**WE NEED A NEW LANGUAGE OF EMBODIMENT FOR 3D TECHNOLOGIES ARGUES MARK WILSHER**

The unnerving feelings of dissociation triggered by the works of artists such as Oliver Laric, Laurie Anderson and Rachel Rossin show that, if we are to spend more time in the virtual world, it is important not to leave the body behind.

# Virtual and Other Bodies

**Oliver Laric**
*Lincoln 3D Scans*
2012-

With prosumer software and technology increasingly available, three-dimensional scanning and modelling is becoming more and more a part of everyday experience, and finding a place within the art world. What was once almost unimaginably exotic is now routine in a world of computer animation, Google SketchUp and affordable 3D printing.

One of the more familiar artistic tropes to emerge in recent years has been the use of this technology to create accurate replicas of historical artefacts. Artists have their own specific motivations for doing this. In 2015, for instance, Nora al-Baldri & Jan Nikolai Nelles announced that they would be symbolically returning a looted bust of Queen Nefertiti to Egypt for the OFF Biennale. The object was printed from a set of data derived by smuggling a hacked Xbox Kinect into the Neues Museum Berlin, surreptitiously scanning the 3,000-year-old bust in its glass case, and subsequently cleaning up the data to make a freely downloadable 100MB STL file. The American-Iranian artist Moreshin Allahyari aimed at a more contemporary nexus of geopolitical conflict with her 2015-16 series 'Material Speculation: Isis'. Roman and Assyrian artefacts destroyed by IS were recreated in a transparent petrochemical plastic based on scans, photographs and videos. A USB drive was embedded within each object carrying all the data as well as maps, historical and scholarly information, in an attempt to preserve at least their memory for future generations. Alongside Oliver Laric's more well-known *Lincoln Scans*, 2012-, what these projects have in common is their grounding in the validating authenticity of apparent indexicality. Freeing Nefertiti from her high-security vitrine in Berlin is effective because we are convinced of the accuracy of the 3D model. If IS has destroyed precious artefacts in Iraq then at least we can preserve precise information about the lost objects. Referring to the forensic use of such scanning, Hito Steyerl (Interview *AM*375) has called it a 'new technology of truth'. As Rosalind Krauss identified in her seminal 1977 essay 'Notes on the Index', the accurate and truthful trace of an action or event was a key component of the shift towards an art which presented rather than merely represented. For sculptors, the process of casting enables the indexical trace of an object to be most effectively captured. It is the wealth of contingent surface detail that makes Rachel Whiteread's work, to pick a particularly clear example, so immediately compelling.

**Langlands & Bell**
*The House of Osama bin Laden*
2003 interactive computer animation

It is easy to see how contemporary scanning and computer modelling technologies resemble the sculptural process of casting. It is a mechanical process that doesn't require the subjective interpretation of an artist to shape a form. The wireframe meshes of a digital 3D model before rendering even resemble the hollow bronze skin of a cast sculpture in their fine duplication of purely external surface detail. This is not the only visual similarity between a physical and a virtual sculpture. Before a 3D model is given a skin – wrapped in its textured and coloured surface – it has a neutral, often light-grey appearance that recalls stone sculpture. This presumably unintentional resemblance is another element of technological visual culture that Laric and others have played with in modelling classical statuary. It inevitably recalls the high Postmodernism of the 1980s, with its frequent use of classical references as symbols of the 'free-floating' signifier cut loose from any connection to a particular time or place. In the critical writing around digital modelling projects, such that exists so far, the discourse sounds a lot like postmodern problematics 2.0. Questions of originality, reproduction and ownership predominate. The ontological problem of the relationship between virtual and 'real' objects is like nothing so much as Jean Baudrillard's simulacrum given tediously prosaic form. After all, we are by now well used to thinking of .doc files as real 'documents' and virtual desktops as places to dump 'stacks' of material.

In contrast to this, given that 3D scanning and modelling techniques are essentially virtual sculpture, would it be possible or desirable to think about them in terms of the traditions of sculptural discourse? In the early days of computer graphics in the late 1960s, the only way to talk about 3D images was essentially mathematical. Writing in the catalogue for the Los Angeles County Museum of Art's recent exhibition '3D Double Vision', scientist Thomas Banchoff describes the process of mapping a cube onto a computer screen as follows: 'One simple but effective way was just to drop one particular coordinate of each point, thereby producing the front and back, top and bottom, and left and right-side views of a structure. More effective was to use matrix algebra to get coordinates for an object in three-dimensional space rotated around an axis so we could obtain on screen a whole collection of intermediate views'. The development of visual interfaces and the birth of the whole field of user-experience design mean that these days few people need to think so axiomatically about mapping the three-dimensional onto a two-dimensional screen. The tools, and the metaphors behind the tools, often draw quite naturally from the established language of sculpture. The popular Z-Brush software, which is particularly suited to creating lumpy organic forms, makes use of the metaphor of modelling with a highly plastic substance. The neutral silvery-grey default stuff that everything begins as is even called 'digital clay'. One of the many menus of specialised sculpting tools reads like a version of Richard Serra's *Verb List*, 1967-68 (Interview *AM*161). There are tools to 'pinch', 'flatten', 'smooth', 'nudge', 'smudge' or even to 'blob'.

Another well-established program, Maya, tends towards more geometric forms and makes use of metaphors like extrusion, extension and rotation almost as if using a potter's wheel. It makes sense to use this kind of vocabulary because it is a language that everyone understands and means that we are able to visualise the likely outcome of an essentially abstract mathematical operation. Indeed, it becomes so natural after a while that it is easy to forget that the model is just a representation of a set of data rather than a physical object.

The LACMA exhibition told the story of the development of different attempts to portray and use 3D images in a variety of contexts from the scientific field to the entertainment industry. This history is considerably longer than you might imagine, with stereoscopic drawings going back well into the 19th century. There was a copy of mathematician Henry Vuibert's 1912 book *Les Anaglyphes Geometriques* in Marcel Duchamp's library, which clearly provided material for his experiments in stereoscopic vision. The crystalline structure drawn over a photographic sea in his *Handmade Stereopticon Slide*, 1918-19, could be straight out of such a textbook. Artists such as Sigma Polke, Bruce Nauman, Richard Hamilton and Michael Snow have all played with the problem using novel media like lenticular lenses and holography, and were all included in the exhibition alongside popular media like red/green anaglyphic comic books and View-Master stereo viewers. But up until the invention of the selective laser sintering process (now commonly called 3D printing) pretty much every image in three-dimensions was destined to remain as just that, an image.

The irony of the huge explosion in 3D is that the vast majority of the models are built to be seen on 2D screens. Within video games and the media, a fully realised

model is often simply a more efficient way to create flat animations, allowing the software to crunch the numbers to simulate the effects of perspective and parallax. The same is true of contemporary art where we are becoming used to seeing complex forms presented to us via the screen. They might be 3D in one sense, but in reality we approach them pictorially, as Clement Greenberg mapped out in relation to the New Sculpture of David Smith and Anthony Caro 60 years ago. For him, materiality, mass and gravity were things to be transcended rather than savoured. The illusion of weightlessness and movement were important for Greenberg, with welded steel becoming 'a picture in three-dimensional space'. A modern interpretation of this aesthetic might be found in a piece like Jess Johnson and Simon Ward's *Webwurld*, 2017, which is typical of the immaterial and primarily visual landscape to be found within cyberspace (although we can only guess what Greenberg would have made of its parades of spinning limbs and hallucinatory architecture).

Arguing against Greenberg's criticism, and emphasising the role of mass and materiality, were British critics like Herbert Read and Adrian Stokes. For them, sculpture was necessarily a physical medium, and the resistance that the stone gave to the sculptor's chisel led ultimately to a happy resolution between the artist's vision and the natural tendencies of their materials. Taking their cue from Michelangelo, carving was for them the peak of sculpture, whereas modelling with a soft medium, such as clay, inevitably ranked lower down. 'Plastic material has no "rights" of its own', wrote Stokes, going on to dismiss it as 'formless mud' that always led to less significant work. A digital clay that can be effortlessly manipulated and added to would surely be the apogee of this resistance-less modelling, and again it is interesting to compare the psychedelic organic forms of Johnson and Ward's work with the tendency towards baroque calligraphic effects that Stokes identified with modelling in a more plastic medium. Software seems to tend towards these kinds of elaborate forms as a default. There is no inherent material or structural resistance to moderate the artist's fantasies.

Clearly, however, when attempting to force a sculptural reading onto contemporary 3D computer models, the essential problem is their fundamental lack of physicality. There is no 'material' beyond data. There is no substance, just an image on a screen. Two important and related effects result from this absence. The first is that, for as long as they remain held purely within the computer, 3D models do not have any relationship with the idea of scale. As you work with a modelling software package, the virtual object can be turned, spun and zoomed in or out with incredible ease. Turn the mouse wheel one way and you can fill the screen with thousands of polygons that make up one section of a surface, ready for detailed editing. Turn the wheel the other way and your creation recedes into the distance until it is just a tiny dot on the screen. The virtual space you are operating in has no connection to real space as experienced by a human being. It is much closer to the mathematician and philosopher Henri Poincaré's description of 'geometric space' as continuous, homogeneous and infinite, an abstract representation of the three dimensions of real space that is most suited to handling coordinates and geometric constructions. The ability to see at any scale, to navigate without friction between one view and another, to manipulate an object or a world so easily, might also remind us of Donna Haraway's description of patriarchal scientific vision: 'the god-trick of seeing everything from nowhere'. Haraway uses examples from *National Geographic*, images of the vastness of deep space and the cellular and subatomic worlds, the point being that the tools of scientific vision enable an apparent freedom of movement between scales and positions that claim objectivity, but in fact efface their makers' own subjectivity in the name of authority.

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Haraway's response to this god-trick is the idea of a 'situated knowledge' which acknowledges and values its origins within a specific corporeal subject position. This leads to the second important effect of data's lack of material presence. There is absolutely no relationship between the object being modelled and the human body, no relationship to the body of the audience sitting on the other side of the screen, and no relationship to the body of the artist throughout the process of making. Sculpture, and especially figurative sculpture, has historically always been seen in relation to the presence of the human body in one way or another. The body of the audience compares itself to the size and mass of the artwork in order to understand it. The body of the artist is forced to move itself physically around the sculpture in the studio to see and work from all sides. A relationship to the human body was perhaps most central to minimalist sculpture, but even an artist like William Tucker could write in 1977 that 'sculpture forms the median term, a physical and perceptual link between the human onlooker and the world'. The scale of a piece, the arrangement of its parts, even the marks inscribed on its surface all ultimately derive from an anthropomorphic relationship with its maker. None of this is true of the new forms being made in 3D today.

It is in virtual reality, in particular, that the absence of the body is most keenly felt. The current corporate rhetoric selling us headsets might talk about being able to have amazing new experiences and go to incredible new places, but the reality is that total sensory immersion is ultimately a disembodied experience. The American artist Rachel Rossin's VR work often plays with the overlay of real-world and virtual sensations, adding a virtual spike to the viewer's nose, for instance, that could be used to hook images of her digital paintings floating past in *Just a Nose*, 2016. Another piece was a partial

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and glitchy reconstruction of her apartment, including the contents of her fridge. But by the time of her solo exhibition at Signal Gallery in New York the following year, she was describing the dissociated sensation caused by spending a long time in another place: 'I was recalling the memory of what having a body was like. In VR you feel like the memory of a body, the emotional memory of a body.' In that exhibition Rossin temporarily exchanged immersive VR for the solidity of large Perspex sheets moulded over her body in a protective or perhaps memorialising gesture.

The same experience is described more positively by Laurie Anderson, speaking about her collaboration with Taiwanese artist and programmer Hsin-Chien Huang, *Chalkroom*, 2017. This award-winning VR experience and installation, currently on show at Mass MoCA and the Taipei Museum of Fine Arts, takes the viewer into a shadowy world of various rooms and spaces which are seemingly built out of words and stories written in space like chalk on a blackboard. With Anderson's characteristic voice as an anchor point throughout, participants are able to move and interact with the words to unlock a seemingly endless world of new stories and narratives. 'It's about what I've tried to do in every other thing I've ever made,' the artist said in an interview, 'music or sculpture or film; to be completely bodiless.' For Anderson this is a welcome experience of freedom, or perhaps one of total absorption into a technologically mediated universe. But it underlines the point that virtual reality is an essentially disembodied medium, which may promise to be as good as real reality while lacking everything about human experience other than the purely optical. Infinitely scalable VR space is just another kind of geometric space where we seem to move without friction. Another god-space in which we can be given the illusion of complete control over our environment. Many cyberfeminists, alongside Anderson, have welcomed this control and the ability to inhabit different identities as emancipatory in some way. But what if this utterly disembodied feeling were inextricably tied up with Haraway's critique? When we cover our eyes with a headset we are literally inhabiting a world view constructed and promoted by a masculine corporate tech mindset. No matter what the content, no matter who the programmer, a virtual space created purely from data and navigable without any relationship to our situated bodies will always represent a patriarchal mode of experience because it is ultimately a dissociated one. It denies the body in order to more easily colonise space.

The roots of VR in military technology are well known, going back as far as the very early flight simulators after the Second World War. The US army uses headsets and multi-million dollar software to train its infantry in different combat situations, dummy M16 rifles equipped with gaming joysticks enabling the soldiers to move around fictional or recreated environments. *The House of Osama bin Laden*, 2003, by Langlands & Bell was one of the earlier immersive installations which touched on the military roots of the technologies. It was, significantly, originally commissioned by the Imperial War Museum in London. Viewers were able to navigate around bin Laden's former home in Afghanistan within a videogame-style virtual setting complete with abandoned vehicles and details texture-mapped from the real site. Similarly, since the late 1990s, traumatised army veterans have been able to seek treatment for their PTSD using VR exposure therapy, which is by some accounts more effective than standard talk-therapy approaches. The patients are put back into the scenario which initially triggered their condition. But the dissociative feel of the digital experience gives them just enough distance to start to rebuild more normal feelings and reactions. It may also be significant that one of the mind's primary responses to experiencing trauma is to dissociate from the body.

We are seeing an epidemic in anxiety and dissociative mental health conditions among young people at present, which many link to the universal immersion in digital and virtual spaces online. The connections to cultural phenomena such as social media are well understood now, but I would suggest that a more fundamental, phenomenological link to the disembodied experience of a purely geometric space must also have an effect. It does not feel good to leave your body behind.

To return to the starting point of this article, historical theories of sculpture might be of use because they enable us to see and understand the role that the human body plays in perceiving what Herbert Read called the 'ponderability' of sculpture – its substance, its mass. We process these qualities through imagining them in relation to the feel of our own body. Take away the body, and the effect just isn't the same. The vogue for post-internet art may well have dissipated but 3D technologies will play an increasingly normal part within contemporary art in years to come, as signalled by the inclusion of a virtual/augmented reality section in last month's Frieze New York. What is needed is to develop a new vocabulary for dealing with virtual forms that goes beyond the simple contradictions of presence and absence, original and copy. I would like to see the human body somewhere near the centre of such a vocabulary. ∎

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