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(Mythologies of) diving, flying and in-between

Louise K Wilson

School of Design, University of Leeds, Leeds, UK

ABSTRACT

This paper builds on the half-remembered reading of an interview with artist and deep-sea diver Ian Munroe to discuss how artists intervene into scientific research laboratories and other unusual environments. In the process, these embodied practices can be argued to evoke Baradian 'intra-actions' in being productive of situated forms of knowing that question the separation of the subject and object of enquiry.

KEYWORDS

Ian Munroe; deep-sea diving; zero gravity; experimental subjects; lab culture; performative arts practice

Preface

Many years ago, when I was an undergraduate fine art student, I read an interview in *Performance* magazine with Ian Munroe – an artist who had trained as a deep-sea diver despite initially being unable to swim and suffering from claustrophobia. The interview, conducted by the then editor Rob La Frenais, detailed the novelty of this Scottish artist's practice and the extraordinary commitment the process entailed. Its elusive and risky nature was notable – hinted at in just a few grainy black and white images of the artist in this role. I recall he was wearing an Otto Ball-esque diving suit in one and sitting in what I imagine to be a decompression chamber in another. The 'training issue' of *Performance* was entitled 'Learning to Fly' and focused on artists' acquisition of special skills 'that can be transformed into a found artwork in their own right' (La Frenais 1986, 18). I recently re-read what had prompted this intense durational project – what Munroe termed his interest in 'threshold experiences' (Munroe 1986, 25), defined as the limits of what was possible for a human being to experience and to explore and survive in. I learned that Munroe had claimed the conception of the role as found object – the role of the saturation diver as a heroic archetypal one, the 'ritual enactor of an aquanatic strange trade' (Munroe 1986, 28). He described the totality of this chosen environment, 'instead of breathing air you are breathing a mixture of helium–oxygen (. . .) you are compressed down to the depth at which you are going to work and the compression is then maintained for the duration of the job' (Munroe 1986, 26). Essentially then his body would need to be saturated with gas, decompressing for the entirety in one go. Accordingly much time would be spent holed up with fellow divers – whom Munroe vividly and collectively describes as intensely

pragmatic, macho, with a cruel sense of humour, spiritually hollow and dismissive of art.

The idea that an artist could submit to dwelling in immersive environments (and indeed labouring in distinct industries) resonated with me. I have subsequently looked for further information on Munroe's work but found little, aside of a brief mention of his work with the Artists Placement Group (APG). I also found out that he sadly died some years ago. I was curious about the yet to be made work he mentioned in the interview – of rituals to be carried out by a single individual: 'the tracing of a mandala on the sea floor, the use of light sticks of various kinds, beacons, just to create drawing with light on the sea bed whose function was ritualistic and not economic or pragmatic. A homage to the role' (Munroe 1986, 28).

At that time of first reading the interview, I was living in Newcastle upon Tyne and viewing live art on a regular basis. Projects UK (previously the Basement Group) were active in commissioning work around the city – taking advantage of the availability of empty buildings as well as the main art gallery as venues. The city contributed a distinctive and important history (particularly in the 1980s and 1990s) of site-based work where characteristic architectures provided a backdrop for artists' work. There was a burgeoning awareness of the role of mythmaking in the process (evidenced in the fanciful rumours that would ensue from artists glimpsed performing in derelict ware-houses and similar). The Munroe interview has undeniably lurked in my background, consciously and unconsciously informing or validating my own very occasional decisions to cross thresholds into what I considered inaccessible spaces.

This article will discuss a strand of this work – a process of investigation that began as an exploration of the self as subject in medical research environments and varying gravitational states. Unlike Munroe's immersive work, while uncomfortable at times – mine was not overtly risky nor did it entail lengthy durational participation. The exploration of lab-based performance will initially be situated within the discursive critique of contemporary surveillance technologies. Ultimately the concept of 'intra-action' – a term coined by Karen Barad to propose agency as a dynamism of forces – will be offered as a lens to consider the affective and relational experience of zero gravity.

Lab incursions

The desire to cross thresholds into what may be considered inaccessible and alien spaces can be compelling for artists, although the motivations for such excursions may be complex. While studying in Canada in the mid-1990s, I began to undertake a number of research studies as a test subject. This process – exploring the self as subject – developed into a consideration of viewing my/the body as a laboratory. This process owes an acknowledgement to the wider field of artists' (performance) practices concerned with the body as site and informed by scientific research at that time. This is evident in, for example, Andrea Duncan's essay 'Inside – Outside – Permutation: Science and the Body in Contemporary Art' in Strange and Charmed: Science and the Contemporary

Visual Arts (Duncan 2000) and Tracey Warr's essay 'Sleeper' (in the 'On Risk' special issue of Performance Research, Warr 1996) which offer nuanced accounts of the notion of self-experimentation.

My curiosity was initially prompted by considering how the physical realm of lab experimentation – usually inaccessible to the outsider – could be 'revealed' through performing the role of consenting subject. This process was coupled with an interest in the burgeoning theoretical work exploring the field of vision and visuality in non-invasive medical technologies such as MRI (Magnetic Resonance imaging) and PET (Positron Emission Tomography). These technologies – producing detailed images (of the brain architecture') in the former – and the living brain in action (thinking, feeling emotions) in the latter, were widely discussed at this time. Canadian theorist Kim Sawchuk coined the neologism 'biotourism' to identify the cultural phenomenon of desiring to peer into the 'previously forbidden territory' of the living human body and bring back snapshots' (Sawchuk 1995, 36). Our technological tools are increasingly enabling a scrutinising gaze that does not require incision. This cultural shift signalled a democratic drive to see further, and deeper: 'We no longer accept surfaces as barriers, but see them instead as smoky scrims through which we know we have access, not just doctors but all of us (. . .)' (Kevles 1997, 261). Other theorists posed a constellation of debates around representation and power in relation to these new medical technologies. Briefly, some of these sought to posit these technologies as continuing the project of surveillance and classification that originated in nineteenth century photography (Kember 1995); in creating legal precedents by constructing PET brain scans as 'expert images' (Dumit 1997, 1999) and – more affirmatively – as effecting 'undeniable pictorial power for the good' (Stafford 1991, 471). While acknowledging these important (socio-political and cultural) discourses, my enduring interest was in examining felt relationships between the body and the lab technologies in the intensely sensorial processes of lab work. This exploration ranged firstly across earth-bound and then aerial sites – effectively lab settings all in which bodies are involved in complex relationships with the agency of matter and technology.

The agency of the subject

Research laboratories are, according to neuroscientist Steven Rose, the 'ideological and technological powerhouses of modern society' (Rose 1982, 8). Yet within and because of the fragmented culture that surrounds them, what goes on inside these spaces seems 'arcane, mysterious' (Rose 1982, 8). Unsurprisingly, the laboratory has often been depicted as a fictitious and speculative arena, of accidental and unrestrained drama where morality and ethics are often overlooked and the raw matter of the body reduced to its constituent parts. Incursions may be made to such privileged sites if, for example, the physiology (and psychology) of a human subject is temporarily relinquished in the service of study. The initial process of gaining access to research laboratories can be complicated however and once inside, certain protocols and behavioural etiquettes clearly prevail and must be observed (Figures 1 and 2).

While voluntarily participating as subject in medical experimentation, I witnessed the manner in which the 'theatre' of the laboratory is palpable in the research acts performed within. Physiological (and psychological) functions can be both disclosed and effected by invasive and non-invasive technologies as information garnered from 'an activity functioning below sensory thresholds' (Cartwright 1995, 27) is inscribed by graphic methodologies. Although Cartwright is referring to the kymograph (in use some 150 years ago), the role of perception in the creation of the so-called 'data body' continues to be significant. A curious paradox of feeling both consciously embodied and dissociated in this environment can result, since – as I found – to be the subject in a lab study was potentially to see one's own body mediated as a generic site. Inscription devices store traces of the subject's body and from these, information is gleaned, analysed and ultimately embedded within scientific papers.

Figure 1. MRI brain scan (1994). Scan from Montreal Neurological Institute.

Figure 2. In the dream laboratory, Sacre-Coeur Hospital Dream Lab, Montreal (1995). Still from the Lab's fixed video camera.

Visual and textual materials were collected following my participation in several physiological and psychological research studies in various laboratories. This 'data' was then reconfigured (edited, manipulated and collaged) for the participatory video installation Possessed (1995) which gave form to the 'disturbing experience of separation between consciousness and the body, the sense of oneself as simultaneously both conscious subject and inanimate object, both sensate body and mere data' (Duncan 2000, 147). The discrete boundaries of these studies were purposefully entangled. A 'faux' laboratory theatre was staged in an art gallery – incorporating MRI/PET imagery collected from both a study I had participated in ('Study by positron emission tomography of the modulation of thalamo-cortical systems during the sleep-waking cycle in humans') and from the archive at the Montreal Neurological Institute (namely, pain perception and visual awareness). Viewers were invited to recline on a burgundy psychoanalyst's couch, raised up on theatre staging – while placing their face just beneath a suspended television monitor showing a looped sequence of animated MRI/PET images. This video incorporated an adapted hypnotic induction read by two Doctoral psychology students (a female voice speaking French, a male voice speaking English). In one of the inductions the 'subject'/viewer was asked to imagine (and thus perceive) that their hand was becoming numbed and de-sensitised after being sprayed with Novocain (a local anaesthetic). While 'feeling' this, they were asked to 'erase' the 'target': a pink mass visible in the cut-away structure of a 3D brain. After about four minutes of this repeated suggestion, the target (a visual representation of pain) was almost completely 'erased' – the pink mass was de-saturated. The viewer may fleetingly have believed that they had affected this process in witnessing the change (Figure 3).

A sonorous and seductive utterance was necessary to produce a receptive state akin to the one I'd experienced previously while participating in hypnosis studies at Concordia University. The efficacy of inducing hypnotic suggestibility was not reliant solely on the linguistic element (of the inductions), in other words. It could be said that the subject of Possessed was ensnared in and manifested by the logic of the experimenters' study. I was increasingly interested in how the lab touches and affects the bodies that pass through (both subjects and experimenters). The so-called non-invasive technology of MRI might be considered in terms of vibrational agency: the human body is acted upon and rendered as physics in an intervention that occurs below the level of cells. Briefly, the body's hydrogen atoms line up in the direction of a powerful magnetic field, having been 'excited' by a radio frequency pulse. When this pulse is switched off, the hydrogen atoms give up energy as they relax (with different tissues relaxing at different rates). It is a dialogue between the body and the machine, an 'intimate caress that passes beneath the threshold of sensation' (Baker 1994, 271–2). This is indeed a paradoxical caress. Akin to the x-rays in a CT scanner which exist 'at a speed of millions of vibrations per second' (Trower 2012, 101–2), this rearrangement of our watery selves (aside of the machine's noise as the coil rapidly expands and contracts) is not perceptible.

Figure 3. Possessed (1995).
Installation detail. Photographer: Richard Max Tremblay.

For the subject in aeronautical and other medical studies, I discovered, the tactile experience is inseparable from the technological environment that has penetrated and caressed it. It is as if the laboratory touches the mind in the same way that the radioactive tracer (in a PET scan) carried through the bloodstream is absorbed into the brain. What happened/happens inside the lab environment – from the sophisticated machinery that subtly reorders the body's particles to the carefully worded instructions delivered by the experimenter – was and is undeniably complex. The agency and 'noise' in the room was greater than first realised. As physicist Karen Barad suggests, 'We are not outside observers of the world. Nor are we simply located at particular places in the world, rather, we are part of the world in its ongoing intra-activity' (Barad 2003, 828). What seems pertinent to consider here is the performativity of the brain in a broader agential situation – taking into account the agency of the scientist alongside the non-anthropocentric agency of the lab and the apparatus it holds. All elements unavoidably influenced the results of the scientific studies. All of these performances impacted upon the (various) brain scans – complicating and contesting the subject/object split that had been experimentally contrived.

Stasis and motion

My participation in research studies at the Montreal Neurological Institute led on to an interest in the material effects of gravity on the body and the metaphorical, psychological and physiological aspects of motion (and space) sickness. I developed an ad hoc taxonomy for considering the role of the tested subject.

Briefly, I determined that experiments required an active or passive subject, the latter being one who was required to sleep/dream or be put in a state of hypnosis. This passive subject could nonetheless exert an intransigence and 'awkwardness' in performing what was required.

At the Aerospace Medical Research Unit (AMRU) at McGill University, I participated in 'The Role of Vision and Neck Inputs during Adaptation to Motion Sickness', a seven day experiment that necessitated spending hours at a time in the dark every day performing the 'provocative, self-generated movements' intended to provoke nausea. As I slowly adapted to this condition, I verbally rated my nausea on a scale from one to ten. Shot in the dark using infrared light, the video data is curious and inadvertently comic – the sensory experience is muted and gender, age and other characteristics are indistinct and vague. Ironically in this lab space, being female was simultaneously irrelevant and incongruous.

Numerous contemporary artists have been routinely attracted to the varying terrains on the surface of the earth for immersive periods of research. As discussed in the preface, Ian Munroe was drawn to the ocean depths. He has described an astronaut's experience as 'easily communicable to the public, easily sharable, because it's about clarity, long range vision, super sharp images, bright light, freedom from gravity, getting outside. Diving is about darkness. The interior, pressure, crushing, death, mud gunge, getting into the great Mare, the great sea, the great ocean, the female element' (Munroe 1986, 28).

Ironically, the role of flyer in a parabolic flight effecting zero gravity (for artists, not just for astronauts/cosmonauts) has become a possibility that more have experienced than the murky depths of the ocean – although the attributes that Munroe ascribes to the astral experience are equally or more complex I would argue. To quote Kodwo Eshun 'microgravity cannot help but materialise dimensions of the metaphysical, the ontological, the theological, and the political' (Eshun 2005, 28). In so doing, 'the extent to which it can be reframed as an intra action, from where individuals materialise and the ability to act emerges from within the relationship not outside of it' (Barad 2003, 77) will be considered. It will be argued that a compelling potential of bodies, discourses, matter and forces constitute the conditions to view it as such.

On gravity being taken away

Some years after the experiments at McGill, I gained a place to spend a week at the Yuri Gagarin Cosmonaut Training Centre at Star City, Russia to participate in a parabolic flight with the Russian Space agency, organised by Arts Catalyst. Previously, research on such flights had been conducted by scientists but the possibility had recently been engineered for artists to access these as 'first and foremost the space of experimentation (akin to a studio) as well as the material for creation' (Bureaud 2003, symposium programme notes). The individuals on these initial and subsequent MIR flights, went on to uniquely and creatively

inhabit and requisition this resource (Zero Gravity: A Cultural User's Guide details some of the individual and collaborative projects that resulted).

MIR 001 was comprised of a mix of largely London-based artists and scientists – including musicians Eddie George and Anna Piva; Morag Wightman, an aerial performer/dancer, Mykhail Ryklin, a philosopher and Andrew Kotting, filmmaker. None had any prior training for this (although two had previously undertaken a flight), however the aerial performer Morag Wightman had participated in a workshop by Kitsou Dubois (a veteran of dance in zero gravity) that included exploring different states of buoyancy and moving in trajectories in a swimming pool to question the concept of weight support and the ability to maintain moments of weightlessness. Everyone on the flight had proposed a project to gain a place. While some of these devised experiments required the elaborate realisation of imagery, others were more speculative and collaborative. There was scant time to be familiarised with the Russian cargo plane used for parabolic flights – an Ilyushin 76 MDK – although it had been possible to divide the hold into separate compartments (with nets) to allow separation between the various art and science projects. A team of cosmonauts/trainee cosmonauts also accompanied the MIR flyers on the flight.

I had applied to both pursue my interest in motion sickness (in exploring subjective responses to flight and nausea) and to act as experimental subject. For the latter, I was cast as 'untrained naïve subject' as the counterpart to a 'trained naïve subject', aerial performer Morag Wightman, in a movement experiment (the recruitment and verbal description of what was required was done in advance of the travel to Russia). The scientist Dr Anthony Bull, a bioengineering researcher, had devised a preliminary study of different movement control techniques in microgravity conditions. He wanted to address two questions, spinal control as a response to gravity, and movement control in the absence of gravity and had tried out these manoeuvres himself in a swimming pool suggesting that what he would ask his subjects to do was possible. We (Morag and myself) were instructed to perform different tasks for each parabola – standing up from sitting, standing up with eyes closed, standing up and extending an arm to the side and so on. Anthony wanted to know whether people who have been trained in a certain way who are unusual – dancers or others – have a different control of these muscles together. There was a need to quantify the extent to which this was physically hardwired or separated (Figure 4).

To explain first that the name of the manoeuvre arises from the series of parabolas that are described in the air in three stages as, essentially, the nose of the plane is lifted up to 45 degrees, lowered to a level position and then tilted downwards by 45 degrees before being levelled off. This trajectory prompts the gravitational shifts: in the climbing phase, gravity changes from 1 G to 2 G for 20 s before achieving the weightless phase at the top of the curve for approximately 25 s. During the descent phase of the flight, the plane returns to the 2 G for roughly 20 s and the cycle is repeated. The experience of weightlessness, in other words, is framed by moments of double gravity. Suffice to say that I was not prepared for the physical shock of the plane's first parabola. All mental preparation – such as there was – seemed to evaporate at the onset of double

gravity and its unexpected intensity. Then the ferocity of zero gravity took hold. My feet came loose from the improvised foot restraints and I fell upwards, hitting my head on the unpadded ceiling. There are no windows in the hold so there is no sense of where you are in (air)space. You are, as philosopher and fellow passenger Mikhail Ryklin noted, 'acutely aware of your body's relativity' (Ryklin 2005, 15). Zero gravity has a characteristic of sheer brute force. Your organs are lifted up and feel that they are temporarily located in your mouth. You are not calmly floating but falling upwards. Then it is 2 G and 1 G again, the cycle repeats. The verbal announcement (and lighting cues) that the process was about to recur became a source of dread. As with previous research study participation, there is (internal and external) pressure to perform well as a subject – which can exacerbate the stress when glitches and problems occur. While this initial chaotic parabola did affect the remaining ones, it gave impetus to the desire to see how others who had devised more reflective and less task-orientated projects were 'making sense' of their experiences.

Figure 4. The first parabola (2001). Video still from documentation by Arts Catalyst.

Vibrational affect and zero G

Mikhail Ryklin has written that his task had been perhaps the simplest but the most elusive on MIR 001 'simply to reflect on my own state during the different phases of flight and to correlate the weightless state with the other weight states, without defining weightlessness as anything particularly special' (Ryklin 2005, 14). He subsequently reflected that 'even a temporary stay in states of weightlessness and double gravity changes one's relation to the body and its terrestrial possibilities' (Ryklin 2005, 15). In reviewing the audio interviews I conducted with some of the flyers, pre and post flight (approximately 5–6 weeks after the Star City visit), I have repeatedly returned to the accounts given by two flyers (Flow Motion musicians Anna Piva and Eddie George). Similar to Ryklin, they had not tasked themselves with undertaking complex technolo-gical or movement-based experiments, but had been attentive to their own sensations and thoughts. This material has offered useful and rich insights into the perceptual states experienced in intense gravitational shifts, awareness of vibrational (and other haptic) forces and to the experience of time and selfhood.

While the time spent 'in' zero gravity amounted to less than five minutes in total, as Piva noted that 'sometimes you have experiences that just last one second and they make sense' (Piva 2001). Despite the fleeting duration, the two flyers reported feeling a spectrum of emotions and physiological responses. In both, the first parabola and the combination of zero and double gravity where everything felt compressed were very significant: 'I felt I was becoming like a stone, dense pointed diamond-like, everything was reduced to a core'. She noted that while used to swimming, she expected to have control of her body but didn't acclimatise. She also reported hallucinations – describing how people's features were changing and they looked slightly different. In a similar fashion, Ryklin wrote that he felt he was experiencing 'several simultaneous yet incompatible

hallucinations: Everything flickered by in separate colour spots, and I tried not to concentrate on one more than the other and to keep a presence of mind' (Ryklin 2005, 15). While he didn't tether this observation to any particular parabola or gravitational state in his text however, he did immediately go on to describe the 'equally important' experience of transitioning between the states. They are, he notes 'interrelated: we enter and leave weightlessness through this double gravity' (Ryklin 2005, 15). The processual nature of the flight becomes key then – awareness of transitions being made and the anchor points that are forged. Some of the most interesting observations concern the repetition of analogy and references to both the making and responding to music and its vibrational affect. Both Piva's and George's account, use their expansive relationship to music (as listeners, performers) to make sense of an unfolding event that was both startlingly alien and deeply familiar.

Anna Piva describes the novelty of the experience – for even though it was new, 'it just felt like finally my body was catching up with what my mind had experienced prior to the flight anyway. When you do music, you're always travelling, but you travel inside your organs, you become a resonator, aware of things like the liquid spaces in your cells because that's where the sound travels so you're in your body but in a different way than you are in regular relations to people'. This account suggests an effect akin to being or feeling 'tuned' (perhaps not dissimilar to the 'excited' body in the MRI described earlier) – the environment inside the plane occurs inside the bodies of the flyers. Eddie however recalled the shock of the first parabola and said it reminded him of his brother's recurring dream in which he reported feeling that the weight of the sky was pressing down upon him. He described double gravity as vibrational force akin to being in a sound system, feeling: 'the bass pressing against you, rattling against your insides. Location in the club is everything here – its literally standing with your back to a bass cabinet, with 18 inch bass speakers – if the person who is working the set, working the equipment knows what they're doing they can kill a lot of the bass frequencies so you just get that subsonic rumble – that's always a pleasurable experience and 2 G was pretty much just like that. . .not syncopated and even nicer in a funny sort of way if you couple it with the roar of the plane' (George 2001). As an analogue, the visceral impact of both high-volume and low-bass frequency has exercised a number of theorists in recent years, especially in relation to cultural forms that make particular use of it, such as dance music, reggae and film and videogame surround sound systems. A situation of 'sonic dominance' can arise from the reggae sound system's low frequency and amplification 'when and where the sonic medium displaces the usual or normal dominance of the visual medium. With sonic dominance sound has the near monopoly of attention. The aural sensory modality becomes the sensory modality rather than one among the others of seeing, smelling, touching and tasting' (Henriques 2005, 452). The sound system (in reggae) is a highly sensory/tactile experience then: 'The volume of sound crashes down on you like an ocean wave, you feel the pressure of the weight of air like diving deep underwater' (Henriques 2005, 452). Steve Goodman elaborates on the 'intense vibrational environments (that are) enacted, producing an ecology of affects in which bodies and technologies, all functioning as transducers of energy and movement from one mode to another, are submerged' (Goodman 2010, 27). A

'sonic philosophy' emerges from this, that he has termed 'bass materialism', proposing that a consideration of the sonic can potentially open up new lines of philosophical enquiry and wider understanding of affect and the human sensorium.

Sound can reconfigure and challenge both sensorial divisions and hierarchies – zero gravity too then clearly produces an intense environment – with bodies as transducers of energy and movement. Trower also positions vibration as possessing a binding agency in providing 'a basis for thinking about relations between the senses, moving beyond the differences between sound and vision (. . .) Vibration crosses sensory thresholds in so far as it can be simultaneously palpable and audible, visible and audible' (Trower 2012, 5). Vibration, as Deleuze reminds us, 'flows through the body' (Deleuze 2003, 72). It is productive and relational passing through both objects and subjects.

Aside from the cross-sensory realisations that were noted, the sheer rapture and deep-rooted wonder that was evoked is communicated. The flyer gets lost in the counting of parabolas and there is a realisation that the metaphors of flight do not apply. It was not a contemplative space however. George's plan was to think of nothing, to let things come to him simply because other options were not possible: 'there wasn't time to think about anything it was very physical the body made sense of it during obviously and afterward'. This was clearly for him, a state of becoming – becoming sound, becoming animal, becoming space – in constant movement. Unsurprisingly 'It doesn't leave a lot of room or time for interiority when you try and disappear inside yourself too much, (. . .) It's like being in a car crash – what interiority when you're in a car crash – you're in the present that's what separates it from dreams radically' (George 2001). The participant is dwelling in immediacy.

There was much discussion among the flyers in the immediate aftermath of the flight as to their own responses to the intensities what had been experienced. These conversations included a range of impressions including the irony of feeling very motion sick (at the time) but experiencing heightened euphoria and a desire to repeat the flight as soon as possible. After the return home, the absurdity in attempting to verbally communicate the complexity (of the 'intra-action') to non-participants would be keenly felt and is succinctly summarised by Eddie George: '(i)t's not like falling in love, it's truly untranslatable unless you've gone up in zero gravity you don't know what it's like. There's a futility in trying to explain it to people. (. . .) something gets lost, gets rubbed away so I tend not to talk about it' (George 2001). The role that (spoken) analogy and metaphor holds in making sense of the experience of a parabolic flight informed the making of the single channel video 'Parabola' (2016) made for the 'Alternative Document' exhibition (Project Space Plus, University of Lincoln, 2016). The video was presented on a wall-mounted tablet, with audio on headphones.

For this work, custom-made computer code was applied to a 'bank' of selected audio clip extracts of the interview in which Eddie George reflected on his experiences during the parabolic flight. This archive was randomly drawn on –

clips were played separately then multiple clips were layered. At times the discussion of the transition between gravitational states can be clearly audible – at other times only fragments are perceptible. As a visual analogue, the video imagery consisted of a short looped sequence, an extract from a 15-minute Soviet documentary 'Attention Weightlessness', 1964), which included footage of training undertaken on a parabolic flight. This footage was obtained from a poor quality videotape, copied several generations from the original film. In digitising the VHS tape, further degradation occurred. The footage resembles a poorly received signal as the 'subject' is now saturated in colour (an acquired digital 'artefact', absent in the original). Through editing, the flyer is caught in perpetual looped zero gravity. Video documentation of the tight disciplinary environment of the training exercise has become unstable and allusory. As Elizabeth Grosz notes, '(s)ensation requires no mediation or translation or translation. It is not representation, sign, symbol, energy, rhythm, resonance' (Grosz 2008, 73). A chaotic and processual event is suggested but the verbal and visual cues can only offer partial insights, and the piece points to the frustrated desire to evoke what was strongly felt (Figures 5–7).

Afterword and conclusion

To return to the ocean floor and a re-consideration of the Ian Munroe interview and the seemingly fruitless searches to discover more about this artist, I was fortunate to finally be able to discuss him and his work with someone who knew him and his work. In a telephone conversation, artist Anne Bean recalled how stimulated Munroe had been by the possibilities of deep-sea diving (Bean 2016). She described his fascination with light – he regularly experimented with light sticks and one occasion he apparently split one open in the diving bell to create a 'glowing cosmic environment'. He was hugely interested in the sensation of wonderment and once used a bow and arrow to send light. This event was enacted in London in a blacked out garden shed filled with helium gas and was witnessed by Anne, along with other members of the Bow Gamelan Ensemble. She remembered his description of heated discussions with other divers saturated with helium, speaking like squeaky chipmunks. His ideas were very ambitious, she agrees, he was very organised and disciplined (apparently from an army family) but was often overwhelmed by the set-up needed and neglected to put things in motion for their full realisation. While the work/ideas didn't necessarily materialise quite as intended, Bean noted that his practice was highly prescient in the claiming of role as performance (which was just explored with photography at that time).

It is possible to conclude that it was on the surface on the Earth (in a garden shed rather than the ocean floor), that Munroe most tangibly realised his ideas in and amongst a witnessing (and remembering) audience. Similarly, what endures (for me) in thinking about the significant spaces of the parabolic flight is the notion of a relational space, one of intra-action and one of a re-calibration of those forces acting on the body. Two 'flyers' (on different parabolic flights) have summarised this most succinctly: for Kowdo Eshun 'microgravity can be seen as a counter-environment (. . .) a space that allows us to detach from and thereby gain insight

into a fundamental force that surrounds us, a force we remain as unaware of as a clownfish of water in its aquarium' (Eshun 2005, 29). Mikhail Ryklin however has described a 'charged state of consciousness as part of a newly created collective body. . .spontaneous connections with other people are easily formed. . .you feel less separated from them, which is probably linked to the compression of time. Hence it is possible to draw the conclusion that we understand our individual selves in the strictly defined conditions of the flow of time' (Ryklin 2005, 15). Evidently, in the zero gravity experiments, there is a process of defamiliarisation, but in Baradian terms it is hard to separate the subject, object and experimental conditions. When the plane dives, gravity – some 'thing' taken for granted – begins to behave strangely, and it takes time to become comfortable with them again. Likewise consideration of the role of the plane in terms of instrumentation becomes peculiar, Barad emphasises the importance of the fixity of scientific instrumentation and devices of measurement in traditional science. However, in the zero gravity experiments, the aeroplane becomes an enormous, mobile, instrument that in its movement is able to produce new ontological conditions, whilst drawing our attention to the contingency of intra-agential relations, and stressing the open-endedness of the world. The conventional framework of traditional scientific measurement is rendered thoroughly onto-epistemic. It is a material negotiation that brings about this transformation in the character/action of gravitational force. The subject must reorient him or herself then by 'feeling out' the new agential capacities of the world and explore the intensities of this clamour.

Figure 5. Video still from 'Parabola' (2016).
Image credit: Louise K Wilson.

Figure 6. Video still from 'Parabola' (2016).
Image credit: Louise K Wilson.

Figure 7. Video still from 'Parabola' (2016).
Image credit: Louise K Wilson.

Notes on contributor

Louise K Wilson is an artist and lecturer in Art and Design at the University of Leeds. Her work, which takes the form of video, audio, installation and live pieces, has been exhibited widely in North America and Europe. Her published writing includes an interview with Paul Virilio (CTHEORY, 1994); a commissioned essay for Private Views: Artists Working Today (Serpents Tail, 2004); artist pages for 'Zero Gravity – A Cultural Users Guide' (Arts Catalyst, Cornerhouse books 2005), and book chapters for 'In the Ruins of the Cold War Bunker' (Rowman & Littlefield International, 2017), 'The Routledge Companion to Military Research Methods' (Routledge, 2016), 'Contemporary Archaeologies: Excavating Now' (Peter Lang, 2009) and 'A Fearsome Heritage: Diverse Legacies

of the Cold War' (Left Coast Press, 2007). Her programme 'Cold Art', exploring artists' fascination with Cold War sites, was broadcast on BBC Radio 4 in 2018. Her website is http://www.lkwilson.org/.

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