

Narratological Constructs in the Gestalt of the 3D Game environment: Aboriginal Knowledge and its Connection to the Data Landscape Metaphor

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Abstract

This paper reports on a project federally funded by the Australian CRC for Interaction Design (ACID). It investigates the use of a 3D game engine as a landscape metaphor for hosting Australian Aboriginal knowledge practices based on performed narratives. It communicates some recent findings. Central to these findings is the need to communicate a better understanding of the complex interrelationships indigenous Australian people share with their country, how this is reflected in their narratives, and what this can tell us about digital narrative in general. It is pitched at a broad audience which includes, theorists, practitioners, and technologists. It continues issues raised in another paper presented to the European Information Visualisation conference 2006 (IV'06) (see [1]).

Keywords: Aboriginal Knowledge Domain, Narrative as Metadata, Torque Game Engine as Information Interface.

1. Exordium

This paper reports on an investigation into the use of a 3D game engine as a landscape metaphor for hosting Australian Aboriginal knowledge practices based on performed narratives. It communicates some recent findings. Central to these findings is the need to communicate a better understanding of the complex interrelationships indigenous Australian people share with their country, how this is reflected in their narratives, and what this can tell us about digital narrative in general. It is pitched at a broad audience which includes, theorists, practitioners, and technologists. It continues issues raised in another paper presented to the European Information Visualisation conference 2006 (IV'06) (see [1]).

In the previous paper, we described the problem that much of what is written on traditional Aboriginal knowledge systems is written by non-Aboriginals, cast in a Eurocentric framework. We attempted to explain Aboriginality in less Eurocentric terms. However, as the

audience for that paper was ostensibly European by origin we needed to use Eurocentric analogies to communicate non-Eurocentric concepts. The issue that was the most difficult to communicate was the unity of the virtual and the actual in traditional Aboriginal knowledge and thought. With few material possessions and no written language, traditional Australian Aborigines have held their memories in a virtual space for millennia. They describe this space through abstract dot paintings, dance and song, imparting their subconscious ethereal landscapes by projecting them back onto the physical world through everyday ritual and performative storytelling. Hence, the role of much Aboriginal tangible culture and technology is to mobilise the connection between the virtual and the actual. This is substantially different to Eurocentric tangible culture which serves as a consistent historical record of the manipulation of the phenomenological world.

Unlike the European or Western practice of recording cultural practices using a written language, without a formal written language, interpretations of Aboriginal culture by anthropologists, sociologists, and ethnographers tend to be speculative or simply contemporised versions of a 'fantasy' knowledge. Clearly there is a need to reverse the paradigm of thinking of other cultures through Eurocentric eyes. Hence, we sought a way of empowering the underpinnings of Aboriginal socio-cultural practice through their own eyes. A method that allows Aboriginal and non-Aboriginal peoples to experience, albeit in a cursory manner, notions of Aboriginality. The method we found most useful was through the practice of performative storytelling embedded in a 3D game environment.

2. Truth Testing

Like the transience of Australian Aboriginal culture, the West's very scientific ontology is underpinned by a similarly insubstantial philosophical proposition: Descartes' *cogito ergo sum* – I think therefore I am. Hence, as a cornerstone of modern Western rationalist thought, there is merit in using Descartes' proposition as

a springboard to understanding the nature of Aboriginal cultural meanings for the ‘uninitiated’. Descartes’ proposition highlights the seeming transience of the very premise of modern Western science – observable proof. Where science uses statistical probability to bolster its proof theorems or ontological truths, Aborigines’ interactions with their traditional environments have a similar truth-testing mechanism, but it is much more procedural and accepting of change. Traditional and contemporary Aboriginal storytelling is a part of this truth-testing. However, Aboriginal storytelling truth-testing is not in the same realm of abstract thought such as that used in the West – the symbolic application of thought as text. Rather, it is highly contextualised and inextricably linked to the country or landscapes that give rise to the narratives constructed. These narratives are embedded in the spatial relatedness of entities within the landscape and serve as a cognitive mnemonic for the environments they describe (similar to Deleuze and Guattari’s [2] notions of *re-territorialisation*). The relationship of narrative to landscape is deeply reciprocal. Narratives are implicit in the landscape. They are told by the landscape as well as giving form to, and bringing the landscape continually into being. Attempts to express these narratives extracted from the landscape which nourishes them, “must be seen as a peculiar form of violence, wherein the stories are torn from the visible landforms and topographic features that materially embody and provoke those stories” [3, p177].

However, access to these landscapes for contextualising specific stories is not always possible. A vehicle for re-presenting the landscape context is the 3D game engine. In conjunction with local Aboriginal artists, activists, and Traditional Owners in rural Queensland and suburban Brisbane, we found the 3D game engine a workable ‘landscape metaphor’ for embedding the narratological structures of Aboriginal knowledge practices. We found we could embed nodes for interaction which could be traversed in an endless narrative of the user, or inter-actor’s, making. As a metaphor for landscape contexts it suffices for specific storytelling episodes (see figure 1). What we have learned from these collaborations and the use of the 3D game engine are new notions of performative spatial narratives that have largely been lost in the West’s pursuit of a material existence, and the recording of narrative in textual formats.

3. The Digital Songlines Game Engine

The Digital Songlines (DSL) software developed for Aboriginal storytelling is based on the display and manipulation of arrays of 3D objects recreating landscapes populated by indigenous Australian flora and fauna (see [4] for a more detailed overview of the DSL project). These assets have been imported into the game style application based on the Torque Game Engine (TGE). The active features include sound, animations, weather and daylight simulation. An established mechanism to import digital terrain models has been

modified for importing satellite based geo-spatial data, or data that is prepared for use in GIS software, for accurately mapping the cultural heritage landscape.



Figure 1 Example of Aboriginal knowledge in practice – woman weaving a fishing net.

Many issues arise from the creation of virtual spaces representing vast rural lands and its reliance on the computational capacity of real-time hardware and visualization technologies. Some are difficult to resolve in a suitable way to communicate the presence required within the virtual space. For example, how to convey immersive narratologies such as, while in place, indigenous knowing pauses at each rock, knows the cycles of the winds, can track underground water, find food and medicine, and uses of the land to speak its stories and keep its history? The kind of knowledge represented and the ‘field’ in which it is held by local indigenous peoples is often deep, subtle and most intimate [5].

Although some of these issues remain unresolved, most have been addressed by a ‘tiered’ model of development. ‘Layers’ of content are created, accessed, and linked back to the virtual model of the physical place. With such a model, we are able to conceive of the (virtual) land as an interface through which the more traditional dynamics of software creation can be accessed. Moreover, this layered model allows the creator to participate in indigenous knowing and being-with, at the most basic level, as the tool is used.

The content can be layered to support virtual heritage applications and narratives (such as land ownership issues, spiritual knowledge, historical and oral stories) and as a community content development and archiving tool (re-populate the virtual spaces with indigenous content) (see figure 2). These can be used in entertainment, display, community consultation and education, such as museums, cultural centre displays, as an indigenous language walk, ‘bush tucker’ walk, or oral history lesson. These are all developed with the notion of land-as-interface where the (virtual) land is layered with

information and practices that arise from that very landscape.



Figure 2 Indicative of issues of authenticity, this screen image of animated fish with representative Indigenous art work is incongruous. Such fish are not normally associated with this region's artwork.

The implementation in DSL of a networked structure of community-based content creation is a powerful paradigm model for research in interaction design, ambient, or serious gaming. The sociologist Manuel Castells [6] describes such networks as consisting of knowledge-based information technologies which enhance and accelerate the production of knowledge and information, in a self-expanding, virtuous circle. The network represents the divergence of production, access, and display of nodes of knowledge. While traditional models of production in the field of display-based technologies tend to concentrate on either the product (the game), or the hardware (display), DSL sees workflows and methodologies that incorporate and evolve the two in a constant communication for the life of the product. For DSL, this communication begins with the recognition that the landscape is the ideal and essential metaphor for addressing indigenous cultural heritage issues, and provides a rich base for branching development and production.

Thus, the networked toolkit, as represented by DSL, becomes an empowering model of research and production – at once a site for capturing, archiving, developing culturally-appropriate virtual environments, and a site for sharing, collaboration and community content development. In the networked environment, knowledge becomes more powerful as it is shared and deployed [7; 8; 9; 10; 11; 12]. DSL has grown through this network model. The umbrella of digital content and database development has provided a rich sandbox of opportunities for researchers, communities, educators, archivists, government and non-government organizations alike.

How we see, store, integrate and serve knowledge across the network is vital. Rather than merely seeking to refine and consolidate existing forms of knowledge – film, 3D animation, or game technologies – DSL has sought to provide methods of access and creation across combined knowledge bases, as it concentrates not only

on the tool, but shapes itself to support and enable the voices which are carried upon and create the tool.

4. The Gestalt of the DSE

To make sense of how the DSL game environment is interpreted, we can draw on another Eurocentric analogy – the Gestalt. In the Gestalt's view of thought and existence two distinct world views emerge – the external or phenomenological world we live and the internalised or noumenal world. The latter is a reconstruction of the former. Hence, in Gestalt terms, the 3D gaming environment used in DSL is a reconstructed world. As we move through the phenomenological world, things come in and out of it. We can add or remove these things from our noumenal or internalised worldview. In this sense, the DSL game environment is a reconstructed, internalised or noumenal world. The game environment is used to re-project the phenomenological landscape into a virtuality which is not that different to what we would see if we closed our eyes and imagined it. On the one hand, it is also a wayfinding schema for fathoming the conjunction of the noumenal and phenomenological worlds. Both worlds are circumscribed by the boundary of our perceptions of the environments around us – the extent of our ability to detect things in our immediate environment. This boundary moves as we move. Within its bounds, we attach personal significance to things we think of as important in the landscapes encountered; we attach cognitive information to these 'nodes' of importance. For example, we might say, or think, something like: "there's the big tree with the yellow bark"; or, "there's the big black rock by the creek"; or, "there's the burrow where the echidna lives." Movement between these nodes helps construct the spatial and cognitive narratives we use to make sense of our environments. It is the narratives we construct about the data that gives the data its cohesion, and we can revisit it to make sense of the, otherwise, isolated nodes of data. Embodied in movement and wayfinding navigation, these data nodes are joined using a narrative scheme. This often takes the form of conceptual metaphors. For example, "that big black rock, also looks like a wombat," or deeper still, "that rock 'is' wombat which 'is' the totem for my grandfather."

It is a spatial, metaphorical, and historical, collective-memory-narrative. In the game environment, it builds up as players or 'inter-actors' navigate the nodes. These inter-actors build a Gestalt. It is an example of the notion of the extended mind; that our cognition is not only contained in the internalised mind but is extended out into the phenomenological world – we use external props, mnemonic devices, all sorts of external data, including all sorts of technology and machines to build our narrative of the world as we find it – from feeling the warmth of the sun on one's face, to using a stone as a tool or weapon. In this sense, our cognitive processes are plastic [13]. In fact, we need to extend it into the environment to test truth – "is that really the way that rock looks?" We may compare, handle, explore an

object's function, to test the validity of our initial assumptions. In this way, we test for change. In turn, our noumenal world builds up a narrative over time [14].

The noumenal world narrative can be thought of as that which is established through behaviour, ritual, or habit. For example, imagining an escalator is in motion as we walk up it, when it is not, because we are so used to it in motion that the notion of escalators always in motion is embedded in our narrative of the noumenal experience of climbing an escalator. It is this continuum of the mind-body-environment that means technological things within the environment are also where our consciousness lies. We cannot isolate our consciousness in one or the other – in the immediate phenomenological or that which is extended by the tools we use to explore it. Indeed, in Deleuze and Guattari's [2] terms, if phenomenological thought, dependent on relations with the world, draws also from these relations what happens when this relation is reversed, and the relation to the world, which is fundamentally a spatial relation, now depends on thought, on thinking this relation anew? Are they not one and the same? Are not thought and spatial relation intertwined in the phenomenology of our existence in the world? If we can accept this premise then, 'I think, therefore I am' does not seem so far detached from 'I think into existence that rock'. This is what is enacted in the game world – a space both real and unreal, somewhere in between the phenomenological and the noumenal, or dreamlike.

5. A Flattened Ontology

What we find within the DSL environment, within the specific context of the Aboriginal cultural experience, is that the spatial, metaphorical, and historical narrative, like the landscapes it re-presents, is contained within an epistemologically flattened ontology. Rather than a hierarchical ontology, where some things, events, or occurrences are more important than others, in the DSL environment, the narratologies constructed allow for the existence of entities which otherwise would not fit into a hierarchical dataset. For example, it allows for the existence of 'dreamings' (Dreamtime: in Australian Aboriginal terms, the time of creation of all things) and all the entities that go with dreamings, that may or may not manifest themselves. There is also the possibility of allowing the categorisations of human and non-human – so essential in Western thought – to be eroded. This erosion of categories privileges an ontology that is founded on the sentence of the entities of land and the possibilities of metamorphosis between human and non-human. They may not always be there, but there is a metaphysical believing that they exist, and so they are able to be injected into our flattened game-based dataset because it is flexible enough to allow these new fields to emerge – for the moment that the narrative is played out.

In the phenomenological world of the ritualised performance – the *lingua franca* of Aboriginal storytelling – this is acted out time and time again. Every

performance is an improvisation. There is every chance, and acceptance, that entities previously unknown may, or could, emerge. The role these performances play is that they test the narrative every time for the correct relatedness of human and non-human entities (this is part of the storytelling truth-testing notion mentioned earlier.) Unlike the rigidity of the Eurocentric or Western tradition, in Aboriginal storytelling through performance there is no subservience to a tradition. Instead, every time there is a performance a truth is tested and that truth only lasts until the next time it is performed. In Eurocentric terms we would say this is allowing for variance – we cannot always say what the weather will be like in the following year. But in Aboriginal socio-cultural terms of understanding ritual performance and natural phenomena are inextricably linked – one informs the other. For example, if the blowflies do not come, indicating a good time for hunting crocodile eggs, then there is a reason. Even if they are not able to articulate why, it is still accepted. Hence, in every instance, the blowflies coming is a unique event. There may be a pattern, and the pattern may be recognised, but that pattern is unique on every occasion. If the blowflies do not come, then they look to the narrative of their everyday actions – the performance of that narrative – to see if something was wrong with it. One explanation might follow a scenario such as: "Uncle Joe wasn't here this year because he died." Hence, the whole performance was not correct in the acting out of its narrative. Some nodes of data were missing. The blowflies 'not coming' is attributed to this. There is a direct connection between performance and a phenomenological outcome which is constructed in the internalised noumenal world of the narrative with consequences in the phenomenological world that is lived [15]. Thus, truth-testing as improvisatory performance is essential.

6. Sequitur

In Eurocentric terms, we would generalise truth-testing algorithmically and say a solution applies in all situations. But even Western science has a problem with this – a solution may not be provable in every case. We can but provide a statistical average based on the probability of something happening. In Aboriginal culture, they do not have to accept this. Every time the truth may be something else, and they are ready for this. In the West, the truth is absolute, an absolute rule, generalisable, and then it is represented somehow, symbolically, as an equation, as solid knowledge, as symbol encapsulating the knowledge. In Aboriginal terms, the narrative is emergent, contingent – the narrative starts again once the performance starts again – nothing is concrete. The difference is in the West's acceptance of the absoluteness of truth (as data).

It is here that we come full cycle. If we accept that Western truth is founded on an unprovable proposition – *cogito ergo sum* – then, what the use of the 3D game engine provides is a landscape metaphor with a flat

ontology that does not dispute the transience of the narratives constructed within it but rather elevates each performance into a meaning making-journey; a unique event that reflects the essence of the ritual of Aboriginal storytelling, as knowledge that must be 'done' or performed in order to continue to be held as true.

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