

Chapter X

WHEN THE VIRTUAL BECOMES ACTUAL: INDIGENOUS ONTOLOGIES WITHIN IMMERSIVE REALITY ENVIRONMENTS

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Abstract

This paper considers the emergence of a virtual reality (VR) rock-art platform called PleitoVR, charting the creation of new potentialities cutting across archaeological, computing, and indigenous ontologies. The increasing use of VR to create immersive environments in cultural heritage and archaeological sectors calls into question how differing ontologies—understood through differing relationalities across human and non-human kinds—interplay within such newly created experiential platforms. We argue that the immersive platforms are not just simulacra of the archaeological sites, but are novel and new entities in and of themselves. This occurs through a recombination and reappraisal of divergent ontologies; these new entities emerge in the process of questioning the analytics of animacy, vitality, and agency as experienced through new spatial and, with the diffusion of such technology and social relations. We consider tensions between philosophical and indigenous ontologies with ontologies developed for information representation in computer science which are problematic due to the abstract nature of computing ontologies. However, the concepts of class, attributes and instances present in object oriented programming could

provide a template for comparing and evaluating emergent entities and their ontological relationship with pre-existing archaeology. Here, we outline this process through exploring a newly created VR environment of a magnificent hunter-gatherer rock art site in Southern California. We then move to consider how new immersive spaces create novel entities through which new ontological relations can be actualized.

As media fixed in place, but enduring through time, rock-art has long been recognized as anything but a singular phenomenon (Chippindale and Nash 2004). From the original maker of the artwork, to the contemporary viewers of that art, through subsequent generations to the present, rock art carries with it polyvalent possibly (Robinson 2013a). Its role and meaning changes through time. This is mostly because of the changing human relationship to rock-art as living memory gives way to oral history, legend, myth, but also to study, research, even tourism, management, and sadly vandalism. Biochemical changes in the artwork itself, the stability of the host rock, the morphology of the landscape, hydrology, climate, and changes in the biotic communities living in the area likewise create new contexts for the art-through-time. As such, rock-art is part of many different assemblages, but these assemblages are not temporally static. Within this *longue durée* of change, the ontology of differing human communities plays an important part in how significant rock-art might be in any given moment or context. The relationship between multiple temporal ontologies creates complexities rarely explicitly considered in our discourse.

Yet while fixed in place, rock-art imagery is carried beyond its physical location. Whether in memory, drawing, photograph, or in digital coding, the replicated image can be transported into different relationships, instigating new possibilities for its furthering engagement within unanticipated situations. While we focus on rock-art here, these

observations are not uniquely applicable to rock-art alone. At issue here is the way ontology itself transforms. And if we are to hold that different ontologies can exist at the same time, then the interactions between ontologies may lead to the emergence of something new, even novel. If so, this is something we should be paying close attention to. Here, we consider the emergence of a virtual reality (VR) rock-art platform called PleitoVR (Cassidy *et al.* 2018, 2019) (see Figure 1), charting the creation of new potentialities cutting across archaeological, computing, and indigenous ontologies.

<FIGURE 1 HERE>

The increasing use of VR to create immersive environments in cultural heritage and archaeological sectors calls into question how differing ontologies—understood through differing relationalities across human and non-human kinds—interplay within such newly created experiential platforms. We will argue that the immersive platforms are not just simulacra of rock-art sites, but are novel and new entities in and of themselves.

According to DeLanda (2006; 2012; 2016), assemblages have both properties and possible capacities. A capacity is latent, or virtual as he puts it, in the sense that its properties have the possibility to act in an affective manner, but the capacity may or may not be exercised. For DeLanda, in his interpretation of Gilles Deleuze, the virtual is the structural space of possibility. He uses the ideas of a manufactured knife and a natural obsidian stone (2012, 13):

... a knife has the actual property of being sharp and the virtual capacity to cut. If we imagined instead of a manufactured object a sharp obsidian stone existing before life,

we could ascribe to it that same capacity to cut, a capacity it occasionally exercised on softer rocks that fell on it. But when living creature large enough to be pierced by the stone appeared on this planet the stone suddenly acquired the capacity to kill. This implies that without changing any of its properties the possibility space associated with the capacities of stone become larger.

For Delanda, the possibility space of the obsidian knife to kill (once an animal exists) is real, a real virtuality as he puts it (2005, 83). But real is not the same as the actual. The actual only emerges when a catalyst enacts the cutting: so ontologically, we have a distinction between the virtual and the actual as defined by possibility space: one in which the structure presents possibilities, the other when such possibilities are actualized. Both are intrinsic to assemblages, but only with actualization do assemblages operate as affective entities and express their capacities. Importantly, assemblages by definition are relational while being holistic: the way the parts relate determines how the assemblage as a whole expresses itself.

This discussion does not at first glance equate directly with what we normally term Virtual Reality, yet indirectly it is very relevant. Here, we are exploring how we can envision VR platforms, such as one we have developed on the Californian rock-art site of Pleito, ontologically. Certainly, PleitoVR is itself an assemblage, instantiated by headsets, photon's and soundwaves, and an interlocutor experiencing the immersive. Taking Johnson (2008a) arguments about virtual reality in novels from a Deleuzian perspective, we suggest that such VR assemblages are not simply new modes of representation of rock art, but entail decoding and recoding of the human body in an emergent context (see also Johnson 2008b). Or put another way, the VR begins a process of territorialisation that, while derived from the physical space of the rock art site, is a new and novel synthetic space (see Delanda 2011). As Boellstorff (2016, 394) contends concerning online platforms, "Virtual worlds do not mediate

between places; they are places in their own right that persist as individuals log into and out of them. They exist even if no one is currently ‘inworld’.” And so it is that there are virtual possibility spaces that the PleitoVR may hold which have yet to be fully considered. Not the least of which is to question what affect the indigenous ontology which created the artworks at Pleito plays within this VR assemblage. So what are the virtual possibility spaces of an immersive reality platform, and what new actualities might emerge from this?

Pleito is of international importance. Located in South-Central California (Figure 2) it has the widest colour palette of any known site in the Americas, including reds, black/grey, white/creams, yellows/oranges, plus rare greens and blues (Bedford *et al.* 2018) plus intense over-painting creating a complexity rarely seen (Robinson *et al.* 2015).

<FIGURE 2 HERE>

These series of superimposed layers clearly indicates multiple time periods ([Kotoula, Robinson, and Bedford, 2018](#)~~Kotoula *et al.* 2018~~), most of which likely were painted over the last 2000 years (Robinson and Wienhold 2016). The paintings are extremely fragile, with the site in a remote location even if it was well occupied and utilized as a food processing locale during much of its prehistoric use (Robinson 2007). As researchers, we have occasion to inhabit this site and experience it in ways not normally available to the public, employing portable digital technologies in analytical and imaging approaches (Bedford *et al.* 2014, 2016; Kotoula *et al.* 2018; Robinson *et al.* 2016). So, we created a VR with our original intentions for it to act as a means for people to experience the cave (Figure 3) (Cassidy *et al.* 2019a).

<FIGURE 3 HERE>

Here the user can move about the simulated cave environment, look closely and in detail at the paintings, and even handle baskets and other materials (see McCarthur and Robinson 2016; Robinson 2017). We have included imaging data in the application and interactivity with superimposed paintings enabling the user to inhabit the VR space in ways very different than if one were to visit the site in person. We particularly developed PletioVR for the use of the local Tejon Indian tribe, so that they can utilize the VR in their own cultural educational programmes (Cassidy *et al.* 2019b).

The rock-art is attributable to Native Californian groups such as the Chumash and their neighbours. But even as the ontology that created the original Pleito is rightly called a relational ontology, it is different than Delanda's ontology. It could be called a 'relational animism' or 'agentive relationality' in a crude shorthand way. For instance, the rock itself was not passive, but likely to have been considered the petrified remains of mythological creatures turned to stone during the mythic past (Robinson 2013b). Paintings may have drawn upon a kind of slumbering semi-sentience resident in the rock. Rather than inert media, pigment admixtures could be thought of as potent alchemical substances redolent with complex agencies connected to their place of extraction and enhanced via preparation and admixture (Robinson 2004). Painting was an act, a catalyst to put in motion the affects of those connections. This in part explains the many amorphous smears and apparently non-representational paintings that are very common in the region. And, rather than simply symbolic or even indexical, images could be relational agents, entities in partnerships with the artists, like marionette strings involved in the dance mechanics of native power, they were enactors of agency influencing supernatural, physical, and social worlds (Robinson 2013c).

Key to Chumash understanding is the idea that things, substances, entities, persons, can all undergo transformation: combining transformations in collagic recipes increases potentialities: this is what has been termed ‘transmorphism’ by some who study the Chumash (Blackburn 1975, 40; Robinson 2013c). But the site, along with other rock art locale, was also part of a larger social assemblage, linked to wider land use practices and part of the process of the emergence of Chumash complex society which was encountered by colonial powers (Robinson 2010; Robinson and Wienhold 2013; Wienhold and Robinson 2016).

And so these rock art paintings as actants extend beyond the field of representation. It is not enough to simply classify what an image represents as an external referent to an internal mental process. In our analysis of a figure or a motif, we must incorporate the known ethnographic record of myths and stories with an ongoing process of developing theoretical frameworks to think through the possible ontological worlds in which such art was created. Our work thus becomes its own moving assemblage as we strive to incorporate theoretical constructions from anthropologies and philosophies with ongoing collaborations and insights from indigenous scholars and communities alike. Indigenous understanding here does not simply entail trying to understand the ontology of people in the past who made the art (as important as that is), but to fully appreciate the influence of recent and contemporary Native viewpoints and philosophies in the very construction of our narratives and our theories. We take seriously the indigenous critique of ontological theorization as an extension of colonial appropriation and disenfranchisement. [Zoe Todd](#) (2016) aptly criticizes the lack of indigenous representation in the theorizing of concepts attributed to the very ontological worlds from which they are at home. More to the point, the development of relational theory and New Animism in anthropological and archaeological discourse is derived from Indigenous peoples.

We seek a broader conversation through first considering what Native artists and theorists have already achieved in the role of cyberspace in Indigenous culture. The first application of an indigenous VR was by Salish artist, Laurence Paul *Yexweluptun*, known more widely for his large mural paintings, but he was also the first person to create an immersive VR environment involving Indigenous cultural material and practices.

Titled, *INHERENT RIGHTS, VISION RIGHTS* (abbreviated as IRVR), *Yexweluptun's* artwork created a virtual reality installation in 1992 (see Todd 1996) meant to expose the non-initiated and non-indigenous into the world of spirits which he is so familiar with. *Yuxweluptun* means "man of many masks," a name that was bestowed on him by a secret mask society of the Coast Salish. Within that cultural context, engaging foreign cultures through a VR mask seems only fitting. On entering the artwork, the participant finds themselves outside a Coast Salish Longhouse—itself a sacred space of dance, worship, prayer and healing. Participants are able to enter the longhouse, witness ceremony, hear the song and sounds of the space, and interact with spirits and beings that are potentially present.

Importantly, this experience is framed within a relational engagement. There are no avatars, the participant should feel as if they are themselves present in the experience. Emphasis is on the participant to explore and evaluate their decisions: “Are you actually supposed to be here,” “If, regardless, you are here, how will you conduct yourself in this space?” (King 2017). If you misconduct yourself, the beings resident in the space have no obligation to you.

As a non-traditional artwork which blurred the lines of materiality, IRVR’s critical reception by Indigenous scholars and theorists has had far reaching impact in Indigenous virtual theory. One of the first to approach this was Cree/Métis theorist Loretta Todd. Drawing from N. Katherine Hayle’s, *How We Became Post Human*, Todd emphasizes her

concern with VR as a colonial technology. Tracing the history of cyber space through Western/Christian cosmologies of salvation, ascension, transcendence and aversion to nature—Todd emphasizes the discord with Indigenous relational lifeways. In experiencing iRvR firsthand Todd notes the reversal of usual modes of VR experiences. Instead of distributed subjectivity, she finds “embodied virtuality”. That within the 1’s and 0’s of iRvR the Coast Salish Spirits might be ever-present. In particular, Todd (1996) and King (2017) both argue that IRVR “rejects the bodiless escapism offered by other VR projects” by challenging the user to portray herself in relation to the spirit figures and the setting of a longhouse (King 2017:191). Mohawk artist and academic Jackson 2bears expands on this notion, arguing IRVR offered the possibility of re-contextualizing the Western "ontology of the virtual," expanding Indigenous consciousness of relational epistemologies into ever expanding digital territories (2Bears 2013). As 2Bears puts it, ‘...there is in Yuxweluptun’s work a return to the flesh in something similar to what Hayles would call embodied virtuality – virtuality, that is, where the myth of transcendence and disembodied immortality is demystified and embodiment and material embeddedness is written back into our concept of posthuman subjectivity (2Bears 2013, 149). In Yuxweluptun’s work, the mind/body Cartesian dichotomy is denied by a network of relations played out by embodied embeddedness.

This same network of relations has also fuelled new forms of Indigenous representation and culture through what has come to be called Indigenous Futurism. According to Ashinabe director, Lisa Jackson, “[Indigenous Futurism] looks to break through that tendency to stereotype everything indigenous as stuck in the past and incapable of moving into our present, or our future” (in Dehauhsay 2018). For our discussion, artists taking part in the Indigenous Futurism movement have created remarkable outputs in the VR world which offer important and meaningful methods, ethics, and purposes to consider when

using VR in archaeological contexts. Jackson, for example, is the creator of the Indigenous VR epic, *BIIDAABAN: First Light*. The VR narrative explores an Indigenous future in a post-apocalyptic Toronto where Indigenous values and lifeways have found new meaning and purpose as Indigenous communities rise from a dystopic future and begin to co-exist with their environment. Jackson gives special consideration to the spiritual and social ontological underpinnings of VR. Utilizing Wendat, Mohawk and Ojibway instead of English, participants are immersed in a future where relational engagement with an animate world is reawakened.

Throughout Indigenous futurism, Indigenous thinkers, theorists and creatives have sought to reformat Western or Colonial technologies and repurpose or Indigenise them. In doing so, Indigenous artists and theorists have shown cyberspace as something intricately connected to life and spirit, not devoid of it.

At first glance, these Indigenous modalities ascribing the kind of vibrancy to cyberspace more akin to Bennet's views (2010) than from how computing ontology is typically characterised. The workings of computing is usually viewed as mechanical, structural, and ultimately impersonal. As Wellen and Sieber (2013, 159) put it, computing ontologies serve data (or metadata) consisting of classes, properties, instances, and rules. Or, as Cripps *et al.* (2004, 3) describe, a computing "ontology is an explicit formal declaration (with a standardised vocabulary) of how to represent object concepts and other classes assumed to exist in some area of interest (a domain) and the relationships between them. In this sense an ontology is a specification of a conceptualization. Ontologies provide a shared and common understanding of data." As such, computing ontologies can be recognized as consuming the Indigenous through this process of standardisation. In other words, another pernicious form of colonialism threatens to work within computing domains. This is problem recognized by some, such as Reid and Seiber in their geospatial work with First Nation

people, who argue “that universality through ontologies can potentially perpetuate homogenization of concepts”, thus contributing to assimilation of Indigenous peoples (Reid and Sieber 2019, 1). They recognize that a fundamental problem is that the purpose of an ontology is to provide a universally shared common understanding of reality as it exists and is represented (ibid, 30). Their solution is to propose a hermeneutic approach for a “place-based Indigenous ontology that could partner with western ontology instead of being subsumed by it” (ibid, 12). In our work in California we have long adopted just such a hermeneutic approach looking for points of articulation between Indigenous philosophy and academic interpretation (see Robinson 2004). Amongst those we have drawn upon Vine Deloria’s views (1970, 12):

The best method of communicating Indian values is to find points at which issues appear to be related. Because tribal society is integrated toward a centre and non-Indian society is oriented toward linear development, the process might be compared to describing a circle surrounded with tangent lines. The points at which the lines touch the circumference of the circle are the issues and ideas that can be shared by Indians and other groups. There are a great many points at which tangents occur, and they may be considered as windows through which Indians and non-Indians can glimpse each other. Once this structural device is used and understood, non-Indians, using a tribal point of view, can better understand themselves and their relationship to Indian people. (1970, 12)

It is crucial that such interactions between Indigenous and academic are partnerships rather than appropriations. We take seriously the indigenous feminist’s agenda (e.g. Todd 2016), and its critique of ontological theorization as an extension of colonial appropriation

and disenfranchisement. Todd (2016) aptly criticizes the lack of Indigenous representation in the theorizing of concepts attributed to the very ontological worlds from which they are at home. It is indeed problematic that we, as academics, are embedded in institutions with ontologies and research traditions that categorizes reality in non-relational ways. While we may recognize the ‘Otherness’ of relational ontologies, we typically do so by standing back from it, reifying it by our practice, if not in our intent, in the very separation that we argue is a falsity, at least in the object of our study. We interpret the spectacular polychromatic rock art of Pleito in the ontological the context of a range of different evidences, from ethnography to archeology of philosophy. Ultimately, we think that the art was created within an ontology which does not separate Nature from Culture and which recognizes different forms of sentience, agency, and affect which are all situated and contextual (Robinson 2004; 2013b; 2013c). Painting was not simply cognitive representations of the inner workings of a ‘shaman’, but enactments in the creation of polyvalent agents within changing assemblages through time and thus were important aspects of Indigenous social power. And so as we have stated above, these rock art paintings extend beyond the field of representation. Our work thus becomes its own assemblage as we strive to incorporate theoretical capacities from anthropologies and philosophies with ongoing collaborations and insights from indigenous scholars and communities alike. For instance, in our creation of the PleitoVR, we have worked with the Tejon Indian Tribe to include traditional singing. As one starts the application, a Chumash welcome song performed by Jake Hernandez (a Kitanemuk Indian) is heard in the headset as a greeting to this new space. The song was recorded in the cave itself and is deemed appropriate for non-native speakers to hear. The singing to life the cave is something that in all likelihood returns a tradition lost there for at least 150 years, so for the listener it creates a new kind of engagement with the site which is privileged. We also have the ambient sound taken from the cave. In it, we hear the stream running below, the wind in

the trees, the pecking of a woodpecker, and other animal sounds. All the sound waves of the recording interacted with the cave itself, so that the place is immanent in the sonic experience. Hearing the song and the sounds from the cave both engages the listener with the site *as if one was there*, but also is enlivening as the Native voice relates to the space in a way not heard before by a modern audience.

This kind of engagement we argue touches on something more than just the hermeneutic and the ‘glimpsing’ between Native-and-non-Native. The privileged experience of the sonic in the cave is part of a new formation between actants, of which the VR is a vital component. This is understandable not strictly an Indigenous mode of ontology nor in the typical Cartesian ontology, as these ultimately may prove to be inaccurate dichotomies anyway. A long history of vitalist philosophies can be traced back through our Western thought tradition, from Spinoza to Bergson to Deleuze, theorizing the potentials of a vital force in matter. The relational, intersubjective space, between that which is perceiving and that which is being perceived, translates into a transference of certain qualities from one source to another. Latour (1993) takes issue with the strict dualistic divide between Nature and Culture, diagnosed by post-Enlightenment thinkers as a fixture of the modern age, a metanarrative distinguishing ‘us’ from the sentient worlds of the Indigenous, worlds in which natural-is-social, fully imbricated and intertwined with the human-is-social. There is an irony in that Latour’s findings which interlock with Deloria’s tangents to resonate with Indigenous ontologies arise largely from his focus on his “anthropology of the moderns” (Latour 2010, 601-603) modern in ways which make the Cartesian seem naïve. As he further states (Latour 2010, 605), the “modernist idiom, matter is not a taken-for-granted category, but a historically contingent amalgam of at least two entirely different elements: the way we know (which is generated by the reference chain of science) and the way entities reproduce themselves.”

Latour's many nods to the continued interworking of nature-culture hybrids in the era of the anthropocene have demonstrated the faith based approach to much of our post-enlightenment thinking, we might have believed that human beings have separated themselves from the natural world, controlling many of its aspects in a classical Baconian sense, but in actuality, the forces of nature and culture are not separable from one another. Our own contribution here, is in the way in which a cave in the middle of the Southern California backcountry, a cave albeit that was obviously home to rich cultural ongoing, is becoming enmeshed in our own technological circuits, bringing the experience of this landscape into a totally new, immersive, environment.

Our principal inquiry here is how this newly constructed environment potentiates new ontological relations with the space itself, and, sticking with our theme, how the virtual qualities of the rock art and the cave can become actualized through the experiences of the VR. We argue that the virtual environment catalyzes new possibilities for the relationship the viewer can have with the art at Pleito cave.

In other words, this something other than creating a VR that is more than service to Indigeneity, the native perspective is fundamental to the VR itself. While yes, this very space correlates to the mode of relationality gesturing towards the animistic ontologies of the world through which the paintings were created, it also expresses a dynamism that begins emerge as something further. In Delanda's terms, a territorialisation is occurring in the new possibility space of the virtual. Rather than creating a new hybrid entity, made out of the combined particles to form a new object, this is a polyvalent process creating new relations within which embody perspectives experience something novel. Eduardo Viveiros de Castro (henceforth EVC) cultivates an evocative theory of "Amerindian perspectivism," looking to situate his metaphysics both in a tradition of Western philosophy, but moreover as inspired by his fieldwork with his comparative studies of animistic cultures. For EVC, Amerindian

thought does not simply take Western categories of nature and culture and reformulate them, but rather these categories take on a different status entirely. They no longer refer to discrete ontological provinces; they emerge through exchangeable perspectives and relational-positional contexts—or points of view.

In contrast to the ontological mapping of his contemporary Descola (2013), in which animism is but one of a host of ontological types scattered across the world, EVC's approach emphasizes a much more totalizing ontology: he defines it as full-blown but implicit metaphysics embedded in indigenous practices. Not wanting Amerindian perspectivism to become "just another curio in the vast cabinet of curiosities [EVC] accuses Descola of seeking to build", EVC approaches perspectivism like a bomb "with the potential to explode the whole implicit philosophy so dominant in most ethnographers' interpretations of their material" (Latour 2009).

This vein of animism elicits a sense of intentionality that facilitates the body as holding the point of view from which the Subject emerges. Deleuze (1993, 19) takes us further in conceptualizing the subject created by the point of view:

It is not exactly a point but a place, a position, a site, a "linear focus," a line emanating from lines. To the degree it represents variation or inflection, it can be called *point of view*. Such is the basis of perspectivism, which does not mean a dependence in respect to a pre-given or defined subject; to the contrary, a subject will be what comes to the point of view, or rather what remains in the point of view.

Insofar as perspectives are embodied in specific dispositions, an apperceptive reckoning ensues that calls upon the body as the origin of perspectives—a body with no fixed shape that is an “assemblage of affects or ways of being that constitute a habitus” (Viveiros de Castro 1998, 478). EVC’s theory of offers, on the one hand, a broad, essentialized mythic structure applicable across Amerindian societies, while on the other hand, focuses in on each type of body as an “affectual singularity” with its own perceptual apparatus (Viveiros de Castro 2012, 114). Elaborating on the difference of embodied perspective, EVC states (Viveiros de Castro 2004a, 6):

Rather, such difference is located in the bodily differences between species, for the body and its affections (in Spinoza’s sense, the body’s capacities to affect and be affected by other bodies) is the site and instrument of ontological differentiation and referential disjunction.

As ~~Deleuze~~ Deleuze states (1988, 48), ~~(1988, 48)~~ “The affections (*affectio*) are the modes themselves. The modes are the affections of substance or of its attributes [...] At a second level, the affections designate that which happens to the mode, the modifications of the mode, the effects of other modes on it.” Through the experience of VR, a shifting perspective engenders a new experiential compass, unlocking lines of communication in the emergence of unspoken relations. Throughout Indigenous cultures of the Americas resides the latent capacity for perspectival shifts, engaging in dialogue with spirits and nonhuman ‘others’, changing form in order to see nonhumans as they see themselves. In the West, the apprehending human subject detaches and distinguishes herself from that which is inherent in the object—a thing that is known only insofar as it is objectified, inscribed with the

projections of the knowing subject. So-referenced modes of being enable individuals to cross ontological boundaries, to adopt the perspective of nonhuman subjectivities and engage in reciprocal exchanges of intentional communication:

Here we might think of our nonhuman others as the artworks themselves, and perhaps they gain a personhood of sorts, or at least an agency working with us in the VR, just as EVC states that Amerindian objects can be subjects (Viveiros de Castro 2004b) the paintings have never been simply static images waiting to be apprehended but rather enacted with people in the past as they do for visitors to the site today: this occurs in the VR in corollaries to the those ways but with additional properties added and subtracted. Part of the reason for this is us, the academics writing this paper, who have brought our own practice into this assemblage in the creation of new possibility spaces. During the course of our analytical work on the paintings, we applied the visual enhancement tool called dStretch into our 3D model and then into the VR application (Figure 4).

<FIGURE 4 HERE>

This enables the user to experience the art and cave in full immersive dStretch mode. Images difficult to see are suddenly vivid, but made explicit in a new colour spectrum, while others normally dominant, become muted or suppressed. Walking in the dStretch cave, new vistas into the relationships between paintings, overpaintings, inter-referencing from one image to another, the artwork transmorphs. We added in a ‘flashlight’ tool which then lets the user tack back-and-forth between the regular non enhanced view of the paintings and the dStretch version (Figure 5), allowing the user to interplay with visualizations in ways impossible at the

‘real’ site. Another property we developed is let the user ‘grab’ panels or even individual figures (Figure 6).

<FIGURE 5 HERE>

<FIGURE 6 HERE>

Thus the paintings can come off the wall at us, engage in a visual yet (dis)embodied dialogue. Yet while the body engages with the site, the art, and novel ways of experience, the material is intangible, including one’s own body in the VR realm. You cannot touch the paintings, but you can hold them. You can move about the cave, but the rock is a reference to the solidity of itself rather than feeling solid. The (dis)embodied experience of the VR cave challenges the person to consider their body anew, entering a new spatial relation with the artwork in question. And with their imaginations in tow, stimulated by the sights and sounds of the cave site, one might begin to consider their own body as permeable to the environment at present. A certain perspectival shift might occur, as they exit their temporality and enter into the androgynous time of the virtual cave site, a space of alterity and of potentiality. For a few brief moments, while in the VR space we have access to an other-than-human perspective of the virtual. Here, one can move through different imaging textures, move through the rock itself, see the curvature while passing through, experiencing space in ways not immediately possible at physical site itself.

Furthermore, one can enter the VR environment in tandem with others using avatars, but do that remotely from anywhere in the world where one can access the PleitoVR

application online. For instance, we performed a demonstration of this possibility at the Society for American Archaeology Meetings in Washington D.C. in 2018. There, we had a projection of the PleitoVR shown on a large screen, but had four participants from around the world participate: a Tejon representative from their offices in Bakersfield California; a Ranger from the the land owners at the Wind Wovles Preserve; our VR designor Brendon Cassidy from his house in Blackpool, UK; and co-author Devlin Gandy at the conference itself (Figure 7).

<FIGURE 7 HERE>

The Pleito VR gives us pause to think how indigenous ontologies—relationships to substance, matter, agency, vitality, permeability—might be invoked by these new environments. Ones that reorient subjective and intersubjective gaze, in a sense bringing the space to life in the exchanging and reorienting of perspectives, or points of view. So, we do not see the VR version of Pleito as a reproduction or even straightforward 4D representation of the physical site itself. It is something other than that, with its own virtual possibility spaces. Each time it is utilized, when the user bodily inhabits it space, it moves from the virtual to the actual and is an entity in its own right.

But can we really claim that the PleitoVR application is an entity in its own ontological right? Deleuze and Guattari point to the nomadic warrior constellation of the ‘man-animal-weapon, man-horse-bow’ as an assemblage of speed that created a historically specific assemblage actualizing its capacity in the act of battle (Deleuze and Guattari 1987, 446). It emerged, in their terms, from a ‘technological lineage’ of the constituent part of that assemblage. This technology groups together from the ‘affective parts or qualities of traits of expression’ of the part, and thus can be seen in their terms as a ‘machinic phylum’ (Deleuze

and Guattari 1987, 446- 448). Just as Delanda takes these ideas of ‘affective parts’ as that of capacity, the affective capacities are expressed in sandstone, painting/painter, digital capture, computer processing, VR gear, VR user certainly comprise a machinic assemblage.

However, the ontological perspectivism of the original artists and contemporary Native American likewise expressed their capacities within this assemblage in the creation of the art, its form, and in the cave singing. But the entire output of this assemblage emerges as something drawn-from but different-to the rock art site itself. This occurs through the unpredictability inherent when existing entities interact in novel combinations such as bricolage or polyvalence. Polyvalence is apt here as it describes a process of ambiguous potentiality, or the inherent capacity for different or multiple outcomes to occur from a given set of factors” (Robinson 2013a, 304). There are unforeseen capacities that become possible in the ongoing interplay between the past, the present, and the future in such entangled contexts involving archaeology, Colonial landscapes, Indigenous assertion, and new technologies. Deterritorializations and new territorializations may occur as gradients shift.

However, we do not know how prolonged this specific PleitoVR will endure, and in what manner it may provide a means of embodied perspectivism. For Deleuze and Guattari (1987, 448), a machinic emergence be considered to be a ‘phylum’ or ‘technological lineage’ only does so because its operations are prolonged. But we do know that Indigenous futurist are actors in similar polyvalent circumstances, with a cadres of others working in similar realms (for instance Gard and Bucolo 2005; Gaertner 2015; Wyeld and Pumpa 2015; Wyeld *et al.* 2007a, 2007b). We agree with Bollestorff who, drawing upon Viveiros de Castro, sees the ‘derealization’ of the digital in the similar light of the ‘derealization’ of native ontologies brought about from some academic discourse (Bollestorff 2016, 397). As involved participants of this assemblage making, in participation with a wide range of other actants, including the Tejon Indian tribe, we suspect that the actualizing power of such Virtual

Realities will enact the capacities of Indigenous ontologies in ongoing processes of emergence.

Post-script

As I write this in mid-May of 2020, the world is in the grip of the Covid-19 pandemic. Living in lockdown, the site of Pleito is completely inaccessible now. -The PleitoVR remains fully operational. The coronavirus had destabilized global institutions, making inaccessibility most museums, archaeological sites, and other places of cultural importance. This has created a much greater demand for virtual access to sites now out of bounds to the public. As one newspaper put it, a kind of Virtual renaissance is taking place

(<https://www.theguardian.com/culture/2020/apr/08/art-virtual-reality-coronavirus-vr>). As of this moment of writing, there are extreme uncertainties with coming out of the ‘lockdown.’ Covid-19 has created a polyvalent situation as we draw upon existing resources to create new combinations to deal with social distancing needs. While we don’t yet understand the characteristics of, or know how prolonged this new assemblage will be, it seems that the ideas we have been exploring here are prescient and worthy of ongoing discourse.

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