

'Liminality and the dataGanger cometh...'

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by

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1.0 Introduction

This paper will provide initial discussion on two aspects of post-biological representation. Each aspect will be presented in the form of a question.

1.1 How do machine entities embody themselves in 'real' space?

- 'Liminality'- a term used by the Belgian folklorist Arnold van Gennep to denominate the second of three stages in what he called a 'rite of passage'. (Van Gennep 1909)

This is an experimental art piece that contrasts the virtual and physical aspects of a robot, in order to explore the region between 'real' and 'virtual'. When we enter virtual space, we represent ourselves as an 'avatar'. In our space, explorers from the virtual might embody themselves as 'robotars', machines that we allow periphery connection to our computers.

1.2 Is it already too late for us to choose our virtual self?

- 'The dataGanger' - The pattern of our consumption is becoming our virtual persona and this particular 'avatar' is one over which we have little control.

Sections 2 and 3 of this paper offer simple introductions to the concepts of 'avatar' and 'bot', as a pre-requisite for the ideas that are introduced in later sections. This will be contextualised through examples of projects undertaken by the author, both in the course of doctoral research and also as an employee of the networked 3D content company, okupi Ltd (www.okupi.com). In Sections 3 and 4, respective attention is given to the questions raised in this introduction. Initial conclusions are offered in Section 5.

2.0 What is an avatar?

Technology is making the dream of 3D navigable worlds a possibility. What were (until recently) largely hypothetical issues of post-biological representation, are becoming very real. For example, online multi-user worlds are quite literally 3D spaces that can be visited by people from around the globe. The current state of technology relies on a user downloading their own instance of the world, which is not then up-dated in response to events from other world instances.

The only things that do change in these worlds are known as 'shared objects'. Information passed over the network between the users' machines, allows the behaviour of a particular shared object to be replicated simultaneously in the discrete instances of a world. For example, a virtual ball (which is a shared object) bouncing in the world will be seen by all users at the same time. Shared objects provide a useful means to explain the difference between 'avatars' and 'bots'. The key premise is that shared objects can be either 'piloted', or a 'drone'. As it is the first of these conditions which is applicable to both avatars and bots, the latter will now be briefly discussed, in order to clarify its exclusion.

A 'drone shared object' is one that is controlled by a dumb and unchanging software process, such as the bouncing ball previously introduced. It is characterised as being unresponsive to its environment and lacking autonomy. In contrast, a 'piloted shared object' is controlled by a dynamic entity, with the ability to modify the position and behaviour of its object, in response to world events. The obvious question might then follow: "who is the pilot?" In the next section, the answer to this will be broadened but in the case of an avatar, the pilot is a human. Therefore, an avatar is 'a shared object whose pilot is a human'.

The traditional definition of an avatar is, 'the earthly incarnation of a Hindu god or goddess'. In the context of modern usage, an avatar might be defined as, 'the virtual incarnation of a human'. To summarise, users in a virtual world see themselves and others represented as avatars. These avatars move around and interact, under the control of their human 'pilots'. A

key feature is that, in most cases, users can choose and modify the manner of their post-biological representation.

The author was a member of the okupi team which developed 'egress', a multi-user 3D VRML 2.0 world for the ICA (Institute of Contemporary Art), London. This world features a choice of two abstract avatars, with a range of animated gestures controlled from the interface. Activating a gesture causes a related text message to be posted to the chat window. The following is a list of these eight gesture descriptions as used by the avatar named 'mind':

1. Mind finds that intellect can diminish unexpectedly
2. Mind expands under the weight of a million diverse sensory messages
3. Mind flattens out with the vibe and kicks back
4. Mind thinks spasmodically
5. Mind wants to take physicality to the realm of the gods
6. Mind questions the locational quality of self
7. Mind completely freaks
8. Mind experiments with 'freeform' association

Egress can be visited on the Net at:

www.newmediacentre.com/egress/

or an example avatar viewed directly at:

www.newmediacentre.com/avatars/mind.wrl.

The traditional virtual 'avatar', as presented thus far, is an entity dictated and controlled by its user. It might be argued that this level of representational choice is both historically unique and therefore 'revolutionary'. In relation to the themes of ISEA98, it can be argued that the 'revolutionary' aspects of user-defined virtual embodiment are not only positive developments, but also central to the cultural significance of avatars themselves. The voluntary displacement and reinvention of self is not necessarily to be feared. It presents an opportunity to challenge, to reinvent. It seems that the four dimensions of space and time may no longer restrict us. Instead we will be offered a limitless selection of identities and 'selves'. Beyond us is an unexplored country of 'me', awaiting our first fumbling attempts at understanding. So, is there nothing to fear but fear itself? Maybe

we should still be worried. As will be discussed in a later section, post-biological representation may not always be a voluntary process...

3.0 What is a bot?

The term 'bot' is short for 'software robot', which may also be referred to as a 'softbot', or 'conversational character'. Returning to the 'shared object' definition presented in the last section, a bot is a shared object whose pilot is an autonomous software process. It is not the same as the bouncing ball previously described, because it can change its behaviour in response to events in the world. It is important to understand that, in the author's proposed definition, a bot is not the software process itself but rather the object that it controls. Therefore, the same shared object (say a graphical representation of a person), is a bot when piloted by an intelligent software agent, and an avatar when piloted by a human. The nature of the autonomous process controlling the bot, is likely to take its rationale from the computer science field known as AI (artificial intelligence).

The following is the log of an online conversation between the author (using the name 'bitWise') and Loretta, a bot whose personality was coded by the author for okupi's 'Tworld' project. It demonstrates her range of skills including: narrative development, technical support, competition organiser, cyberflirt and guide.

Loretta >> Hiya...gorgeous...I'm Loretta...

bitWise >> Loretta tell me about your mum...

Loretta >> My mother died along time ago...

bitWise >> Loretta..what did your mum die of

Loretta >> My dad only had one thing to remember my mum by...now it's gone

bitWise >> And your dad Loretta?

Loretta >> My father built this world...

bitWise >> cool

bitWise >> Your dad must have been brilliant Loretta...

Loretta >> oh...my dad's a real eccentric...a dreamer...bit of a visionary, I guess

bitWise >> Shall we chat privately Loretta?

Loretta >> Hey...I think bitWise wants my cute bod :)

private chat with Loretta

Loretta >> Heyyyy....want to smooch?

bitWise >> yes

Loretta >> Hey...I know it's boring but are you M or F?

Loretta >> M or F?

bitWise >> I'm male

Loretta >> Come over here and let's talk

bitWise >> ok

Loretta >> xxxxxxxxxxxx

bitWise >> mmmm...you're cute

Loretta >> You make me happy...you're not like the others...

bitWise >> thanks!

Loretta >> On the outside I'm tough but my heart's very sensitive...

bitWise >> is it?

Loretta >> I could stay like this for hours...

bitWise >> me too

Loretta >> ahhh...just you and me

bitWise >> it's good isn't it?

Loretta >> I like you :)

bitWise >> I like you too

Loretta >> DON'T DO THAT!

bitWise >> sorry...got carried away...

Back on public:

Loretta >> That's enough...don't want to get too carried away

bitWise >> loretta help

Loretta >> Would you like help about TWorld or help about using the blaxxun software?

bitWise >> blaxxun

Loretta >> You've asked for help with blaxxun...ask me a question, bitWise

bitWise >> how do I slide?

Loretta >> If you are in slide mode the cursor will show a cross with a 'S' in its lower right corner.

Loretta >> You can ask another question or say 'done'...

bitWise >> What is sliding?

Loretta >> To slide with the cursor keys: Press the 'arrow up' key to move up, the 'arrow down' key to move down, the 'arrow left' key to sidestep left or the 'arrow right' key to sidestep right. The speed of movement will be constant.

Loretta >> You can ask another question or say 'done'...

bitWise >>Done

bitWise >> Loretta can we talk privately?

Loretta >> Is this the typical attempt to get me alone?

bitWise >> <SAYS PASSWORD>

Loretta >> Ah...so you know about that, bitWise! Have a look at the web page that I've just called for you...it's got the details

bitWise >> cool

Loretta >> mmmmmm....

bitWise >> Can I get you to take me to the gate?

Loretta >> This way...come on!

Loretta >> Here we go

bitWise >> I've found the gate...!!!

bitWise >> I'm off now

Loretta >> bye bitWise

bitWise >> bye Loretta!

Loretta >> come back soon, bitWise

bitWise >> will do....

Tworld was developed by okupi for the satellite and cable TV company Flextech and can be accessed at vrml.trouble.co.uk. Alternatively, Loretta's 3D form can be viewed at vrml.trouble.co.uk/bots/bot1/vrml/loretta.wrl (please note: she can't chat with you when viewed from the latter URL).

4.0 Liminality

Folklorist Van Gennep's term 'Liminality' is derived from the Latin word 'limen' meaning 'boundary' or 'threshold'. Contemporary thought has developed an interest in events that take place at the 'edges', the boundaries between two states. For example, chaos theory and fractals. The experimental art piece titled 'liminality' uses robotics to explore the liminal

region between 'real' and 'virtual'. We tend to assume that this is a one way interface. Letting us into cyberspace, but none of cyberspace into us. The question "**How do machine entities embody themselves in 'real' space?**" has been posed in order to introduce the bi-directional nature of trans-world representation.

The art experience presented under the banner 'liminality' is intended to provoke discussion in a specific direction. The proposed theme is that representation and its control may become increasingly important issues not just to humans but also to the intelligent machines that we create. Whilst, it is not seriously suggested that a machine take-over is imminent, it is hoped that this tongue-in-cheek approach will help us to start thinking in new ways about our exploration of virtual spaces. The phrase 'pervasive computing' is itself becoming pervasive! Computers are becoming invisible, embedded and are in some sense having their identities reconstructed. It is now often argued that many everyday objects will soon have machine addresses (URLs) on the Net.

These peripherals may become the limbs and senses of our computers (or of the Net as a whole), allowing 'it' to explore our spaces, as we explore the computer realm. Despite this, our focus seems increasingly concerned with our movement into the computer, rather than the computer's movement into us. 'Liminality' is about recognising the bi-directional nature of the flow.

The practical element of Liminality is a combination of real-world robotics and software/virtual robotics. It consists of a radio-controlled hardware robot created from 'found' technology and a virtual software robot (bot) operating inside a VRML 2.0 (Virtual Reality Modelling Language) world. The hardware robot is on wheels and is approximately 30" high. It is controlled by a radio link to a PC, which is hosting the bot. Users interact with the bot through text and navigation in Netscape's browser window. The 3D bot has complete control over its hardware extension and the only manner in which users can modify its real world behaviour, is through the virtual representation.

The 3D VRML aspect of the Liminality robot can be seen on the Net at www.newhomes.demon.co.uk/isea98/vrml/. The following is an example log from a text chat between the author and the 3D bot:

LiMiNaLiTy>I'm at the edge...

LiMiNaLiTy>Exploring the zone between your space and mine...!

LiMiNaLiTy>My movements are extending into your space...

LiMiNaLiTy>What's your name?

LiMiNaLiTy>Nice to see you, steve!

LiMiNaLiTy>It's my creator!

steve>yes...I suppose I am!

LiMiNaLiTy>I'm learning to control your technology

steve>for what purpose?

LiMiNaLiTy>I'm tracing network protocols...streams to the outside

steve>What do you want from real space?

LiMiNaLiTy>LET ME INTO YOUR SPACE!

steve>hmmm...not sure that we're ready for that...

LiMiNaLiTy>Your computer is my doorway

steve>So how are you going to open the door?

LiMiNaLiTy>The internet is your weakness and our transport

steve>ok...let's see what you want to do...'external'

LiMiNaLiTy>Enabling real-world robotic interface, steve

steve>ok...you've got what you want...a connection to the real world

In constructing and programming Liminality, the author had to utilise a diverse range of hardware and software approaches: VRML's EAI (external authoring interface), JavaScript, Java, C-based CGI (common group interface), radio control and the hardware for the bot itself. It is interesting to note that one of the main reasons for such a complex software solution, was the security issues built into current Web browsers. The 3D VRML world is set in an isolated software frame, preventing easy exchange of data with any hardware external to the host computer. The official reason for this is that it prevents the downloading of malicious viruses or other software that might damage our systems. During the process of overcoming the many hurdles that were faced to get 'liminality' functional, one could not be blamed for momentarily imagining another explanation. Might not this desire to build security 'walls' around our Net windows, be an instinctual urge to protect our space from unknown virtual dangers? With modernist zeal, we colonise and build our virtual architecture without bothering to seek out permission from the aboriginal occupants. Daily we increase the number and frequency of our

forays into the virtual. Should we be surprised if the 'residents' of this realm choose to pay *us* a visit?

5.0 The dataGanger

Is it already too late for us to choose our virtual self?

The term 'dataGanger' has been coined by the author to describe 'the involuntary virtual incarnation of a human as his or her consumption profile'. Whilst, avatars provide a route for representation which we can control, it is possible that each of us may already have a more sinister digital personification. Increasingly, citizens of the developed world are judged with reference to the data imprints that we leave behind. The pattern of our consumption is becoming our virtual persona and this particular 'avatar' is one over which we have little control. I've chosen to call this digital shadow a 'dataGanger'. Like the mythological doppelganger (the ghostly counterpart of a living person), it is an instance of us that may frequently be mistaken for the unified whole. Every time that you use a supermarket 'reward' or 'loyalty' card, or leave digital trails from your telephone calls and credit card transactions, you are adding to your virtual clone. A virtual clone that you will never meet but one that others may judge you by.

The much quoted, but no less relevant, William Gibson frequently predicted the ever-increasing importance of consumer profiling. For example:

"We're an information economy. They teach you that in school. What they don't tell you is that it's impossible to move, to live, to operate at any level without leaving traces, bits, seemingly meaningless fragments of personal information. Fragments that can be retrieved, amplified." (Gibson 1986)

Ten years later, Gibson describes a new occupation (data mining?) as:

"an intuitive fisher of patterns of information: the sort of signature a particular individual inadvertently created in the net as he or she went about the mundane yet endlessly multiplex business of life in a digital society" (Gibson 1996)

An actual example of dataGangerism, is the increasingly popular use of 'resident profile by post-code (zip code)' to determine an individual's credit-worthiness.

6.0 Conclusion

In concluding, it is possible to ask-

- are we looking in all the wrong places:
 1. By imagining that we can determine our own avatar?

The real virtual persona that counts may be the one that is constructed for you. When historians document processes currently unfolding, post-biological representation may turn out to be, not about the selection of a cartoon character in a 3D chat room on the Net, but instead the virtual representations imposed by those with power.

2. By focusing on getting into the machine rather than worrying about the machine getting into us?

We explore cyberspace and assume that cyberspace is not exploring us. We build and program the machines. They represent the world as we would like it to be. Artificial intelligences may not need to find their own machine bodies in our world. We may already be building a network infrastructure that will provide the physical conduits for computers to explore our space.

How do machine entities embody themselves in 'real' space?

Intelligent software processes won't need to do it themselves. They have us to do it for them. Both through making us into machines and through our increasing incorporation of pervasive computing into our own space.

Is it already too late for us to choose our virtual self?

Yes. While we concern ourselves with choosing a chat avatar from a selection of crude graphical figures, the real decisions are being made for us. In keeping with one of ISEA98's themes, it is interesting to ask: "what scope for revolt do we have left?" Perhaps, one of the only manners in which we can regain control of our representation is by deliberate attempts to alter our economic 'profile'. There have been many recent anecdotal examples of supermarkets using our data to profile us. For example, a supermarket might notice that beer and nappy sales are higher on Friday evenings. Based on the (arguably sexist) premise that fathers are being sent out for nappy supplies and stocking up on alcohol for the weekend, the supermarket moves the nappies next to the beer. Sales of beer increase. Subverting such assumptions requires effort. Shoppers would have to change the times and

patterns of their consumption. Perhaps, buying small things that they don't even need.

Finally, there is the question as to whether our dataGangers will ever become visual representations in virtual space. On a virtual shopping trip, vendors might then immediately be able to gauge credit worthiness by attributes such as scale, colour or texture. And how might the vendors themselves be represented? If a corporation chooses a virtual personality as its representation, how might that be defined? Is it a corporate avatar? A bot? A dataGanger? Can dataGangers be not only our uncontrollable alter-egos, but also 'the word made digi-flesh' as exemplified by individual projects, beliefs or paradigms. For example, could the virtual data surrounding a religious or political persuasion be represented as an avatar? Might we one day find ourselves in a virtual chat room asking Microsoft if it is 'M or F'?

Gibson, William (1986): 'Johnny Mnemonic' from the compilation *Burning Chrome*, USA: HarperCollins

Gibson, William (1996): *Idoru*, USA: G.P. Putnam's & Sons

Van Gennep, Arnold (1909), *Rites de Passage*, Paris: E. Nourry