998; Hays-Gilpin 2004; 2005, 2012).

[xiii] See also Sundstrom (1993; 2004) and Keyser & Klassen (2001: 177–189) on vulvaforms in the Hoofprint Tradition of the northern Plains, and Whitley (2005: 98–99) on the links between malevolent shamanism, androcentrism, and vulvaforms.

[xiv] The 'squid' motif is a formal variation of the 'shumla' motif, an image that resembles a projectile point, but which often conflates projectile points with human figures (Tegarden 2005; Hampson 2011; 2013a; 2015).

[xv] See also Lewis-Williams & Dowson (1988: 210) for reports by nineteenth-century San shamans.

[xvi] At Columbia Plateau sites to the north of Texas, painted tally marks were associated with shamanistic vision questing in both prehistoric and historic contexts. Early informants reported that the marks enumerated spirit helpers and, sometimes, days spent fasting at a particular site in order to experience ASC and enter the spirit world (Keyser & Klassen 2001: 100–101, 296).



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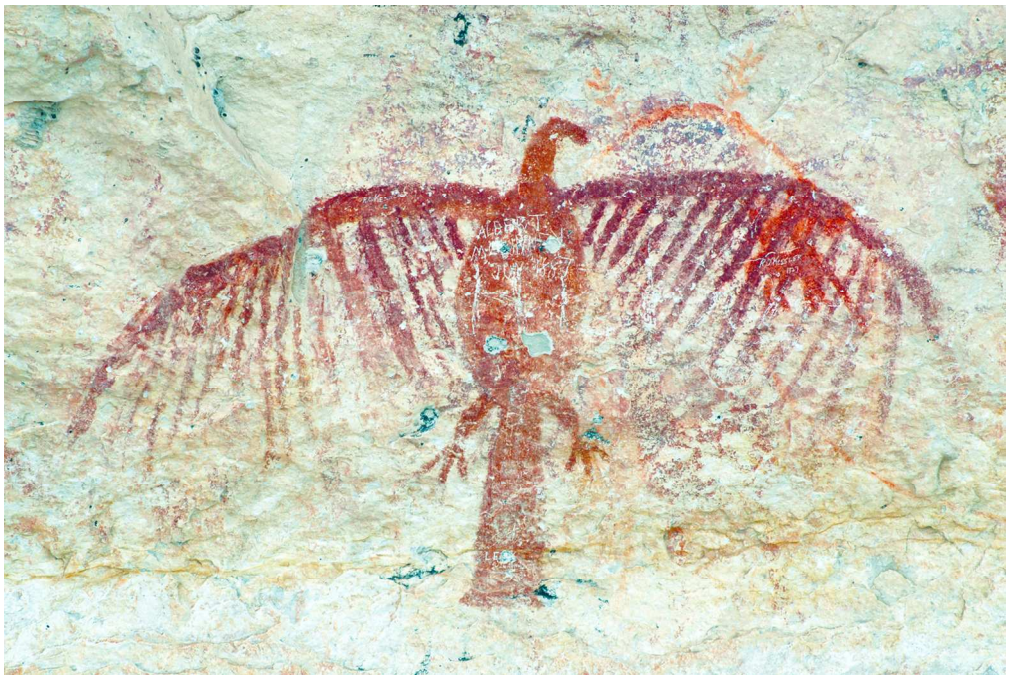

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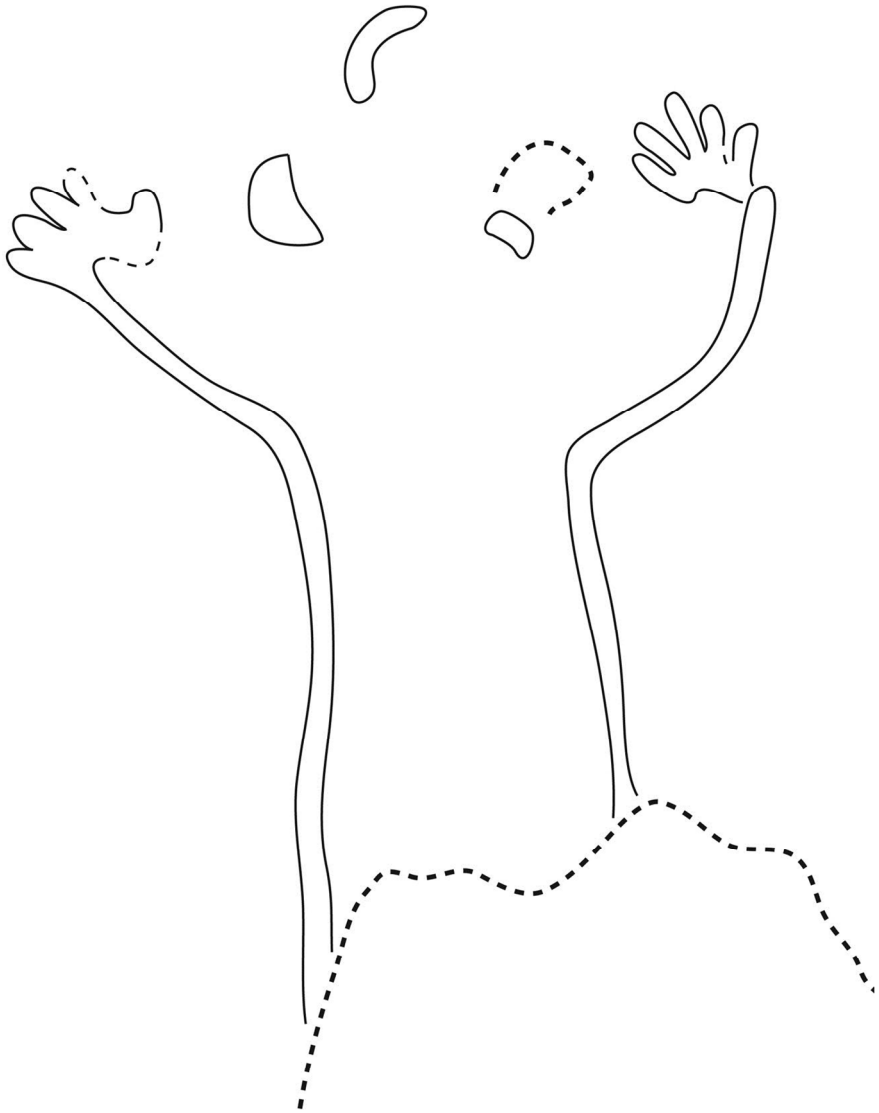

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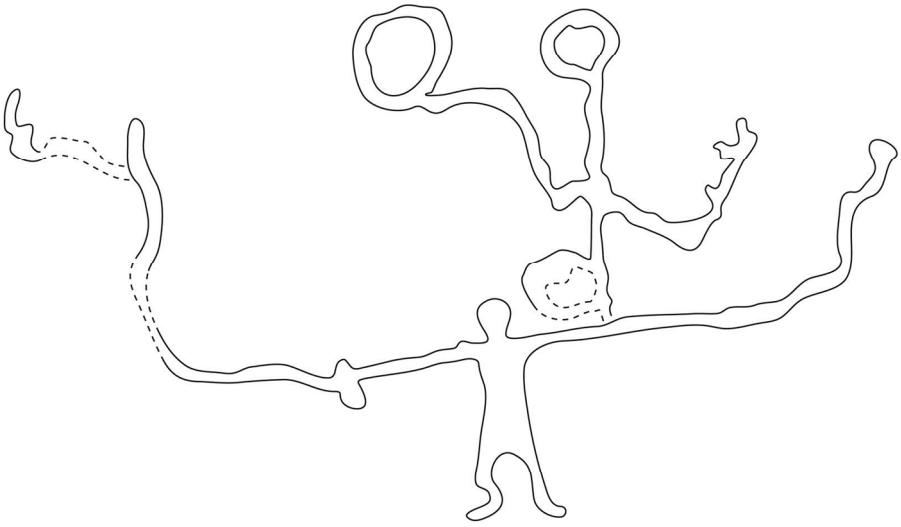

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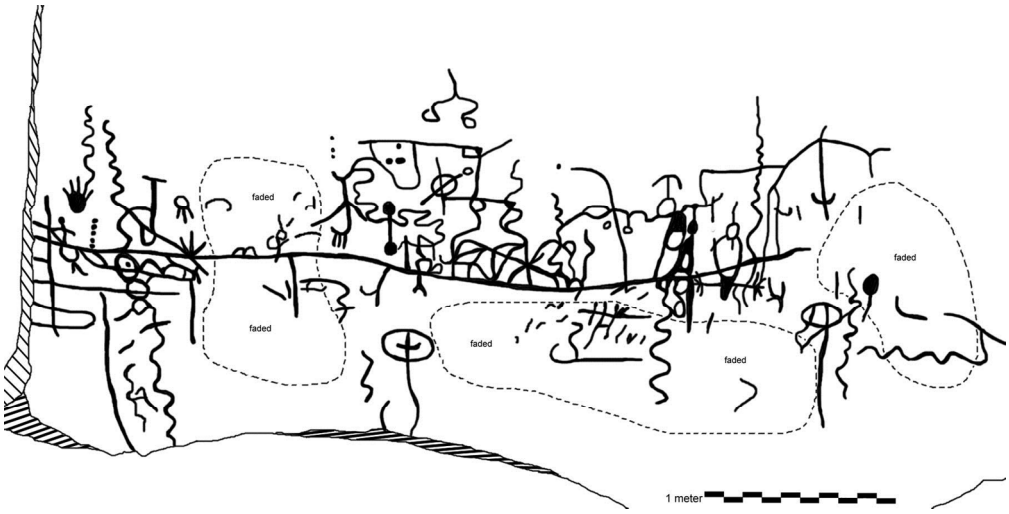

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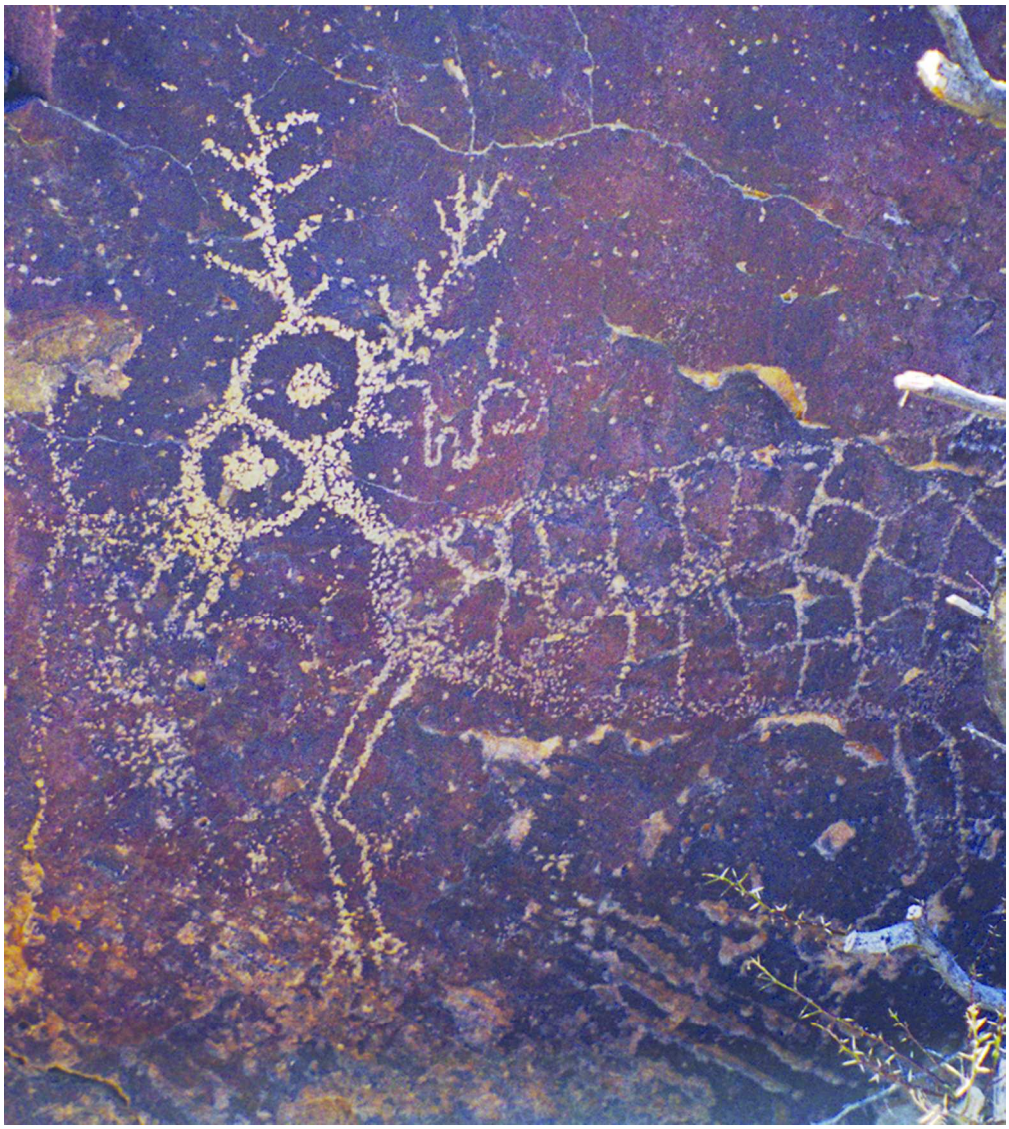

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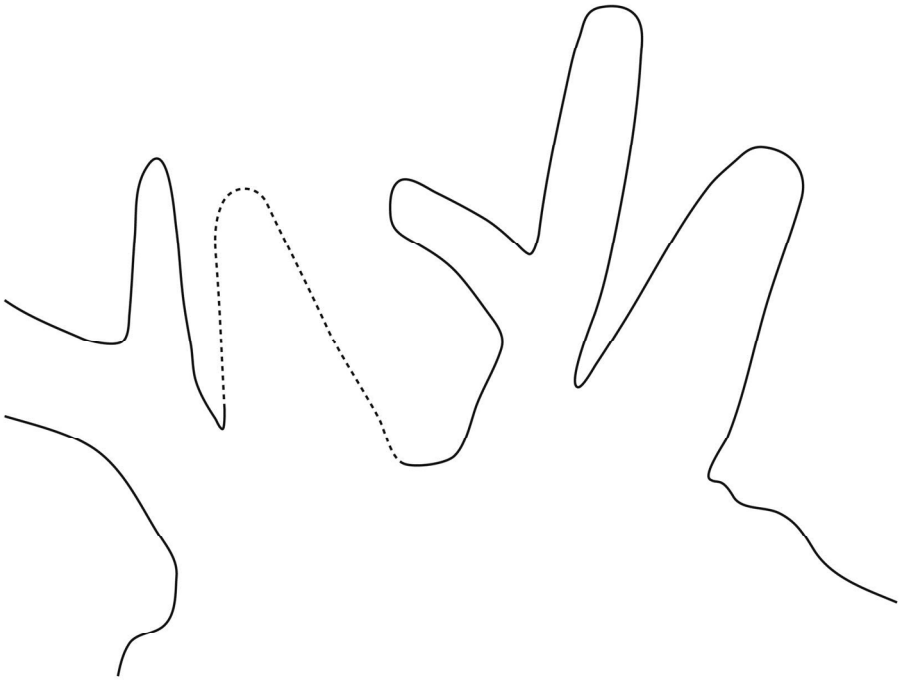

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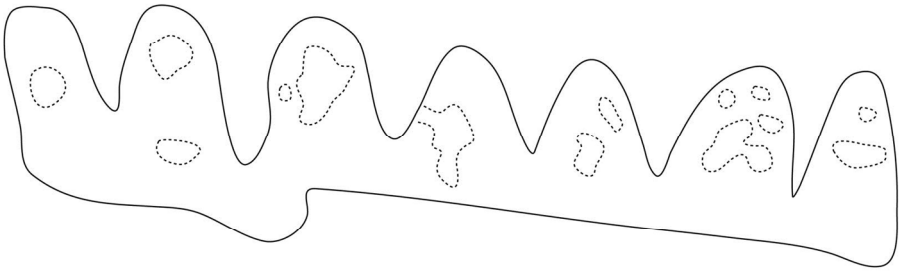

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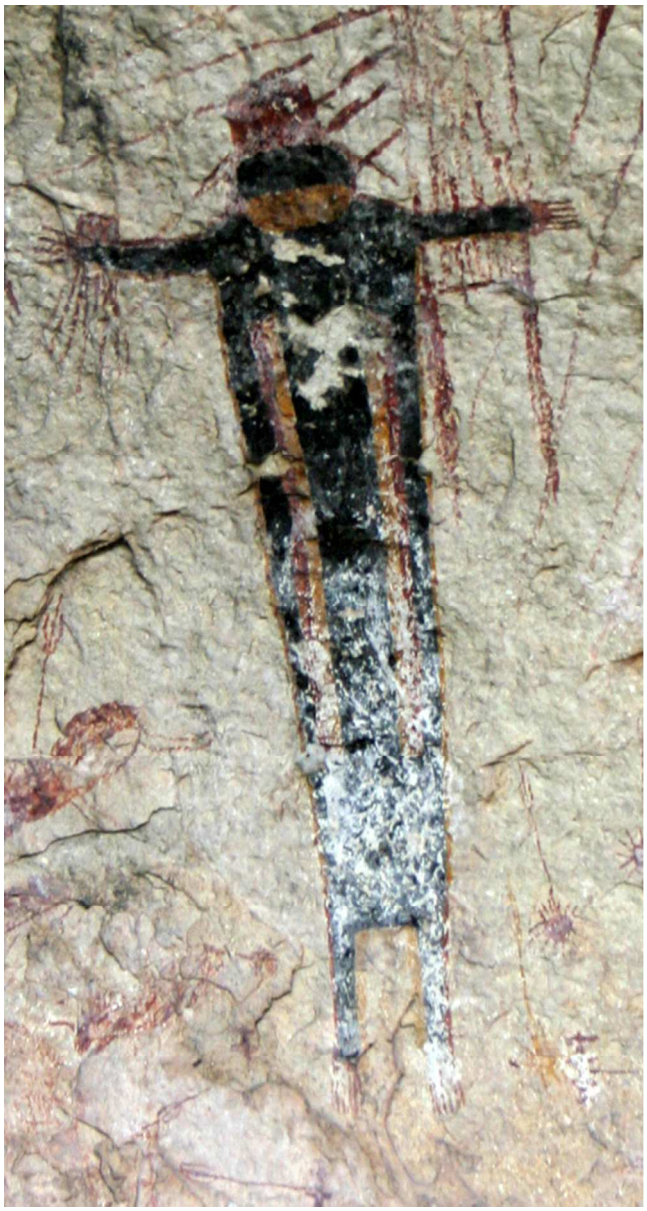

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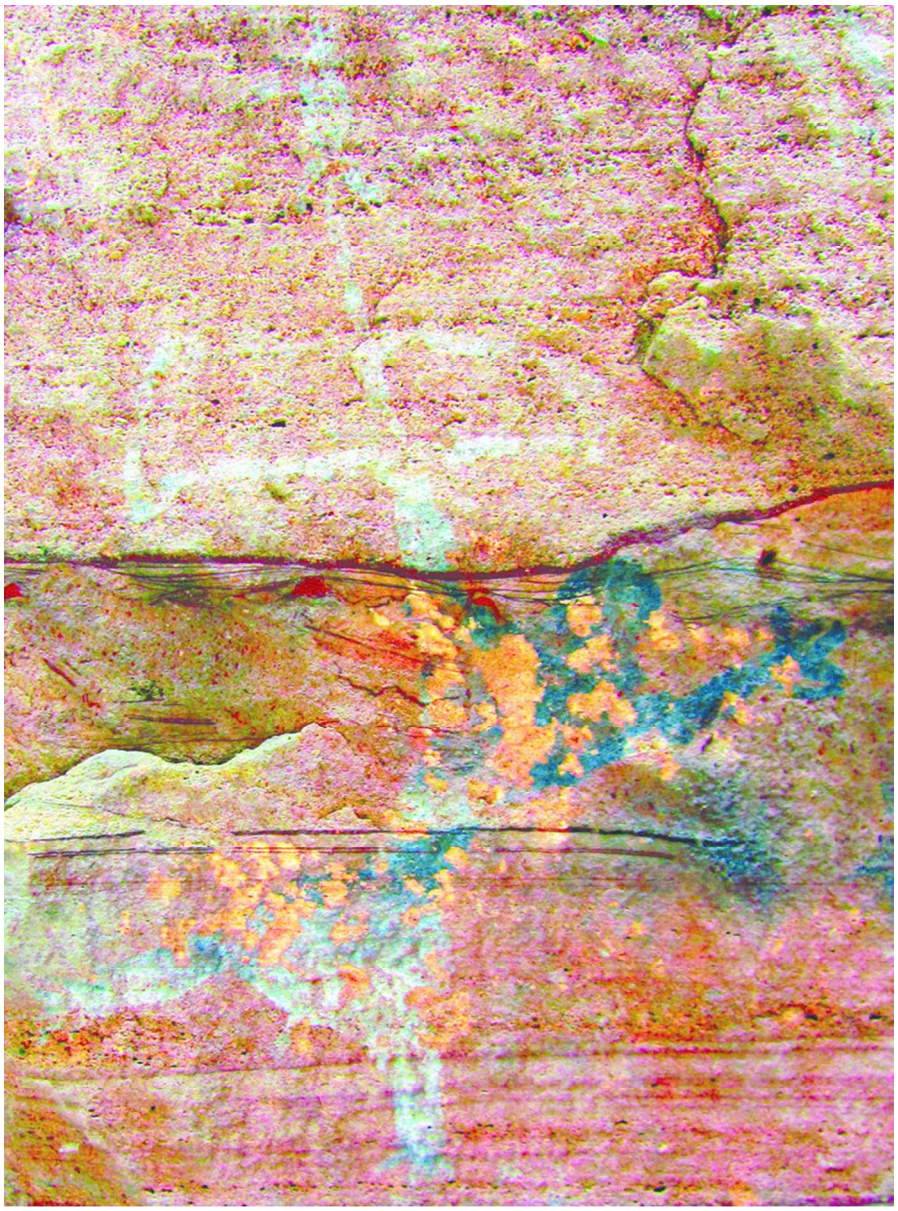

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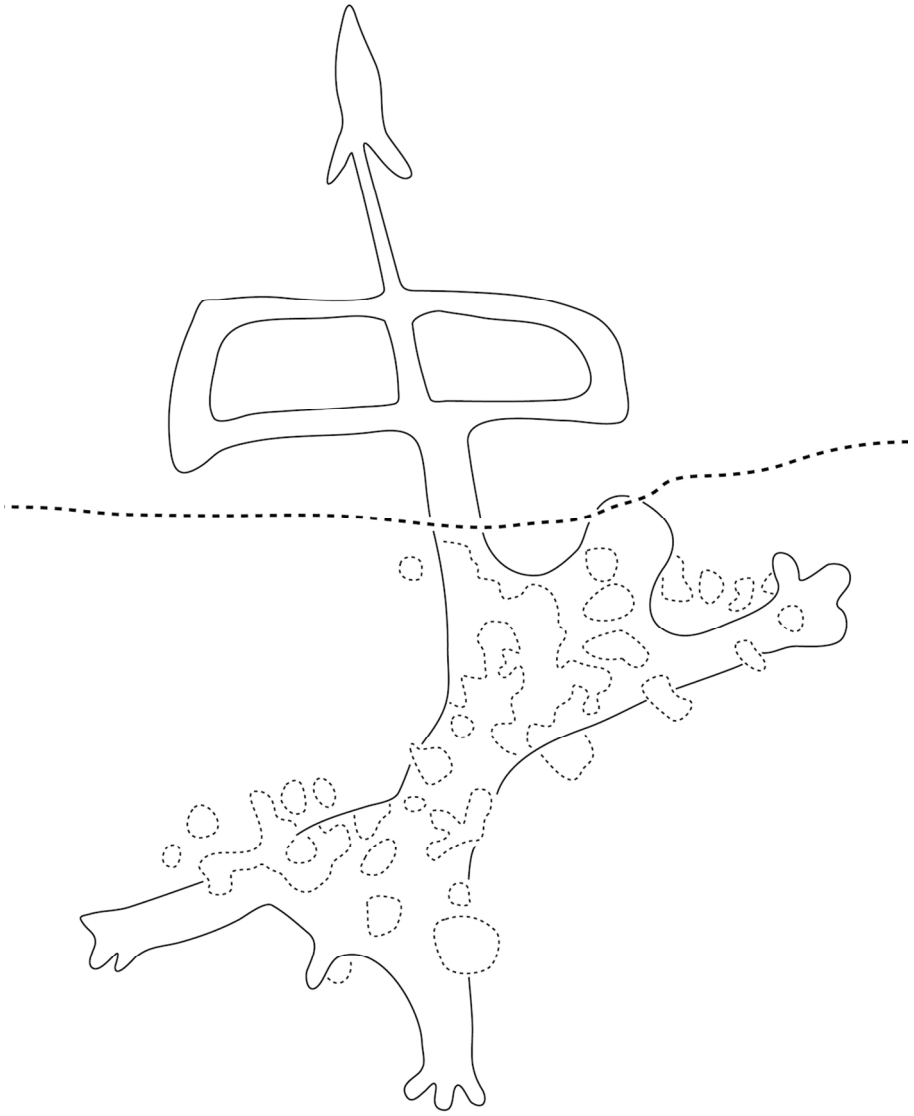

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