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# Strange Manifestations of Three-Dimensional Intelligence in the Digital Era.

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## **Finding Perspective**

Digital holography is one of the most advanced forms of optical recording to date, making it particularly apt for the creation of visual fakes and forgeries. Not made for deception – as copies from originals can be, but as a representation of reality. My interest with three-dimensional digital holographic portraiture, and in particular portraiture of celebrity, concludes that the 'hyper-real' holographic digital portrait delineates taste in the pursuit of surface reality. Other parallel technologies such as artificial intelligence and robotics seem equally determined in their pursuit of their facsimile of mankind, all of which rests comfortably in the entertainment arena. Never before have two such diverse disciplines aimed toward the same goal. For on one hand we have the counter-culture of the holographic industries, on the other we have classified researchers pursuit of the ultimate robot sciences. Both moving closer to the ultimate illusion of life, both understanding little regarding the effect these breakthroughs have on popular culture. To quote from Lewis Wolpert writing in *'Sceptical Inquirer'*:

*"It is important that we recognise the difference between science and technology, between understanding and making things. Reliable scientific knowledge has no ethical content, it is the way the world is."* Lewis Wolpert.

# **Strange Manifestations of Three Dimensional Intelligence in the Digital Era**

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## **Abstract**

Digital holography is arguably the most advanced form of visual recording to date. But are holograms "mere" recordings of objective visual reality or creative artefacts capable of expression, interpretation and deception?

The same question was asked of photography in the early 19<sup>th</sup> century. Dismissed originally by artists as a mechanical recording medium, it became in the hands of pioneers such as Bresson and Brandt a subtle artistic tool capable of the most delicate expression and artful deception. Skilfully selective framing of the image, manipulation of objects and lighting in the scene can transform the banal into the dramatic or reduce the sinister to the mundane (Nazi rally image from RDN). Postproduction techniques can add to the deception, as illustrated by Victorian snapshots of fairies and spirits and the "un-existing" of political rivals by Stalin in the Soviet Union. People were added and deleted both from photographs and real existence as easily as pressing the delete button in Photoshop™. Those early attempts at virtual reality seem clumsy to us in retrospect, compared with the power of modern digital imaging.

This paper argues that, like photography, digital holography is certainly more than a recording medium. It is a tool that can substantiate fantasies that previously never existed or comment subtly on the real world, blurring our grasp of that reality to the point where objectivity is submerged in a sea of imaginings. The extreme reality of holograms challenges our understanding of what we mean by "real" yet their essential ambiguity is as unsettling as their verisimilitude is reassuring in a post McLuhan age of "virtual reality" experiences, "reality TV" spectacles and "celebrities".

Celebrity portraiture is a field that has always been susceptible to flattery and artifice. Can we rely on a hologram of a contemporary celebrity to be any more objective than say a 16<sup>th</sup> century Holbein celebrity portrait in oils? This paper reports on the creation of one such portrait and comments on the balance of technical and interpretive skills employed to create the image.

## **Three-Dimensional Encounters of a Human Kind**

We have always been obsessed with recreating our own image, as objects of worship, exemplars of beauty and taste, expressions of power and wealth or more personal representations, for example Dortmund? woman, painted classical Greek statues, aristocratic portraits, Tussaud waxworks, family snaps (figures). Our technological and artistic capabilities can be tracked historically through these survivors.

*\* Recent advances in technology have made it possible to create digital holograms from computer-aided designs. This advance opens the doors for subject other than representation of the actuality of our world, creating vistas that could not occupy real space, only holographic space.*

In an age of superficiality surface appearance has become as important as the contents, if not more so, as witnessed by current vogues for self improvement and re-creation through diets, exercise and plastic surgery. This obsession with surface effect is reflected in the bizarrely collectable packaging of the digital century. This reference point is the artefact, slick two-dimensional printed stuff. Glossy merchandise packaging, mainly jet black shiny hi-quality cardboard boxes that people can take home and keep. Take a look at the boxed set of James Hamilton's 'Terminator Collection'. The packaging for this, 'Terminator – 'terminator 2: Judgement Day' (*Illustration One*), has an animated hologram of Arnold Schwarzenegger morphing from human to killer cyborg – a fantastic visual effect, one worth forking out a few dollars more for a truly collectable item that maybe subconsciously reflects our unease about where we are headed.

The price we pay to satisfy the insatiable demands of public appetites for computer games, virtual reality systems, web space and digital holography is a proliferation of counterfeits: simulacra of these selfsame same digital illusions of reality. So which is genuine? And why is one more legitimate than the other?

Ironically a way of countering this piracy is to use security holograms to protect the genuine article. An 'Optical Verification Device' hologram will often have the word "original" floating in space above the surface. This is the use of an illusion to guarantee the authenticity of an inherently illusory reality. As David Lowenthal put it in the catalogue 'FAKE': -

*"Technology has simultaneously promoted the skills of forgery and of its detection" - David Lowenthal (1)*

Holographic space is the hyper-un-real often described as a "Mirror with a memory". The ethereal ghosts of technology. Scientifically defined as optical numerical memories created with lasers. Perhaps a mirror where content is not yet deeply thought provoking, spiritually embodying, philosophical or prophetic. But the power of the image can be measured in megatons. Grotesquely ugly, original and unique but also insanelly funny and utterly banal, like the head of the great 'OZ' projecting before Dorothy, our curious eyes cannot resist looking toward its face, to see the eyes, perhaps to see within it our own face. (*Illustration two*)

Comment: Why ghosts?

Can digital media access reality? Well possibly and some are trying. People such as Steve Grand. In his book 'Growing Up With Lucy' (3), he describes his attempts at building an artificially intelligent android, later to become known as Lucy. (*Illustration three*). I guess Steve Grand's work makes us question what it is to be human, and the birth of Lucy has massive implications for us all. In part four of his book, Steve address's the human Sprit, quote: -

*"When people ask me questions about this project, they usually aren't really interested in artificial intelligence, per se. To some extent, neither am I. What they are really interested in is themselves and what AI may or may not have to say about the human condition. They worry about how AI might alter their future, or their children's future, and they worry about what the idea of machine intelligence says about the things that they hold dearest, such as consciousness and emotions. And I don't blame them".*

Our pre-occupation with reality is our obsession. What is real? 'Fake real' such as 'Big Brother' style reality television shows and 'docudramas', or 'Real fake' such as fantasy virtual reality games and The Sims. We enter these worlds Alice-like through the digital mirror that increasingly reflects our own image in the faces of the moving avatars on screen.

I mentioned earlier my interests with portraiture, and in particular, celebrity portraits. A celebrity is not a person, it is a construct created for the media and the marketplace, a surface appearance that masks the inner reality. The true identity of the celebrity figure is often totally different to the perception the public has of them, especially their adoring fans. An example of one person profoundly interested in the ambiguity of reality is David Bowie, and on meeting him I found that he, like many others, was immediately intrigued by the realism of holograms, particularly digital holograms (4). *(Illustration four)*

### David Bowie In 3D

At his request I had the opportunity of working with him on a project planned for the launch of his pre-millennium album 'hours' in 1999. The following describes a little of that odd project:

Its 5.30pm when I leave the Paramount, a small hotel just off Times Square in New York City. Gliding smoothly across the twisted tarmac in a city limo I arrive at what looks to be an unused storage building in down town Varick Street, noticeable, in this pre - 911 City, for its shabby emptiness. No signs, no doorman, no features to memorise and no evidence of what awaits upstairs. I enter the lobby elevator. The walls are a highly buffed copper metal art Deco design, giving a passenger a pre digital illusion of infinity through reflection upon reflection. I arrive at the penthouse suite and the door slides opens to reveal a hive of activity, a vast open plan office with many people on telephones or tapping away at computer consoles. The reception point resembles an old style ticket booth found in antiquated movie houses. Above it hangs a sign 'CHUNG KING STUDIOS'. I feel outlandish as I announce myself through the small petitioning window to the young woman on the other side. My voice emulates an adolescent boy; my nerves are getting the better of me. Beside the booth are large walls covered in a thick dark brown plate glass, which impressively overshadows a hallway beyond.

One of the glass walls gently slides open and I see now it's an entrance to a long corridor and I make out a figure standing at the other end. The figure is that of David Jones (aka Bowie). Gone is the scarlet red hair, replaced by long blond. The greying goatee beard however, remains.

We start by Bowie introducing me to his co-producer and musician Reeves who is laying down the final tracks to a CD.ROM interactive called "The Nomad Soul". This is Bowies pet project for EIDOS of 'Laura Croft' fame. The groans emitted from a surround sound in the recording studio are that of a female in sexual climax, "a voice for one of the computer animations" he tells me. My tour continues and we move on to an area known as the green room. A place to reflect and talk. I'm not doing much of the latter because I'm too busy absorbing, too much in awe. A huge digital flat screen T.V dominates the green room, standing central - volume down. What looks like his work desk occupies one corner of this room. A small laptop computer can be seen open turned on. Presumably the same tool that transmits and receives his personal E-mail and monitors one of his numerous web sites. Amazingly the green room has no curtains, no blinds. It appears open to the world, his porthole to reality.

**Comment:** Does it matter that its Sony? Do you want to advertise them gratuitously?

After project discussions, we leave the white light of the green room and enter again the recording area where Reeves seems immersed in banks of digital monitors; G4 apple Macs listening and recording sound. Here I open the first of my two boxes and show the world's first full colour holograms, test shots made with a complex system of lasers but only needing the simple lights available in the studio to see.

*Any sufficiently advanced technology is indistinguishable from magic. - Arthur C. Clark*

Like a magician, from the second box I unveil another world first and project a computer-generated hologram into the space before him. Bowie is speechless, as many people can be when viewing these images. He calls over Reeves who shares his interest. I look to Reeves for normality and he nods a

wink unseen toward Bowie. This, I realise, could be a good time to leave and so I start to pack my things. For the first time I look around the recording studio and notice that I'm standing in a very large room that appears to have vast quantities of black velvet draped everywhere. The walls, ceilings, floors, presumably to dampen the acoustics. Like a black hole it absorbs so much light I find it hard to see underfoot and on hearing a 'crack' find I'm trampling on Bowie's personal headphones. He leads me out of the room as far the point where we first shook hands as if he couldn't go any further.

Four weeks later I'm invited to bring my holographic recording system to the photo shoot for the album cover of Bowie's 'hours'. In total, my cameraman, John Wiltshire, filmed twenty-three minutes of Bowie in various actions directed by me. The resulting dramatic footage is captured as a series of three-dimensional lenticular photographs and a large animated digital hologram of Bowie dancing to the beat of a digitally re-mastered tune. The images show Bowie cradling himself, as if nurturing his nascent future holographic self inside a clinically blue and white birthing room.

### Summery

Not since the Renaissance have the visual arts and engineering sciences worked so closely together in their pursuit of the ultimate facsimile of mankind. So what happens when our holographic portraits merge with other parallel technologies, such as artificial intelligence and robotics? Will the resultant avatars be illusions or reality? And how will it affect our own reality if these mimics of ourselves can have an existence that is independent of our own, ie. When your reflection walks away into its own life?

My interest with three-dimensional holographic portraiture, and in particular portraiture of celebrity, concludes that the 'hyper-real' holographic analogue portrait delineates taste in the pursuit of surface reality. However, this is not so with the \*digital form of hologram as post-production manipulation offers the computer aided artist opportunity of intervening the verisimilitude. Other parallel technologies, such as artificial intelligence and robotics, seem equally determined in their pursuit of the facsimile of mankind, all of which rests comfortably in the entertainment arena. Not since the renaissance period have two such diverse disciplines such as photonics and engineering, aimed in parallel toward the same goal. On one hand we have the counter-culture personalities attracted to the practice of holographic illusion, and on the other we have the engineering pursuit of the ultimate Robot. Both using technology initially developed for warfare, both moving closer to the ultimate illusion of life. Each understanding little regarding the effect these breakthroughs have on popular culture and each feeding results back into the very chaos from which they attempt to escape.

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