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Transplant

This book is a collection of essays on heart and lung transplantation and the collaborative work of photographer Tim Wainwright and sound artist John Wynne. It includes a DVD by the artists based on their residency at Harefield Hospital in Middlesex.

Edited by Victoria Hume

Introduction
Victoria Hume

> ‘*Transplant* is a quite remarkable insight into a unique environment, not only in its presentation of the people behind the stories, but in the detail: the image of the ITU (Intensive Treatment Unit) doors and the sounds of the unit are unforgettable, as is the sound of someone walking down that long corridor in E Ward. Not only is it a snapshot in time of vision and sound, but it gives such an illumination into the thoughts, hopes and fears of the quietly brave individuals at the centre of it all.’
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> Nina Lillie (wife of *Transplant* participant John Lillie)

Transplant encompasses a 24-piece installation, first shown in Bow Arts’ Nunnery Gallery in September 2008, a DVD, and this book of essays. It is the result of a three-year collaboration between photographer Tim Wainwright and sound artist John Wynne, working with Royal Brompton & Harefield Arts. The essays in this book pursue a number of different perspectives – on transplantation itself, and on Tim and John’s work. Those which consider material from *Transplant* are focussed largely on www.thetransplantlog.com – a web diary of edited recordings and images from the residency which acted as a sketchbook for the installation and DVD. Tim and John have also created a number of ‘offshoot’ projects: those referred to in this book are *ITU* (a surround-sound video created from materials recorded in Harefield’s intensive care unit) and *Part and Parcel*, a sound work by John Wynne heard at Kettle’s Yard, Cambridge, in May 2008.

Tim Wainwright first approached Royal Brompton & Harefield NHS Trust in 2006, hoping to make portraits of people with conditions affecting the heart. The meeting forced me to consider an unexamined reluctance to make the hospital and its patients the subjects of the art I was incorporating. From the industrial revolution onwards, we seem to have developed a powerful fear of large buildings – a sense that people are liable to become lost in the machine. Moreover hospitals in this country have long been used by the media as scapegoats for social or governmental failings – for anything our nostalgia finds bleak or disintegrative about contemporary society. And somehow in this easy metaphor, patients have become victims of the system. Conscious of what the ‘institution’ has come to represent in our visual vocabulary, I was nervous of taking advantage of the freedoms given to me by the Trust, and of playing on these symbols.

Perhaps I have been lucky in Royal Brompton & Harefield. It is, I think, an unusual place – unusual enough to have allowed us to undertake this project. Janette speaks on the *Transplant* website about being ‘like a little family here… we all pull each other along’, and as a specialist centre the Trust aims to treat people as much as the conditions which affect them. The arts programme has thrived in this holistic environment, working to erode the apparent divisions between the ‘normal’ world and the hospital. Reflecting this outlook, Tim’s previous project at the Royal Marsden was called *We Are All The Same*: without turning away from the gravity of the situation, his lens seemed rather to reveal dignity than strip it back to some cliché of victimhood. Implicitly intrinsic, this dignity is not an artifice the artist is duty-bound to erase, but a quality revealed over time, through trust – a standpoint which has, I hope, underpinned the whole process of bringing *Transplant* into being, and which certainly influenced the early decision to collaborate with John Wynne. His sensitivity with vulnerable subjects, and the confluence of documentary and abstraction in his work seemed perfectly to complement the simplicity and quietude of Tim’s photographs.

The artists spent a year at Harefield recording the experiences of heart and lung transplant patients and outpatients – a period which allowed them to understand and follow the entire process from assessment to recovery. For some patients, recovery involves a period of living with an artificial heart, or ‘Ventricular Assist Device’. The VAD was originally seen as a ‘bridge to transplant’ – maintaining life until a natural heart could be found – but Harefield is at the forefront of developing the use of VADs as a ‘bridge to recovery’ from certain conditions. In these cases the device takes over the work just long enough for the heart to recover naturally, at which point the VAD is ‘explanted’.

Harefield’s transplantation unit (encompassing E and F Wards) is a place characterised by waiting. People on the transplant list, as transplant patient Kate Dalziel explains, find themselves on the unit for weeks, months, sometimes more than a year. They are also, of course, extremely ill, though this is not always outwardly visible. But the mixture of ennui and anxiety peculiar to most stays in hospital is magnified beyond most people’s recognition by the severity of their situation. To try to relieve some of the tension, we introduced live music to the wards some years ago; following this, staff and patients repeatedly suggested bringing in more arts projects. This made the unit the obvious place for the artists to work; and since it encompasses treatment of lungs as well as hearts, it was clear Tim and John would also be working with thoracic patients.

But for all that people in the wards were keen for outside stimulation, the Trust was rightly cautious about allowing artists, cameras and microphones into this extremely private space. A small advisory group was established (a patient, a psychologist, a social worker, a transplant co-ordinator and the senior sister for transplantation) to help us carry applications through the arts, ethics, clinical risk and management committees. A detailed contract was signed by the Trust’s chief executive

– the artists generously agreeing to a trial period in which we would assess patients' responses to their ideas. A huge risk for the artists since failure at this early stage would mean the end of their project, and the end of the grant.

But the audit was a huge success. The artists' sensitive approach, and their refusal to lead conversations in any pre-determined direction, meant that people felt, as Kate puts it, that 'we could legitimately talk about ourselves… and go into territory we avoided with friends and relatives'.

At first it was slow going. Tim, John and I spent a great deal of time in E Ward – recording environmental sounds and images, learning about health and safety, getting to know the staff, becoming a part of the routine. But the turning point came as we met Kevin Mattick and his mother Anne. Leaving the ward after a slow day learning about hand-washing and 'barrier nursing', we found Kevin and his mother sitting in the day room on a high bed, swinging their legs off the side like teenage friends. They were on their way home to Wales but were friendly to us, and pleased at the idea of getting the reality of transplantation into a public domain. They were kind enough to let us take their photographs. And from that point on, the whole project turned around. Perhaps their enthusiasm simply gave us confidence, but suddenly we were in, and everyone wanted to be part of it.

After the first two months, Tim and John worked on their own in the ward. In all, they worked with 50 patients and relatives, and many more members of staff. But this privileged insight has left us all with the consuming challenge of living up to the openness and honesty of the people who took part. The process has been characterised by constant debate, within and outside this small circle: sometimes uncomfortable, sometimes exhausting, but always worthwhile. The combination of differing standpoints and an absolute determination to work together have made these three years – for me – a rare state of constant learning.

From the start we have had to consider carefully the limits of our involvement – as in surgery, the process of understanding the interior workings of a situation can cause great disturbance. My job was to ensure we benefited patients, and the hospital itself. We were all wary of the potential both for intrusion and for sensationalising transplantation. After all, the situation could hardly be more dramatic – lives hang literally on a knife's edge, and the sorrow which shadows each brilliant new lease of life could make for a powerful psychodrama, yet a more honest representation of the unit must somehow be rooted in the normalcy of it all. As Sherrie Panther, the modern matron for transplantation, says on the website, transplant is not a cure, 'it's a bridge. How long the bridge is, who knows? …you're actually putting the sticks in front of the bridge as you walk along it…' Transplant patients *live* with trauma. To listen to Justine's description of having a drain put in her chest, or her latest collapsed lung, is to realise that the greatest dramas are absorbed into everyday lives.

There are crises, great suffering, and great elation (indeed a few years ago doctors found they were struggling to cope with patients with new hearts – the euphoria became almost problematic), but there is also the mundane. Bins. Aprons. Gloves. Cadbury's Roses on the nurses' station. The tea rounds. Fridges. The new fridges were the main topic of ward gossip for a fortnight. Hardly the stuff of sensationalism. And yet we were circumspect even about the hospital environment, conscious of the dangers of criticism implicit in an aesthetically satisfying shot of a tatty pharmacy trolley; it was strange to realise that this too could be sensationalism, could constitute an irresponsible use of the freedoms John mentions in Angus Carlyle's interview.

There were also sharper ethical questions. Some involved recording in the intensive care unit: how do you obtain informed consent from people drifting in and out of consciousness? Should you even record in an environment where people are unaware of your presence? In the end our answer was to impose a degree of self-censorship – removing figures and noises which could have been identifiable, carefully considering the prominence of sounds against a potential for voyeurism. Contributor Tom Rice talks about the 'intimate ethnography' that *Transplant* constitutes for him. Sound is indeed intimate: the sound of Maureen's cough is as shocking as the sight of Ian's VAD. And though the sound passes, it has been captured just the same; I suspect it reverberates more painfully simply because we know it is recorded, and is thus rendered less forgettable.

All of us rely heavily on our sense of integrity, of personality – and many of the following essays discuss the identity crises which go hand in hand with transplantation. In different ways Claire Hallas, Lesley Sharp and Tom Rice all point to a problematic dissolution between the person and the institution; David Toop talks about the elusive, potentially hallucinatory quality of sound. There is a connection here, in part played by hallucination in many people's experience of transplant. 'ITU dreams' – frequently a major and traumatic factor – are often experienced as intensely real and seem to run in parallel to what is actually happening. It is as if the brain – rationally enough – interprets the operation as an attempt to kill:

'I was under the impression that there was experimentation going on around me… I was fighting it all the time, and saving myself every single time. From poisoning, they shot me, they threw me out of a plane, they transported me to Southern Ireland, I ended up in New Zealand, my step-daughter's boyfriend and his father were killed, my wife was shot. But I was still there. Then I was in a board game, and just got smaller and smaller and smaller. And it was the cleaner, rather than all the doctors and nurses, who put me in this room, just a room full of junk. Then he came into the room and the lights went on… and I was still in a board game, but I was getting bigger. He decided it wasn't right, what they were doing. And so I got bigger and bigger, and better and better. Obviously that must have been when they were weaning me off the drugs… I don't know how many days [it was] before I actually came out. I had no sensation of anybody talking to me, of anybody being there at all. And then, there was Sheila. And I was here, I was still here. And it was just total and absolute relief, without a shadow of a doubt.'

Hearing Robert Linton's board game story made me understand that the language of symbols is not the province of art – that art uses symbols because in a fundamental way it is how our brains comprehend experience. But this disturbing coincidence of symbolic and actual reality in ITU is perhaps as much a threat to our integrity as the transplant itself. To experience a dream as real is to lose some faith in the solidity of our reality. Just as to experience another's heart as one's own is to lose faith in the solidity of our selves.

In the face of all this, what was so astonishing about taking part in *Transplant* was the way that people simply coped, and made sense of it all. Many spoke about discovering inner strength they did not realise they had. Personalities were not destroyed, but fortified. It was a privilege to be given a sight of that strength, and somehow encouraging to know that each of us has this potential. More than that, there was such joy in so many stories.

In an evaluation questionnaire, one participant said that *Transplant* 'enables me to see different perspectives from people who have been through the same experience'. This collection of responses to trauma, together with the different perspectives of the collaborators, has forced me to look carefully at so many of my own assumptions. Definitions seem looser, more mutable – about the integrity of the body, about sound and image, about the rights of the artist, indeed about art itself. Contributors Charles Darwent and Angus Carlyle both hint at the liminal nature of *Transplant* in terms of 'high art'. But whether we sit within or outside its fluctuating scope seems less important to me now than the sense of some truth, some new intelligence, a new combination of thoughts. Perhaps a collaboration, especially one with a great periphery of participants beyond the artists themselves, has a chance of achieving this by overstepping the limits of a single person's perspective; the 'truth' is what appears in the joins.

The conjunction of media has an almost meditative impact: we react to the changing sounds as they move around an invisible landscape plotted entirely inside our brain, and half-passively absorb the iconic figure in a photograph. How *does* the brain absorb image when it relates to sound, but does not match it? To me Tim's photographs seem to embody the silence behind John's sounds, while the forward-moving sound belies the mortality of the image.

As it undermines these other boundaries, perhaps *Transplant* has challenged my perception of mortality. If I expected an injection of *carpe diem* from spending time with people so close to death, I was in part wrong. Certainly the value of life was made abundantly clear, but so, perhaps, was the value of death. To have met people who have chosen to die not through unhappiness as much as a strong sense of self-preservation is an astonishing thing in a world obsessed with longevity. Integrity can mean many things, and I have been bound to consider whether death is something we should not fear, or even dismiss as the obvious wrong answer. As the population ages, the junction between our life as we like to know it and longevity is something we will all face, but with transplant, unusually, there is a choice. To join 'the list' or not. The pioneering transplant surgeon Christiaan Barnard said that 'for a dying man [transplantation] is not a difficult decision because he knows he is at the end'. But perhaps now that the possibility has been around for a quarter of a century, people are more able to assess these odds dispassionately – to see transplantation as the bridge Sherrie Panther describes. Barnard said 'If a lion chases you to the bank of a river filled with crocodiles, you will leap into the water convinced you have a chance to swim to the other side.' But for many now it is more a question of how long you want to keep swimming. And it is, strangely, far from depressing that some people should choose to stop.

Transplantation is a highly emotional process, a passage through extremes; but what is so extraordinary is the achievement of normalcy:

'The first time I coughed it was like coughing over the Grand Canyon. There was so much air – I'd never coughed with so much air. Just having air – it was a phenomenal experience.'

'[I'll] just get myself a little house and that and don't overdo it. And just plod on in the garden… It's amazing to get another chance. I could have just fell down and died, end of story. It's just amazing. You cannot describe it, what it feels like inside.'

So before I am able to wonder what it is that makes people put themselves through transplantation, I remember David, Simon, Steve, Janette, or dozens of others who would not be here, and who live, as Kate Dalziel says, 'moon-faced, be-hatted, sun-blocked', considering 'every waking minute a remarkable and wonderful gift'.

Victoria Hume launched rb&hArts at Royal Brompton & Harefield NHS Trust in 2002 and now oversees a broad spectrum of arts activities, from live music to site-specific commissions. She is also a musician and songwriter.

Tim Wainwright and John Wynne in conversation with Angus Carlyle

AC: I'd like to start by asking you how the *Transplant* project began.

TW: For about 15 years I've been investigating what I see as the four essential elements of what it is to be human – mind, body, heart and spirit. In the mid-90s I documented, in words and images, the lives of people with long-term mental illness. My focus moved to the body during a residency with cancer patients at the Royal Marsden Hospital. Both these projects dealt with ideas about the surface tension arising from the coming together and falling apart of inner and outer worlds as well as with the nature of suffering and transformation. The next stage naturally seemed to be the heart, and I went to talk to Victoria Hume, the arts manager at Royal Brompton & Harefield NHS Trust and that's how *Transplant* got started. The Arts Council was keen but because it is inundated by proposals which concentrate on photography, I suggested using sound with still images. I had begun to use sound at the Marsden and John was recommended to me as a collaborator by artist Jem Finer, who I'd known for a long time.

JW: Although I've not worked in hospitals before, I have worked with the combination of photography and sound, both voice and environmental sounds, and I'm interested in developing a practice which is socially engaged, so when Tim approached me I was intrigued. I also saw this as an opportunity to take my interest in alarm sounds in a new direction. I recently presented some work at the 'Music, Sound and Reconfiguration of Public and Private Space' conference at Cambridge University and was asked how it was that the hospital was willing and able to support *Transplant*. I had to answer that Victoria's vision and open-mindedness was a significant factor. Even though a lot of what she is responsible for is closer to the realm of art therapy, she was able to see the value in what Tim and I were proposing to do.

AC: How has the nature of what you were doing at the hospital changed over the relatively long duration of the project, both in terms of your individual practices and in terms of the character of your collaboration?

TW: The way I was taking photographs was immediately affected by sound. Working with John made me think in a different way. In a sense, I started to visualise sounds and that was unanticipated – different from what I had imagined.

AC: Does that change in approach manifest itself in the subject of your images? Were you seeking to photograph things that John's work had identified as particular sources of sound?

TW: It was more invisible than that. I was informed by an awareness of a real presence of sound and that changed the way I saw things. I was conscious that I was in a collaborative process with a sound artist and I couldn't ignore that collaboration. To give a more concrete analogy, if I go out with a camera loaded with black and white film, I see things in a very different way than when I shoot colour.

JW: I always try to approach new projects without a pre-determined agenda or even a set working practice, to start from a position of acknowledging that I don't know what I'm doing – 'I know how to do that', as Cage said. With the *Transplant* project, I began by listening to the hospital environment and, crucially, to the patients and staff. Many of the patients had amazing and interesting reflections on the sound of the hospital environment and that, in turn, had a considerable impact on what I heard, what I recorded and how I worked with the sounds as the project developed. I think that both of us shared a sense of the importance of avoiding creating a collaborative artwork where the two media had too illustrative a relationship: neither of us wanted a photograph of a plastic bag accompanied by the sounds of a plastic bag rustling. In terms of our personalities and ways of working as artists, our approaches meshed together from the start.

TW: We seemed to share a capacity to just be present, to not be invasive. Considering we were two men going in with relatively intrusive equipment, people seemed to be very comfortable with our approach.

AC: Is there anything particular about the hospital environment with its ubiquity of technological devices which gives the patients a different relationship to the intrusiveness of equipment?

TW: We both used equipment that needed to be set up. So there was a process to go through in front of the patient that was almost meditative. The whole slow construction of an audio-recording and picture-taking environment enabled something. It is almost like there was a way in which the setting up of equipment registered the beginning of the communication process and relaxed all the participants. It was as if they shared in the construction.

JW: And perhaps that setting up process helped to demystify the technology, too, since I would often explain, for example, what the pop-shield was for. But that's an interesting point: in a hospital like Harefield, medicine is highly technologised – there is machinery everywhere, carts with cables hanging off them in the hallways and patients themselves are often attached to equipment with tubes and wires. So to a degree our equipment possibly did have a less intimidating impact as a consequence. Also, I think people are more uncomfortable with video cameras than when it is only sound being recorded – more self-conscious.

AC: Are there any particular challenges that attach themselves to a long-term project? Is it easy to maintain a level of freshness across the length of the project?

TW: I thought we would be lucky to follow one person through the transplant process. In fact, we had no shortage of volunteers and were able to follow several patients through that process, and to become involved in their stories. Seeing someone who had been close to death – connected to a machine for a year – finally getting their transplant and then heading home, was to see them transformed. Their changing and adapting over that time kept the project fresh.

JW: One of the ways in which the freshness has been maintained for me is through all the side projects that have developed. The installation has always been our main objective, but along the way, other ways of working with the material have developed through invitations to make work for various contexts. We made a surround-sound video from materials we recorded in the ITU (Intensive Treatment Unit); a multi-screen installation called *Flow* which developed from a day we spent in the operating theatre; I did an eight-channel sound piece for Kettle's Yard in Cambridge; and I've been commissioned to make radio pieces for the BBC and for CBC Radio in Canada. But of course when you see and hear material over and over in the process of working with it, an element of fatigue is inevitable, and sometimes in making decisions about what to include in the installation we had to remind ourselves of the impact it had when we first came across it. I'm repeatedly struck by the depth of the material we collected and just looking through the transcripts of our recordings makes me realise that there are so many potential directions this work could go in.

TW: For me, one of the things that made me see things afresh late in the project was the change from looking at 15 centimetre square images for two years to looking at one metre square images. Suddenly, an eye that had been only three centimetres across was huge. This brought out things I hadn't seen before – a lot more tenderness, suffering and emotional detail. But I'd also been thinking of both image and sound in the context of the website, and the shift to the gallery context brought a very different perspective.

JW: One of the things I noticed when listening back to the recordings of the patients talking was how close one passage in one of the interviews was to the approach we had taken to the *ITU* video. Neither of us had noticed the similarity between what we had done in the video piece and what one of the patients, Robert, had recalled from his experiences in the ITU. But the coincidence is remarkable. As you know Angus, the piece is shot entirely through the 'privacy' curtains around a patient's bed and all you see are the shadows of the carers:

'But sounds… All I could remember when I woke up… I couldn't see properly and that is an absolute nightmare. All I had was, I could see… make people out, but everything in the background was grey or silver. And, I'd love to know why that would be, but everything was grey and silver and people were black… . It wasn't that they were black, there was like a black shape around them… . You couldn't tell who anybody was. You could hear voices, but you don't know anybody anyway, because you'd gone in totally sedated. You can hear voices of people talking to you. Only that was in the early days, very fleetingly and all those strange dreams just keep coming at you thick and fast.'

Robert Linton

Robert was someone we recorded early on, and he had a very interesting story about how he ended up in Harefield. In telling his narrative there was a point at which he paused and you could feel the emotion welling up, just when he was explaining how a doctor elsewhere had essentially misdiagnosed his condition. It came out in a very controlled way as a long silence, in the middle of which he said '… this is the annoying bit …'. Sometimes talking to transplant patients was a bit like treading on a minefield: everything could be measured and controlled until suddenly they would enter the territory of whatever they found most difficult to deal with and everything would become intensely emotional. And you never knew where that territory might be.

AC: Most audiences for your work will be unfamiliar with the conditions in a hospital like Harefield. Have you adopted strategies to allow the audience to overcome that unfamiliarity without missing what is special about Harefield?

JW: Harefield is an exceptional place for two reasons: firstly, because it deals with transplants and, secondly, it's a small hospital in a small village, and they foster a palpable family feeling between the patients and staff. It was built in the 1930s as a tuberculosis hospital, with south-facing windows looking out onto a large grassy area. Transplant patients are in individual rooms to avoid cross-infection; the only multi-bed wards are the intensive treatment and high-dependency units.

TW: I had, in a sense, been prepared by my experiences at the Royal Marsden, but Harefield is an extraordinary place. It is an unusually welcoming community.

JW: It may sound like a cliché, but one of the stated aims of the project is to demystify transplantation. In fact that demystification is done by the patients themselves, and we don't need to add anything to their words. Returning to Robert's meaningful silence, it was important to avoid turning his thoughts into a sound bite, to leave enough room around what he was saying – and perhaps not saying – to give it the appropriate context. So, in terms of offering access to the majority of people who thankfully won't need transplants, that work is done by the patients themselves, who hopefully come across as real people, not just as subjects to be used for aesthetic purposes.

AC: In the *Transplant* website captioning is very minimal for both sound and image. I can imagine someone else delivering the same material to an audience and succumbing to the temptation to put a lot more sign-posting around those sounds and images.

TW: This is a huge area to explore. Briefly, I believe that if you confront people with context and captions, you are guiding them to such an extent that they might no longer have their own experience of the material. What is important to me in this work is to keep things as simple and honest as possible so there's no hindrance to someone being able to project parts of themselves into the images and sounds. In a sense, the audience doesn't need us as an intermediary. It's not our story, it's the story of the patients and they can tell it much better than us.

JW: I'm reminded of Michael Taussig who has said that ethnography is a process of 'telling other people's stories… badly'. I've sometimes thought that art is guilty of the same thing and I hope that this work, although there is of course a level of mediation in terms of what we chose to record and how we choose to frame it, enables others to tell their stories. One of the things that really strikes me about the transcripts of the people we recorded is how very articulate everyone is, irrespective of their situation. Some people were weeks away from dying, and in a lot of cases were in chronic pain, or at the very least discomfort.

AC: Were all of them so dignified, were none irascible?

TW: Well, a couple of people come to mind who were a touch irascible, who didn't want to join in. But one of those who had been resistant then saw a TV documentary about Harefield and became angry because it portrayed a former patient in a way that he felt didn't reflect the reality of the transplant experience. The day after the programme, his attitude changed completely and he became totally involved in our project, opening himself up to us – almost literally. This was Ian, who asked me to photograph the VAD (Ventricular Assist Device) attached to his abdomen. There was another patient who was held in a certain amount of awe, and once she got involved others were eager to follow. A couple of people said no to us, but no more than that.

AC: Does the patients' very articulacy give you a sense of responsibility? If they are so articulate about their experiences, do you have to at least match that in the artwork you develop?

JW: Well, I see it more as an opportunity rather than a responsibility. It has made our job easier because not only does it give us material to work with but it provides us with ideas, since people are making observations about sound, about the environment and about the process. There were times when I felt tired and wondered whether I had the energy to go in and listen to another person's story about their transplant. But, almost without exception, once I sat down and pressed the record button, I forgot about being tired and was completely drawn in to what was being said. But yes, there is always a sense of responsibility when working with serious issues and vulnerable subjects. One of the tricky things for an artist is to retain a sense of creative freedom in such situations.

AC: What for each of you would be lost had the work been solely conducted within your own medium?

TW: Working with John has somehow made something complete. It has taken me to new ways of thinking about how to engage with photographic portraiture and also helped me develop my ideas about the relationship between portraiture and abstraction to a deeper level.

JW: The main goal has always been the installation, and what we are trying to achieve in one respect is a kind of suspension of time that will reflect the temporal suspension that the patients experience on a waiting list. Claire Hallas, the psychologist at Harefield, described the experience as 'waiting and waiting and waiting. Either waiting to live

or waiting to die – not quite sure which'. I think there is something inherent about the combination of still photography and sound that creates a tension, because sound is inextricably time-based and photography is, to quote Barthes, a kind of 'flat death', a frozen moment. I also use pacing, and sometimes time-stretching, to slow things down. In the installation context, the photographs will give the whole a kind of intimacy and a chance for the audience to literally and metaphorically focus on something. They're actually looking at the person whose voice they are hearing, and they can look in great detail because it is a still image. It would be difficult to sustain an engagement at that depth if the work was delivered through sound alone. The intimacy of Tim's portraits is complemented by the intimacy of the sound, since I used close-mic techniques, so close that you can hear the illness in people and you can hear emotion very clearly. The same is true of the environmental shots: giving an audience the opportunity to focus on the space brings out the details in the atmospheric sounds I recorded.

TW: The sounds and images and their respective intimacy provide a space for people to focus, which I think is quite unusual. There has been something open running through the process, in the way we have engaged with people, and I think that openness is manifest in the finished work.

AC: Was the hospital environment one that posed any restrictions in terms of your approaches?

TW: We were warned in advance that there might be occasions when things would happen that would make it inappropriate for us to be present, but that didn't really happen. In general, the staff made things very easy for us.

JW: Transplant patients are highly susceptible to infection because of the immunosuppressants required to prevent rejection, and we were taught how to scrub our hands for three minutes before entering the ward. With the patients who were under barrier nursing regulations, we had to wear plastic aprons and latex gloves. We were given alcohol wipes for the equipment. It was a little uncomfortable when the gloves got sweaty but any such problems pale to insignificance when you're on a transplant ward. It wasn't cramped because the patients' individual rooms meant that generally there was enough space to work in. Most of the recordings were made with people in bed or sitting beside their bed.

We were under certain restrictions in the ITU because patients were not in a condition to give informed consent, so the material we gathered there was always under the understanding that it be unidentifiable.

This restriction became part of the genesis of the *ITU* video, which emerged partly through these practical constraints and partly through the pursuit of aesthetic considerations.

AC: I'd like to invite you to discuss the ethical dimensions of your work on *Transplant.*

JW: The project had to be approved by the overall ethics committee of Royal Brompton & Harefield NHS Trust. In addition, there was a specific committee organised around us at the hospital itself, which included the modern matron for transplantation, the health psychologist and the social worker. There was justifiable caution initially, but once we got onto the wards it quickly became clear that we were not going to get in the way or upset patients.

TW: In the installation, three people will be depicted who have since died. But their inclusion is not intended to shock but rather as a truthful reflection of the process.

JW: On the one hand, we weren't there to provide propaganda for the NHS, but on the other, we both strongly believe in the NHS and want our work to make a positive contribution. There was a desire, on both of our parts, to avoid a voyeuristic, sensationalist or manipulative approach. We have no desire to harm either the NHS or patients' feelings, but some of the material we have gathered could conceivably be used in an irresponsible way.

TW: The access we have been given has been considerable and generous. There was only one image that anyone objected to – it was slightly surprising because it seemed innocuous to us, but even that didn't cause any major problems on either side.

JW: One of the amazing aspects of the access we've been granted is the degree to which the material has been personalised. Our project would be very different if anonymity was required, but patients have, in almost all cases, ticked the box on the consent form that allows us to use their name. This, I believe, is quite unusual, both in arts projects and in research.

TW: I think there is something about the patients putting their names to their stories that has a therapeutic quality for them and others.

AC: How much of your approach to the project has involved the notion – abroad in anthropology and elsewhere – of 'returning' the research to its subjects, to the hospital and its patients?

JW: The website was always designed to do that, although unfortunately inpatients don't currently have access to the internet. But when patients have left they have been able to access the material, as have their families and friends outside the hospital. We've also made presentations to staff and patients. For one presentation we were expecting three or four staff but the room was packed, and even senior members of staff stayed right to the end of the hour. Because of the large and technically complex nature of the installation it can't be shown at the hospital, but part of the motivation behind this book is that it, and the DVD, *can* be made available at Harefield.

AC: I'm interested in how the *ITU* video came about.

TW: It came about by accident. I was really struggling for things to photograph and noticed the curtain, which forms the basis of the film. I happened to have a video camera with me and began to film it. I realised while the camera was running that it was beautiful and quite extraordinary in several ways – the idea of theatre, of people waking up to the consequences of a choice they had made, of being prepared to face the world, and the curtain being drawn.

JW: Tim said initially that he saw the visual side of the film as a kind of container for sound. My interest in going into the ITU followed on from my work with alarms and auditory warnings and, more generally, from ideas of acoustic ecology and the problems of noise, particularly in relation to healthcare. Visually, it was made more difficult by the need to maintain anonymity in a situation where informed consent can't be offered.

TW: Yes, partly that and partly because nothing 'did it' for me visually, apart from a chair in an adjoining room that said something to me about a vacant emptiness and perhaps my inability to 'see' clearly.

AC: John, does *Transplant* represent a different way of working to those you have adopted in the past?

JW: If anything, through the process, I've moved more towards the direction of not interfering with the sound material I have recorded and away from the temptation to process it. I'm still very much interested in the borders between documentation and abstraction, and I still want to abstract some of the materials in some ways, but I think I'm finding more subtle ways of doing that. I don't just want to treat the recordings as sonic material – as sounds divorced from context – because it is more than that. The shift in my working practice is partly a recognition of this question of responsibility and of the relationship of trust which I've engaged in during the process of *Transplant.*

A really valuable thing has been to learn to give the material more space. The gallery installation involves 24 channels of audio, each coming from a different flat speaker on which is printed an image – 16 portraits and eight environmental shots. We want to retain a sense of space around the material; we don't want everyone talking simultaneously and, while immersive, the installation is not intended to recreate the acoustic environment of the ward. It's been an incredibly difficult process choosing just 16 of the patients we worked with.

AC: Tim, in the images of yours that I have seen from the *Transplant* project, there appears to be a balance between portraiture and photographs that are either still lives or landscapes. Is that balance one that has been consistent across the life of the project?

TW: Initially, there were far more environmental images and the successive updates of the *Transplant* website trace the movement away from these towards portraits, as John and I began to get closer and closer to individual patients. Finding images that could represent the particular atmosphere of the hospital was a struggle. The environment is an immersive one, and using a camera lens to narrow down the visual field did not often feel appropriate. Furthermore, choosing 24 images from a year long project has been a very difficult process. I was able to photograph using only natural light. I've long alienated myself from the idea of high contrast images: what I began to learn from my Royal Marsden photographs was that if you lowered contrast, a delicacy could enter the frame, an openness, and a powerful fragility would surface.

AC: Some of the images that I have seen could almost be described as surrogate portraits: clothes drying on a radiator; a washbag on a chair; and an open bag of knitting on the floor.

TW: Let's take the washbag as an example. To me, the washbag is a powerful image. Apart from being a Freudian symbol for the vagina, it is closed, isolated and composed. I am fascinated by how that could signify the duality between what is shown and what is concealed. At the same time I am aware of how I am trying to bring some order or control in to my own fears of things hidden.

JW: To a degree, patients have to surrender their identity in hospitals, so the few objects they are able to have around them become important symbols of who they are.

AC: Is *Transplant* documentary or is this art?

JW: I think *Transplant* has elements of both disciplines. I'm interested in the boundaries between the two, and I believe that when you make abstractions of sound materials that are normally conceived of in documentary or descriptive terms, the process of returning from the abstract to the actual sounds is one that allows the listener to hear afresh.

TW: The previous projects I have done in this area did not involve choice: neither the long-term mentally ill nor those suffering from cancer could have their experiences properly described in terms of choice. What distinguished *Transplant*, however, was that the patients had all chosen to undergo a transplant – others (about 50 per cent, I believe) choose not to. I am fascinated by the discernment process and in particular where, as Michael Ivens says, discernment is not about the verification of the choice but about the strengthening of the chooser. What this project was about for me was the choices people had made and why they had made them, and an extraordinary coming together of languages. This was particularly so in terms of suffering. The analyst Wilfred Bion, who was influenced by Melanie Klein, wrote about the difference between the knowledge and the experience of suffering – saying that it is only through an experience of suffering that we are truly transformed. For me, that has a particular resonance with the Christian death and resurrection narrative – where resurrection is seen to be about new life and not about the resuscitation of an old life. Those supposedly contrary languages were both interesting and both relevant. Whether it's called post-Freudian or Christian, documentary or art, to me it's all language; it doesn't really matter what it's called, and I'm a bit averse to this need we have to be always naming things.

AC: In the shadow of Bion's position, would what you have both encountered at Harefield be knowledge or would it be experience and were you transformed by what you found there?

TW: Something happened quite early on in the *Transplant* project for me, when we learned about the so-called 'domino' procedure. Until fairly recently, it was technically easier to transplant heart and lungs together; and because with cystic fibrosis, for example, the heart is normally quite healthy, the recipient could then become a donor for someone else. I began to question the need we seem to have in our culture to prolong life. I don't mean this in a negative or gloomy way, but honestly and constructively. Harefield has made me wonder what is so wrong with dying. My thoughts and ideas will change, but I feel that to be human is to be fragile and to suffer and yet there is also a worrying reluctance to engage with death.

JW: One of the people we met did make the decision to die. She had a lung transplant about six years before we met her and told us that of those six years, more than four had been spent in hospital because of problems with chronic rejection. It was a real shock when we were told that she'd elected to die, because she was such a lively person. She had a partner who was there when I recorded her, and although she seemed to have many reasons to live, together they decided it was best to let go. Things like that and our experience with Justine, who seemed to survive the long waiting list on willpower alone, have certainly made a long-term impact, but it's hard to say precisely how the experience has affected me. During the residency I turned 50, I watched my father take his last breath, a good friend got cancer and I had a relatively minor health scare myself, so awareness of my own health and thoughts about death would have become sharpened even without seeing the consequences of bodily failure so intimately at Harefield. But it has definitely given me a renewed appreciation of my own life and of those close to me – not least because, for many of the people we met, the illness that resulted in the need for a transplant came out of the blue. It could happen to any of us at any moment. Or not.

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A patient's perspective
Kate Dalziel

Being a patient on the transplant ward involves a curious mixture of sensory deprivation and sensory overload. You have a single room containing a bed, locker, radio, television, bedside table and a small fridge. Behind the bed is a long bank of medical paraphernalia; oxygen outlets, suction bottles, monitor screens etc. No flowers are allowed because of infection risks. This may be your home for weeks, months or, in exceptional circumstances, years.

Attempts to personalise the room with cards and pictures can be frustrated by moves nearer to or further from the 'square' which surrounds the nurses' station, as your condition worsens or improves. Your room may have large windows looking onto grass and trees, or may face only brick walls. In some rooms you can get television and radio reception, in others you can't. In some the fridge is silent, in others it rattles loudly as it turns on and off, day and night. Bin lids clang, VADs tick up and down the corridor attached to owners who must live with their relentless clicking 24 hours a day. The most ill are nursed around the square, where the cardiac monitoring equipment with its cacophonous bells and claxons is close by.

At a time when you are very ill and possibly facing death, a strange, bare and unbelievably noisy environment replaces the familiar and comforting one of home. When you are really sick you don't care too much about where you are, but in the long weeks of limbo for those waiting for a transplant but too ill to be at home, or for those with VADs, you need to find things that will soften the sharp edges, distract you from the here and now, and bring some comfort.

In a way, chronic heart failure prepares you gradually for forthcoming imprisonment, whether that is to be at home or in hospital. As the disease progresses you can do less and less. It feels as though you are living in a small room in which the walls are creeping inwards, forcing you towards a door that can only lead to one place. When you are put on the transplant list another door suddenly appears – and on it is the word 'Hope'. You have about a 50 per cent chance of getting to go through that door, and you have no real idea of what is on the other side – but hope is a powerful drug and motivator. As the enormous fatigue of my heart failure progressed I was lucky to have the time to realise what was happening and to set out deliberately to store up in my mind sights and sounds of the places I love best. Living on the coast, I went to the cliff tops through seasons of thrift, foxgloves, heather and gorse and tried to memorise the colours and scents and the sound of wind and wave. I stood on the shore listening to the sea and feeling its strength. I filed away the songs of larks and linnets, the calls of buzzard and seagulls so that there was a place to go to in my head whenever I needed it. I bought an mp3 player and filled it with music. Just in time, as it happened.

As the weeks on the unit pass, so the rhythms and sounds of the ward become familiar, less intrusive, and even reassuring. The day is divided up into packets by the arrival and departure of meals, cleaners, ward housekeepers, newspapers, nurses, doctors, blood tests, investigations, visitors. They come in a highly ordered and predictable sequence, interspersed with unpredictable events. Would you get back from x-ray in time for the tea trolley? Would you be whisked away for some procedure just as a visitor arrived who had travelled a hundred miles to see you? By the time you are ill enough to be on the unit, just the process of interacting with this number of people and tasks takes almost all of your small reserves of energy. I found that the things I wanted to engage with changed; the radio and even books were just too full of words that seemed to bear no relation to me. In a strange paradox I regained my political passion, reading the paper from cover to cover each day and fuming at perceived injustices. Perhaps being in this situation made me less complacent and gave me more empathy for people in all sorts of trouble.

During the day it was possible to filter out the sound of the monitor bells, rattling trolleys, people shouting up and down the ward, yet at the same time I could tune in instantly to the call of a green woodpecker in the nearby woods or the shriek of swifts as they hunted over the grass in the evenings. Night-time was always more difficult and the noises more disturbing. Then you could hear other patients in nearby rooms and their distress, pain and desperation. Sometimes this bubbled over into confrontations between patients and nurses or relatives. Call-buzzers, footsteps and clatterings continued through the small hours and if you had a room around the square then earplugs were an absolute necessity.

Most transplants happen at night, and if one is in prospect the ward is suddenly energised with staff rushing about doing the necessary preparations. All the patients know what is happening, picking up snatches of staff conversation, and are filled with a mass of mixed emotions. Real hope that this one will go ahead (many don’t), wishing the recipient well, sadness for the donor’s family, envy and fear (transplants happen so infrequently that if this one isn’t ‘yours’, you may not have time to hang on).

Through all this the greatest supports for me were my friends and music. After my transplant I spent a short time on the intensive care unit and experienced the well-recognised ITU-psychosis. My version was a horrible recurring hallucinatory dream filled with terror and a ghastly stench from which it was impossible to escape. Eventually I was rescued by a nurse who opened the blinds so that I could see daylight, and suggested putting on some music. I had just received a disc of duets from Handel oratorios and I played it endlessly for days. It remains the disc I listen to most often. One night, in the middle of the repeating nightmare, I heard Nina Simone singing the Bob Dylan song *I shall be released* and I knew that everything was going to be all right. After that the dream lost its intensity.

So into this melting pot of illness and stress and coping strategies, when most of us were feeling at best like death on a stick, comes a request to take part in interviews and photographs for an arts project. I think the common reaction was 'yes'. Something new, a different face, a chance that a stranger might not see you as the diminished person you had become, maybe a record that would outlast you. And how could you possibly say no to Victoria? Familiar as she was from her appearances on the ward with live musicians who turned up to play every couple of weeks. The various musicians were all great value although the only time I really lost it publicly was when a string trio started to play in the square. The huge surge of emotion was overwhelming. Music of course has the capacity to do that, but somehow it was just so much more powerful with the music being made in front of me. Despite my pragmatism I really did care that I might well not see musicians playing again. About two weeks before my admission I had sung in a performance of Brahms' *Requiem*. In retrospect I have no idea how I managed it but I knew that this was my last concert and truly thought that I was singing it for myself.

Joining the project turned out to be a real pleasure. It was fun when Tim and John turned up with large recording machines and cameras. We could legitimately talk about ourselves and go into territory that we avoided with friends and relatives. They asked us questions that made us think. Things like 'what is important to you in this room?' and took strange photographs (see pictures on the website of *Justine's sandals* and *Kate's bed* for example). The team followed me through my successful heart transplant, and one of the great moments in the early days of recovery was walking in the grounds with Tim and sitting for a photograph, feeling the warm grass under my hands for the first time in months. We couldn't actually get to see the project developing because patients do not have internet access, and maybe this is why it had a profound effect on me when I returned home. I can't be alone in finding that I was in mental turmoil in the months after my admission and transplant. There were so many huge issues to digest; not least nearly dying 250 miles from home, the utter amazement of being given a second chance at life, the grief for and thanks to the donor and their family, the side effects of the new drugs and so many more things. The requirement to walk every day also provided the best therapy. People must have wondered about this strange, slow, moon-faced, be-hatted, sun-blocked woman muttering to herself as she walked. Gaining the strength to return to my ‘stored-image’ places was marvellous and moving. Friends would receive strange cryptic texts of celebration.

Going to the *Transplant* website and seeing our mug shots, like the inmates of a benign death row, was painful and poignant. I heard myself speaking and realised that my voice then was identical to that of my mother who had died in heart failure. We patients so rarely got to speak to each other, yet we were all fighting similar devils side by side in our separate rooms. Some of those who feature on the website didn’t make it. Those of us who did have emerged changed; fractured and put back together. Rejoicing and thoughtful. The sights and sounds of those months, the music that brought me peace, the voices of friends, the call of birds, the cherry trees in blossom outside the window were all so important in the process of surviving.

Kate Dalziel was a heart transplant recipient in June 2006 after a four-month admission to E Ward in Harefield Hospital. She lives in Cornwall and considers every waking minute a remarkable and wonderful gift.

The dance of life
Charles Darwent

There is something in the modern mind that likes things singular, which sees a threat in complexity. The history of modernist art is the history of minimalism, of specialisation and whittling-down. In the mid-17th century, it was possible for an artist such as Gian Lorenzo Bernini to be both a respected sculptor and a respected maker of salt cellars; by the mid-19th century, it was not. Johann Winckelmann, writing on classical Greece, insisted that its art had been all-white even though his own collection contained pieces of Greek polychrome sculpture. Singularity – oneness – was more important than truth, even if you had to fake it

So *Transplant* presents contemporary viewers with a problem just by dint of being in two media, sound and image. In the tidy, either/or world of contemporary art, work that engages both the ear and the eye suffers from a tendency to be pigeon-holed – in this case as documentary, which *Transplant* both is and is not. Documentary may be good, even excellent, but it is something different from art. It is a record and an explanation (*Transplant* is both of those things as well), but that is where it ends. Art which uses image and sound isn't about solids but about voids, using the presences of documentary fact to conjure up great imaginative absences.

A cardiothoracic transplant is an incredibly rare procedure, done only when no other option exists. Even then, it is riven with ethical and emotional problems. For a patient suffering from, say, cystic fibrosis to be given a chance of life, a healthy donor has to die. The practicalities of this are problematic enough – figures from UK Transplant indicate that only 292 cardiothoracic transplants were carried out in the entire UK last year – but so, obviously, is the psychology involved. And even if the transplant is carried out, its outcome will not be absolute.

All of which is to say that cardiothoracic transplants cut to the very heart – literally – of our being. Quite apart from the statistics involved, the heart has been seen as the seat of human passions since the Roman physician, Galen. Cutting it out, as Shakespeare saw with Shylock, is second only to removing the brain in terms of emotional resonance. For all that modern logic tells us otherwise, taking a heart from someone else (or having the heart taken from a parent or spouse or child) is an unavoidably emotive issue, a transplanting of the soul. That a donor has to die so that the recipient of his heart can live only adds to the moral complexity.

In various ways, then, heart and lung transplants blur the easy distinctions between life and death, between being alive and not. The transplantation unit at Harefield is a place where all these issues cross, where dying and living have different and more elastic meanings than in the world outside. A life spent in daily anticipation of one's own death is paradoxical enough; a life spent waiting for someone else to die nibbles away at conventional distinctions between living and dying. And what of a life spent on a VAD (Ventricular Assist Device) – a machine that duplicates the function of Galen's seat of passion with the thud of a mechanical pump?

To document all of this, to make a literal record of the work of Harefield's transplant unit, would be a difficult enough thing to do. What such a documentary would not convey, though, is that sense of a half-life which this kind of cardiothoracic surgery involves. The questions raised by heart and lung transplants are central to human existence, to our idea of ourselves as living, irreplaceable beings. They are questions that have preoccupied theologians and poets from the start of time, from the author of the *Book of Common Prayer* who saw death in the midst of life, to the turning world's still point as viewed by Eliot.

These paradoxes are, according to your taste, either terrible or beautiful, simple or hard to grasp. As I have said, the modern mind tends to shy away from complexity, from dualism. Life is good, death is bad; it took the sophistication of the Manicheans to see each as necessary to the other. And, as with life and death, so with the complexities of appealing to the eye and ear in a single piece of art.

Which is why it seems to me that the work in *Transplant* could have been nothing other than complex. The relationship between sound and image in these works is both simple and not at all so. It is entirely possible that each medium might exist without the other, that Wainwright's photographs would form a visual archive of the work at Harefield and Wynne's recordings a sound archive. Where the point of the *Transplant* project lies, though, is in its dualism; in the interrelation – and perhaps more importantly the lack of interrelation – of its constituent parts.

The most obvious contradiction in the work is that Wynne's sound is dynamic while Wainwright's images are static. This also need not have been the case: a more conventional project might have matched real-time sound with moving images. The tendency then, though, would have been for their interrelation to be illustrative, for each medium to explain the other. What happens with *Transplant* is something altogether more paradoxical, the evocation of an existence which is itself both stable and ever-changing.

At this point, it may be useful to ask why we would want to see (or hear) a work of art based on heart and lung transplants at all. Quite apart from the historical and conceptual reasons outlined above, there is the simple one of an eternal human fascination with extremes. As Aristotle noted of Athenian tragedy, we want to watch people who are like, but greater than, us facing choices that are like, but greater than, our own.

The story of a son rebelling against his father would be tedious were that father not King of Thebes and his son's rebellion not murderous. We can recognise the universal truth of the story of Oedipus and Laius precisely because it is far enough away from us to see it. Were the protagonists everyday people and their behaviour ordinary, its universality would be lost in the familiar.

And so with *Transplant.* The experience of watching even the best surgical documentary – the BBC's excellent *Your Life in Their Hands* series, say – is quite different from that of looking at Wynne and Wainwright's work. Something in the supposed accuracy of television, its dogged lack of mediation, both informs and repels us. It is the very believability of what we see that prevents us from believing it: to cite Eliot once more, 'human kind can not bear very much reality'. Where *Transplant* differs from documentary is in its recognition that the procedures undertaken at Harefield are both mundane and, in their extremity, universal and poetic. As with Oedipus Rex, *Transplant* uses the ordinary to evoke the extraordinary; and it does so in part by facing us with its own sphynx-like riddle, which is the disjuncture between what we see and what we hear.

I'm thinking in particular of the appearance in the *Transplant* website of Ian, a patient whose year-long experience begins with him on a VAD and ends with his having received a new heart. This sounds prosaic enough, but Ian's story also inverts, in hugely abbreviated form, the normal process of life. In July 2006 – the month in which Wainwright's image of him on a VAD was made – Ian had been on a Thoratec ventricular assist device for precisely a year. The image shows him as wraith-like, so much a part of the half-world of Harefield that he has assumed its colourlessness: the white of a hospital sheet, the creamy monochrome of its walls. Wainwright's composition crops its subject so that he appears to be slipping away, a surgical Deposition, a motherless pietà.

Wynne's sound, on the other hand, tells a quite different story. Against the background of an unexplained mechanical thrum – the pumping of the VAD – Ian spells out his own case. 'You could call it a heart in a box,' he says of the device, 'a couple of batteries keeping me alive.' Optimistically, he is 'just waiting for a new heart to come along'; that its arrival will mean the death of a donor is left unspoken. In contrast to the stillness of Wainwright's photograph, the dynamism of Wynne's recording suggests a future, even if that future is in various ways uncertain. Far from backing each other up, the different media used by the pair seem to be pulling in two different directions. You wonder how (or even if) the artists colluded in the making of the log, or whether they realised that its inherent paradoxes, suggestive of the active and contemplative lives, would sum up the dualism of Ian's existence, and our own.

This strikes me with particular force in the log's last sound-image of Ian, made a year after the first. If you're looking for dualities, then this is surely the most obvious: the ultimate before-and-after, Ian dying and Ian *redivivus*. And yet the way Wynne and Wainwright's media dance around each other makes even this certainty uncertain.

Wynne's apparent absence from this recording seems to hand power over to its subject. 'Now I understand what was happening,' says Ian, triumphant: 'I'd known there were miracles out there, but I'd never seen one until now.' Liberated from his VAD, a new heart beating in his chest, his is the happiest of happy endings. And yet the point of miracles is that they can not be understood; contrariwise, any thing that is open to being explained is, by definition, not a miracle. The power Wynne gives Ian is the power to reveal a truth about himself, even if that truth is intuited rather than spoken: that his life is changed, but not renewed; that his survival is still as contingent as that of any living thing.

Where Wainwright's initial image of Ian seemed to jar with the dynamism of Wynne's sound, the two are now in harmony. For all that has gone on in his life in the intervening year, Ian still appears against a background of grey, his place at the composition's left edge as tentative as before. Everything is different, and nothing. The big change, maybe, is that Ian, a Geordie, has swapped his hospital gown for a Newcastle United soccer shirt, Newcastle being his local team. Black-and-white striped, the shirt bears the name of the team's sponsor, a legend that seems to sum up its wearer's own tenacity, the Gibraltar-like solidity of his new life: it says 'Northern Rock'.

Three months after the picture was taken, the bank had to be saved from collapse by the Bank of England. Wainwright can not have known that this was going to happen; the coincidence was pure fluke. And yet that synchronicity also fits in with the unpredictable tangents and overlaps, the comings-together and pullings-apart of the work he has made with Wynne. The dance of their two media is the dance of life and death. *Transplant* is, if you like, a story of the constancy of change; that – to invoke Eliot again – 'time past and time future point to one end, which is always present'.

Charles Darwent is art critic for the *Independent on Sunday*.

Depths and clamour; inside and outside
David Toop

My subject here leans initially toward listening, away from seeing, for reasons which I hope to make clear, but then ends in some other perception which is both and neither. There is a strong pressure in our society to privilege materiality and substance, what we can see, touch, possess, or assess through physical relations, and what we can readily describe or represent. The reasons for this are easily appreciated: seeing tends to be more specific than other senses; people who can see locate themselves first of all with sight. What is seen can be easier to verify and share than what is heard. This is particularly true of sounds whose source is hidden or too far distant to see. Can we trust them? There is no certainty about such sounds; many are impossibly ambiguous or mysterious. In addition to this, sound is transient. Though some of it lasts far too long for comfort (even a few seconds of certain noises as they invade the body with great violence), we can sensibly believe that the energy of any noise will dissipate in time. If an event is known to be short-lived, then there seems to be less cause to note its brief existence and little desire to address any problems or distress it provokes.

Seeing is believing, or so the saying goes, and from this common-sense appreciation of reality comes the suspicion that sensations and perceptions derived from other senses are less reliable, less conducive to a construction of what matters in the world. Any project which combines sound and image will encounter these anomalies, these tensions, and the overlapping of perceptions. Sound evades gaze and grasp, so its presence or absence may be a matter of indifference. Only when it clicks into focus – as an alarm or vital signal, as speech directed at the listener, intolerable noise, oppressive silence, affective music or some ambient sound which has curiosity value – does it excite attention.

To be dispassionate about an emotive subject for a moment, what is so interesting about the hospital environment in which John Wynne and Tim Wainwright have been working collaboratively is that sound is so pervasive, so indicative of crisis, urgency, vital information, so continuous, disruptive and disturbing, yet the people who occupy that environment as patients are as vulnerable as human beings can be. Crucially, once within the hospital environment, choice slips away. They have lost control. As patients, caught in a limbo of waiting or recovery, they are plugged into a greater system – bureaucratic and technological – in which each element affects their wellbeing, their states of mind, their moment to moment sense of who they have been and who they may become. Again, sound lacks the specificity of phenomena that can be seen and touched. Perhaps the helicopter noise is a new heart arriving (but for who?), or perhaps it is the air conditioning, or a machine close by or far away, or a side-effect of medication, or a more generalised hallucination symptomatic of the body under great stress and under the influence of medication.

Intangible and perplexing, sounds can be considered as a form of hallucination. Words penetrate sleep like creatures passing through fog. There can be no turning away from noise, yet it may come from hidden places and all points of a place and whatever lies beyond, seeping and moving invisibly as a phantom, a ghost of some distant, unknown activity. With no connection to the visible world, it enters the body as a haunting to join all other sounds: of the imagination, of the interior workings of the body, of the immediate contact between the body and its environment. Who can say for certain which is which at any given moment?

In his book *The Object Stares Back*, James Elkins describes proprioception as an eighth sense, alongside sight, hearing, smell, taste, touch, temperature and gravity. Proprioception is the neurological term used to describe the body's internal sense of itself, a mix of conscious and unconscious awareness that locates the body, inside and outside, and registers the state of all those elements. 'It is the inaudible muttering of a body in good health,' he writes, 'as well as the high pain of illness.' Since *The Object Stares Back* is about looking and seeing, Elkins describes seriously ill patients in hospital in those terms: 'In some intensive care wards, the body disappears in favour of its signs, which appear on electronic screens in another room… At last the body becomes invisible as such: literally hidden under the sheets and behind the mask and accessible only through disembodied metaphors.'

This vanishing, into illness and transformation (either through transplant or death, or a vanishing into the medical environment) is a central issue of the work: the sound work, the voices, the photographs. In John Wynne's sound piece – *Part and Parcel* (2008) – an immersive spatialised field of whirring and bleeping, crashing and humming, disembodied distant voices and near-field speech – is created from the audio material he has collected in Harefield Hospital. The disorientating impression of envelopment in a confused web of sound is very strong, but this is repeatedly pulled back to specifics by recordings of the patients themselves. Feelings of fragility are pervasive and clearly audible in these bedside recordings: every tremor and lapse; the halting and wheezing of breath; the breaks in which speech is overwhelmed by tears; the pain of what is said; the grain of how it is said.

Deeply personal in its presentation and performance of the self, voice modulation is considered to be largely proprioceptive. As we speak, we tell ourselves how we are, even though we may tell others a different story. In extremis, voices will face difficulties in negotiating timbre,

pitch and volume. The body’s depleted energies will struggle to produce the sound of a sound body, and this struggle will compete against what the person has to surmount, within and without, and the memory of who that person once was when internal organs were what they once were. As with photography, the ethics of interviewing a person in this condition is a delicate matter, not simply because of vulnerability or privacy, and the close intimacy that draws out expressions of deep fears and all the other emotions we would expect, but because each person has become somewhat voiceless and helpless within the net of noise. Physically and psychically they are invaded by its alarums, excursions and invasions. The secret internal sounds of the body have become louder than the voice. To be confronted in this state with an instrument of power (the microphone) that is notorious for its capacity to draw out, extract, and like a scalpel, open up, is to submit to the reverse process.

From an outsider’s point of view, this appears to accentuate the uniquely disturbing process of transplantation, through which the body is opened up, an organ is removed, a replacement organ is inserted, then the body is closed again. ‘Trauma can rupture the circuit that makes up the vocal process, disturbing the boundary between inside and outside,’ writes Anne Karpf in *The Human Voice*. ‘Making sounds is an act of trust: to allow the intake and expulsion of air you must open up the body. A traumatised person finds such openings too risky.’

But those exposed to haphazard, invasive, hallucinatory noise, and made acutely aware of its effect through the singularity and sensitivity of their condition, will take that risk and give voice to their discomfort. Clearly, there is a need to speak to a listener (and the presence of a real listener is crucial, I would imagine) which overrides the invasive note sounded by yet another gleaming instrument of technological monitoring. Perhaps the vanishing is transmuted into reappearance? With that engagement with speech, John Wynne makes a connection to a previous project, *Hearing Voices*, in which native speakers of click-language in Botswana collaborated as performers from the beginning of the project. Their words, fragments of a disappearing language, spoke their own history and meaning, claimed their own place in the world of politics and commerce, yet they entered willingly into another world in which sound is a more extensive context, communicating in dimensions where meaning may be slow to arrive, inconclusive when it comes, yet somehow powerfully indicative of those experiences and articles of knowledge that occur just beyond reach, below the radar, at the edges of perception.

The subject of death is unavoidable here, and all recording is a measure of our anxiety about mortality. Summoning ghosts, recording creates, represents and recalls that which has passed. ‘And the person or thing photographed is the target, the referent,’ wrote Roland Barthes in *Camera Lucida*, 'a kind of little simulacrum, any *eidolon* emitted by the object, which I should like to call the *Spectrum* of the Photograph, because this word retains, through its root, a relation to "spectacle" and adds to it that rather terrible thing which there is in every photograph: the return of the dead.' This obscure word *eidolon*, Greek, meaning spectre or phantom, is close to eidetic: a mental image of such vividness as to seem real, and idol, false god. All these meanings will provoke a shiver of recognition: sound recording and photography perform these functions under their benign guise of memories, documentation, reportage, entertainment and art. The recording of sound is less common than photography but its purpose is still much the same – to suspend time and preserve the living and their places for later examination as spectres and the spectral. Both forms struggle with their role as false gods, as representations of the real. Writing about Tim Wainwright's photographs of cancer patients, Charles Darwent argues they are about complicity. His images reflect upon the way we objectify the terminally ill by projecting our own dread onto their individual cases, constructing a 'they', then opening a shutter onto the reluctant realisation that there is no 'they'. 'Wainwright's subjects are allowed to speak for themselves,' Darwent writes.

Objectification of individuals who have lost all power and control precludes acts of representing the self, of speaking for the self. Do I continue to look like myself? Are my words sounding my emotions, my needs? For the transplant patient, I can only assume that the objectification Wainwright critiques is compounded by deeply troubling questions about the self and who that self might become, once sustained and augmented by machines or given new life by organs from strangers. To what degree will dramatic transformations deep within be reflected by what can be seen of the outside? It is hard to imagine this erasing of being, further destabilised by absorption into the net of noise. The target of the microphone, however, possesses potentialities that differ from those potentialities revealed by the target of a camera. Photography's 'flat death', occasioned (in the analogue age) by the single click of which Barthes spoke, becomes in audio recording a passing through other depths: a permeation of the space inhabited by listeners, yet at the same time, and each time of listening, an unfolding of the same duration as the original recording. Audio recording is framed by two clicks: on, then off.

Barthes wrote about the click with some pleasure, the voluptuous quality of mechanical sounds: 'their abrupt click breaking through the mortiferous layer of the Pose'. 'For me the noise of time is not sad,' he wrote. 'I love bells, clocks, watches – and I recall that at first photographic implements were related to techniques of cabinet-making and the machinery of precision: cameras, in short, were clocks for seeing, and perhaps in me someone very old still hears in the photographic mechanism the living sound of the wood.'

Time moves through *Transplant*: time measured, time stretched, time lost and regained, time extended and questioning. Seeing presents us with specifics that amplify impressions of the solidity (and the inverse – the fragility) of a body in its space, the integrity of its moment in many dimensions. Life persists through photography. Through sound we can enter inside that body and taste some remaining flavour of life. These are two complementary and sympathetic versions of subjects 'speaking for themselves', and the contrast is telling. We enter through breath and the formation of sound within hidden places; a timbre that is uncertain of who it has become; those interior feelings articulated that have few willing listeners; the timing of thoughts and speech perhaps impeded by the failings of other parts of the body; the passage of spoken thoughts as they negotiate the web of sounds that threatens to engulf (though sometimes save) each individual from oblivion. Hearing the sound of air and space through which that body event passes, the multiplicity of a person over time, the clamour of exteriors and the silences of interiors, we come closer to inhabiting the totality of the sound ourselves.

But through all these differences and similarities of sound and vision, seeing and hearing, looking and listening, a rapprochement emerges in the collaboration. Meaning arises out of fades and overlaps, sudden appearances and vanishings, fusing and disparity. Distinctions of the senses are less important than their indivisibility. Are we seeing or hearing, and how much of either perception is a consequence of the other? We hear physical trauma, a visceral liquid sloshing of organs, see the transience and transparency of condensation on glass. Time ticks; light is crossed by shadows. There is waiting and urgency, footsteps clicking across the silence of empty chairs; a stillness of the person; withholdings, obscuring, and involuntary revelations: the blurring of what lies behind or outside peripheral vision and a babel of voices and alarms from beyond the field of seeing. Simultaneously, the eyes of a subject focus on the watcher who is us, you or me, and speech addresses the listener who is us, me or you. These two modes are out of joint in their two versions of time. The insistent stillness of a photograph hovers in and out of the temporal movement of spoken language, but both add a powerful sense of human presence and individuality to each other. Let's say we begin to feel each person, their existence. Emotion bursts out into the room, breaking and sounding, yet what we see is sterility, which is a necessary environmental condition but a sheer surface which the ragged ends of pain and distress can only hope to negotiate. All of these are places, inhabited and vacated, just as the body is a place, inhabited and vacated. There is the plastic and steel of machines, plunged into soft vulnerable bodies, making life function. There are the halting rhythms of a speaking person and the repeating, faltering clicks of a machine, the gasping pump of hearts; bright whiteness, clear plastic and watery air.

Oscillating between image and sound, this is, in itself, a transplant.

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Why are you always so happy?
Marcia Farquhar

Waiting for a heart or lung donor means waiting for someone else's death. Christmas is a good time for organs, I hear. The seasonal fatalities are a great source. How ghoulishly fascinating the statistics are for me. And how different they must look to someone waiting for a new heart. At once waiting for life and waiting for death, these patients are in a limbo of unimaginable strangeness. Waiting, waiting, waiting. The inmates of San Quentin put on one of the great productions of *Waiting for Godot* – it was a favourite of Beckett himself – and it's not hard to imagine the inmates of Harefield Hospital being similarly attuned to the play's central conceit, the apparently endless wait that is the beginning and end of *Godot*.

The faces that look back from the work could be otherwise congregated. They could all be people who've had paranormal experiences, or survived car accidents, or seen the light – there is something in their eyes – or am I seeing things? And the extraordinary ordinariness of their stories is spellbinding. The voices speak so matter-of-factly of the deaths they've avoided, and of the differences between their old and new hearts. I wonder if they are all still alive, or if some have gone already.

Lorraine, a husky-voiced blonde with cleavage and crucifix, tells of her heart going to an Asian man. How odd it is, she says, that the two were compatible in this way. She stops the man's nurse to ask after her own heart. It sounds like a romance, a mixed marriage that worked out well despite difference. The use of the word heart to refer only to the great pumping organ and not to any agent of romance, will or spirit takes some getting used to, and for me this haunts the accounts more often than not. For most, a change of heart is only a moment of decision and a reversal of attitude.

Ian is happy to show his VAD. I'm not sure what these letters mean. All I see are the huge tubes and pads attached to Ian's torso. He says he will wear his shorts and VAD for all to see. He thinks it might put people off smoking and drinking, and he wants to do that so they get to live a little. We only ever live a little, even if it's what they call a good long life. Post-transplant, and sporting a Northern Rock t-shirt, Ian says it will be nice to get a little house and do the garden. He wishes he'd come to know this way of life earlier. He talks of *wrong* roads and *right* roads, and how he feels he has been given another chance. I listen to him talk and consider my own paths, right or wrong, how many cigarettes and glasses of wine I have consumed in my 50 years and how half-heartedly I struggle to give them up. The half heart, the whole heart, the cold heart, the brave heart, the beating heart, the cheating heart…

I come to this work as a woman of a *certain age* with many habits ‘of concern’. The nation is, I hear, beset by a new scourge: mid-life binge drinkers are becoming an expensive burden on the National Health Service. These sad hordes are as worrying as those morbidly obese children I’m always reading about. In my own work, I have sung the praises of pissed aunts and ageing good-time girls. I have wondered what family functions would be without the drop too many. And I’ve made fun of puritanical attitudes to the antisocial habits of middle-aged women. While the young ones are out puking up on the pavements of city centres, we the older ones – and many of us are women – are behind closed doors at home, knowing not the size of a unit and ruining our own and the nation’s health.

Hearing the stories makes me think. I feel a bit ashamed. I should know better. I am an educated person. And I know it does what it says on the packet of *Camels*. So what a relief it is to hear the calm words of the handsome doctor: ‘You cannot ignore a certain group of people because they’re expensive’. I love this unpunishing approach. The good doctor would rather he were out of a job. Surgery, he attests, is a powerful weapon, but it is not natural and he would rather it were not necessary. He is a life-saver and therefore has to engage with this most violent and delicate of procedures until the ‘happiest day’ comes when cutting people open is no longer necessary.

I am perhaps most struck by Janette. She is two years younger than me. She is 48 and she has survived surgery. Her own mother died at 48 and she feels lucky. I understand Janette when she says being 48 is strange. My father died of a heart attack in July 1967, when I was nine years old, and I am now approaching the age he was when he died.

My father’s death was sudden and unexpected. ‘He’s gone’, they told my mother. ‘Where?’, she asked. No one could believe it. But then I couldn’t believe anything in the 60s. I was a child, and men went to the moon, great peacemakers were assassinated, and somehow, five months after my father’s fatal heart attack, another handsome doctor in South Africa performed the first successful human heart transplant. Already in love with Dr Kildare, I fell in love with Christiaan Barnard. He was a hero to me. I listen to Janette talking about being strong in a shaking voice, and my eyes fill with tears. She wants to live, she has children. I want her to live. I want to live. These are strange voyagers to a place I can only imagine.

Sanjay speaks in such a gentle voice of the beauty of blades of grass. After his transplant he walked out on a cold January day and was astonished by how much life there was. His hope is to walk to a temple in India dedicated to Ashapura. He explains that her name translates as 'hope fulfilled'. Again, I want him to get there. His hope is contagious – he seems to be literally offering it. All I see of Sanjay is a small image of the goddess on the palm of his outstretched hand.

The *wonder* at the simplest of pleasures, from seeing the beauty of grass to *coughing with air,* moves me deeply. When Simon tells of his new lungs he marvels at them: 'I had never coughed with so much air'. Simon was born with cystic fibrosis. I look at his blonde bookish good looks and imagine, but cannot begin to comprehend, the struggle. I was born with healthy lungs and have abused them – how stupid, and how terrible to take breath so lightly.

The portraits or still lifes, and the recordings of stories and musings, are simple but never simplistic. One of the great subtleties of the work as a whole is in its avoidance of both the sentimental and the didactic. It is so difficult to find the words that might do justice to this elusive quality. The work itself is never mawkish, and this is of course a testament to all involved. Maybe all I want to say is that I am moved, by the stark radiance of the images, the subtlety and intrigue of the recordings, and of course the stories, the wonderful stories. Like spontaneous parables they tell what is maybe the only truth: that living and breathing are precious.

James poses comically and sings of losing his heart, which is somewhere on a shelf. He explains that he gave his valves away. How brave and funny and wonderful his madcap humour is. Just after my father's death I was taken by American friends to see Billy Graham. At that moment he was just what I wanted, and when he said 'Give your heart to Jesus' I ran straight up and gave it to Jesus (or Billy). My mother didn't seem that pleased when I told her. I think again of what it means to give one's heart. I keep humming '*Last Christmas I gave you my heart, the very next day you gave it away'*, and I think back again to Christmas and those seasonal fatalities.

When John talks about the 'great lung from Dublin' (as he overheard it being discussed), he speaks of his debt to the family of the young man whose untimely death on a motorbike gave him the chance to live. He speaks calmly about hoping for communication with them. 'Sadly but understandably', he says, the family never answered his letter, but he never forgets their loss on the anniversaries of his new lung and life.

Steve has had his new heart since 1984. Although he says 'it's mine now', he adds rather mysteriously that he is more emotional and gets tearful 'for no reason'. He laughs heartily, and again one is reminded of just how much all of these people have endured. He concludes with a story about being asked by a colleague at work why he is always whistling and happy. ‘Well, I’m still alive’, he answers. The colleague comes back a few days later to say ‘I didn’t know you’d had a heart transplant’. Steve concludes with utmost mirth ‘I think he felt guilty saying ‘Why are you always so happy?’’.

Marcia Farquhar is a London-based artist whose practice encompasses painting, object-making, photography, monologue, and script writing. Much of her work has been concerned with the telling and retelling of stories from both private and public areas of experience.

Sound and the boundless body

Tom Rice

In comparison to other aspects of care and treatment, the sound environment in a hospital ward would seem to be of little importance. Yet both my research on hospital soundscapes and the body of work created through *Transplant* suggest that sound has a very considerable impact upon people who, because of being largely confined to bed or at least to particular areas of the hospital, might be described as a ‘captive audience’ to the goings-on around them.

In 1999 I conducted three months of ethnographic research at the Edinburgh Royal Infirmary in Scotland. When I began I was interested in their hospital radio station as an example of a small community radio network. I talked to patients at length, trying to gauge their responses to the output *Red Dot Radio* produced. But it quickly became apparent that one of the main reasons patients enjoyed *Red Dot Radio* was that it allowed them to escape the distinctive soundscape which surrounded them in hospital. This soundscape was created by the activity and work of care: the hushed conversations of nurses, the rattling of medicine trolleys, the rasping of privacy curtains being drawn round beds and so on. There were other more violent and disturbing acoustic events, too: coughing, vomiting, cries of pain, even the sound of a ward neighbour having a seizure and the efforts of the staff to resuscitate him. It became clear that, for patients, the sonic environment was an important feature of hospital life.

Because I had originally intended to carry out quite an academically conventional study of *Red Dot Radio* as a small community radio station, I had not looked into the possibilities of using sound recordings or photographs. Nine years on I can see how *Transplant* has employed both these techniques to good effect, re-creating the hospital environment with remarkable immediacy. The sound recordings provide a powerful illustration of the cacophony of illness, while the images bring the material environment of the hospital unsettlingly close. At the same time, the photographic portraits and interviews situate the viewer/listener near the subject, the rich visual and acoustic detail creating a well-developed sense of individual personalities, physical weaknesses and mental strengths. The *Transplant* project is an intimate form of ethnographic documentary, so intimate in fact that it can make uncomfortable, even shocking viewing/listening. Importantly, the installation brings its audience into such proximity with patients that we become, like the patients themselves, captive – unable to escape a confrontation with the reality of illness.

The ward soundscapes at the Edinburgh Royal Infirmary were imbued with fluctuating moods and changing atmospheres. In *Transplant*, too, images and sounds combine to evoke tedium or repetition which sometimes builds, becoming frenzied and fraught with pain and suffering. At other times there is the sense of a place oddly haunted by moments of unexpected, transcendental calm and beauty (in the light reflected in a grey linoleum floor, the striking image of a blood-stained bandage, or in moments of deep sadness and profound reflection in patient interviews). *Transplant* plays an important role in communicating the varied textures of life on the ward.

While I was working at the Edinburgh Royal Infirmary I noticed doctors listening to patients' bodies using stethoscopes. It occurred to me later that just as the hospital was an architectural structure which could be encountered acoustically by the patients, the body represented a physical structure which could also be understood through sound, this time by doctors. Several years later, positioning stethoscopic listening as a kind of 'auditory knowledge', I carried out a year of ethnographic research at St Thomas' Hospital, shadowing doctors and medical students and trying to learn to listen through the stethoscope myself.

I began to realise that the body has a complex and dynamic soundscape of its own. This soundscape is created by movement generated in bodily processes, for instance the flow of blood through the veins and arteries, the flow of air in and out of the lungs, the movement of matter through the gut, or water across the kidneys. Stethoscopic listening allows doctors to isolate particular body sounds, linking them to their specific physiological causes and making them valuable as diagnostic signs.

But whilst working on the cardiothoracic ward I realised that patients, as well as doctors, were listening to body sounds. Most of the people I came into contact with were suffering from heart problems and among those with disease affecting the heart valves a number had become conscious of strange rasping and squeaking sounds issuing from within their own bodies. Those who had undergone replacement surgery and had received metal valves (rather than tissue ones) were often aware of a 'clicking' noise coming from inside them, particularly at night, and found it extremely irritating. Although these sounds only indicated underlying physiological events and were not in themselves damaging or a cause for concern, for the people affected the noises had become a distinctive feature of their illnesses. The sounds created what Duden describes as an acoustic 'hexis', a sonically-marked sense of the body-as-self.

The patients introduced in *Transplant* are also undergoing treatments which involve a fundamental re-negotiation of their relationship with their own bodies. Those using artificial hearts (or ventricular assist devices) to maintain their circulation describe strong acoustic associations with these noisy machines. The repetitive sounds provide a near-constant reminder of the devices implanted within them which are keeping them alive. Changes in sound patterns, alarms, or even silence entail frightening emergencies. These patients dramatically exemplify acoustic ‘hexis’.

Virtually all the patients on the cardiothoracic wards at St Thomas’ would receive 15 minutes of heart monitoring twice a day. The machines produced a soft yet audible tone each time the heart beat, and this tone could be heard for some metres. The pulsing sounds could be reassuring. Some people said that they liked being able to hear that their hearts were still beating away regularly. But there was a general consensus that the constant pulsing was irritating and repetitive. The sounds of the heart monitor sometimes frightened people, too. Suffering from heart problems as they were, some didn’t like to think about what was going on inside their bodies. They didn’t want the beating of their hearts to be made so clearly audible.

Another diagnostic technique which created a particular auditory projection of the heart was echocardiography. The loud swishing or pulsating sounds generated during this procedure can be used by the echo-cardiographer to make inferences as to, for example, the rate at which blood is moving through the chambers of the heart. But the sounds are audible to others nearby and, of course, to the person undergoing the examination. Knowing that they are in hospital, and having quite a developed awareness that they are experiencing heart problems, patients can find the strange pulses disturbing. The sounds are sometimes food for unpleasant and unwelcome flights of imagination and fancy. Once again, people tended not to like hearing their bodily interiors sonified and broadcast.

We are used to the idea that sounds occur in the environment around us. They are external and are only internalised through being heard or listened to. In the experience of the people I describe above, however, sounds were produced internally and became external. They originated in and were conducted through the substance of the body, through muscle, tissue, blood – and were externalised through the mediation of technologies such as electrocardiography and echocardiography. Sounds that issued from within leaked and bled involuntarily into the world, transforming the body into a porous membrane. Suddenly there seemed to be no clear line between where the body ended and the world beyond began. The acoustic of the hospital made it hard for certain patients to preserve a sense of their bodies as bounded, self-contained entities.

This theme is also clearly perceptible in *Transplant*. Recordings convey a soundscape charged with signals, tones and alarms relaying information about the physical processes of the body. The images of, for instance, a person attached to a lung drain or an artificial heart indicate how internal bodily events or processes can be made external in a startlingly direct or stark fashion. At the same time, the bubbling sound produced by the pump or the mechanical rhythm of the artificial heart mixes with the other sounds in the ward. My research had attempted to move past the idea of a hospital soundscape and to focus instead on auditory knowledge of the body. But – as *Transplant* demonstrates – exploring the *bodily* soundscape and the acoustic elements of illness only serves to make the complexity of the *ward* soundscape more apparent. Instead of being marked as 'interior' by the 'natural' boundaries of the body, body sounds seem to be externalised in a number of different ways, producing a continuous soundscape to which the body contributes.

It is not only the ward sounds, perceived as external, which come to characterise the experience of hospital. For some patients, sounds which originate within the body are amplified and projected by technologies designed to monitor or support physiological processes. These bodily broadcasts are internalised once again through listening. In this complex acoustic process the boundary between bodily interiority and exteriority is challenged in sometimes disturbing ways. Indeed, like my own research, *Transplant* suggests that sounds permeate not only the physical, but also the experiential and imaginative spaces of illness.

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The psychological journey of transplantation: a second chance

Claire Hallas

Understanding the psychological experiences of the men, women and children who undergo transplants every year is vital to their emotional and physical quality of life and to the success of their medical care. Encouraging them to think about, and make sense of, their post-transplant world can transform their feelings about change and uncertainty.

Having a second chance at life after being near to death is as life-changing as it sounds. But while for some the pathway to living with and enjoying this chance is relatively seamless, others face challenging difficulties. Whilst medical advances in transplantation have gone from strength to strength, the experiences of those living it have not changed much; they continue to demonstrate that each person is unique when it comes to coping with life after a transplant.

Many of the experiences people have to come to terms with after transplant are influenced by the start of the journey, on the transplant waiting list. It is often described as ‘dancing with death’ – a time to live life to its fullest, knowing that death may come before the transplant. This uncertainty can challenge a person on a deep level because with the deterioration in physical health comes an internal psychological battle.

This battle focuses on the need to try to remain ‘normal’ at a time of physical compromise, as people try to stay in touch with how they saw themselves before ‘the disease started to take over’. This need for a sense of normality, of being in control of one’s world and decisions and being involved in the ‘here and now’, requires significant focus, motivation and commitment. When the transplant goes ahead and the elation of surgery and survival is over, physical and emotional recovery begins in earnest, and the two common questions are ‘who am I now?’ and ‘where am I going?’

No two people will react the same way to learning that they have an infection or episode of rejection. Their interpretation will be influenced by fundamental beliefs about themselves and the world. Finding out that you are well enough to go back to work and able to resume your previous roles and responsibilities produces extremely different responses: from jubilation and pride to indifference, or a sense of trepidation, all accompanied by the need to re-prioritise precious time into more worthwhile activities. After transplant, a person’s sense of the composition of their life changes forever – and is continually re-defined in its new significance.

The auditory world also has a unique part to play in the experience of living with a transplant. By the time they leave for home, many individuals have been through multiple surgeries, had mechanical artificial devices implanted to support their heart until transplant and have lived some considerable time in hospital. Noises within this environment are imbued with significance, their meanings incorporated into the learned experience of treatment, hospital and their health. Vital pieces of information are assessed through auditory memory, and the sounds of trolleys racing along the hospital corridor, alarms going off, drug infusion pumps beeping, all impact on patients' interpretation of their safety, vulnerability and sense of place within this world. Sometimes the lack of escape from sound, the lack of choice, can be unbearable. In particular, those individuals who have had artificial hearts before transplantation often describe the psychological desperation of being unable to exert control over hearing and feeling their body move and interact with a device. These are experiences that we do not often think about; we do not realize how significantly sound can impact on a person's psychological well-being.

'…[the] thumping of the heart… you've got the bellowing of the bellow inside, the diaphragm I suppose they'd call it. And so I can hear that and feel that as well. And I've also got a little ping; everyone laughs and says there's no ping. That's 'cause they can't hear it. But when you actually get a stethoscope and put it next to it, you can hear that it's going thud-thump-ping in rhythm. But I can hear that all the time. And then they said 'oh, you'll get used to that', and I still haven't got used to it. It's driving me mad; I can hear it 24 hours a day, seven days a week.'

The true wonder of significant technological advances in medicine brings challenges for those living with these developments. Medical successes vital for life-sustaining treatments have human outcomes – and these will manifest themselves as emotional experiences. They can be of great personal significance, and where some might experience feelings of pride as a survivor or as a pioneer of a new technology, others might feel like objects in an experiment – like a 'guinea pig'.

The emotions of the transplant experience drive and direct this 'second chance' through its journey over time, but the *quantity* of time varies, and this variance is the focus of complex internal attention. The need to manage the advancement of time by preventing medical complications can lead to an obsession with monitoring health. The answer to the question 'where am I going?' often appears to depend on this, and is influenced by the individual's belief in their new organ(s), and in their own capacity to decipher signs and symptoms from them.

One young woman, struggling with finding her identity after a transplant, said 'I need to finish what I started and go forward with what I haven't yet begun'. Life through the eyes of a person living with a transplant can be full of experiences that are precious, exciting, pressured, enlightening, overwhelming, fulfilling and uncertain.

But it is also an opportunity to make dreams come true again, of knowing that ‘where you are going’ is defined by who you are, what you want and when you want to make it happen.

Decisions about life post-transplant are just as controllable as decisions about life prior to transplant. Many individuals find it hard to recognise their ability to make choices like any other person, with or without health problems, but it is when this recognition dawns that personal growth can take place, and the answers to the two vital questions about themselves and the future can be addressed.

Claire Hallas in conversation with Tim Wainwright and John Wynne

CH: For me, the most interesting part of the transplantation process is when people have to make the decision between life and death. They come to a conclusion that they are not going to be living for what they consider to be their natural life span, so they start to make decisions about how they want their life to progress. That decision about going onto the waiting list is an amazing experience. As a psychologist, you listen to all sorts of different rationalisations – some bizarre, some very small, some enormous – for choosing life. Some people choose death. Becoming part of the process of making these decisions with them is just unbelievable. You follow somebody through a transformation, or re-birth, into a new phase of life; you see people go from being incredibly well to being at death’s door, and then back to healthy and living again. You get to see a life totally transformed within a very condensed span.

JW: When you say that some people choose death, do you mean some people decide not to have a transplant and to live with the consequences?

CH: Yes, absolutely. For some people the ability to make that decision is compromised by the uncertainty of their life. For instance, there can be a period when you are too well or too ill to be transplanted and actually people need to interrupt the information they are getting from their [medical] teams, rationalise it, and think ‘what does that mean for me in terms of what I want out of my life?’ Some people will choose to have five years of a quality of life they have learnt to live with, which may seem barely worth living to some of us. But they have learnt to cope and adjust to it, and they would choose that rather than the unknown, or the uncertainty of what might happen after transplantation. And that is a reasonable, thought-through decision.

JW: We met someone who had been working in the city, but after his transplant he left his job and began teaching adults with learning difficulties. Is it common for people to make such significant changes to their lives?

CH: Absolutely. Yes, there are very few people that go back to what they might consider their humdrum life of work and everyday routine. Most people take a very strong look at their existence and their second chance – their opportunity for change. Most people want to contribute something to society, to feel a sense of worthiness about having that gift; most people want to feel that ‘I am a good person and I care about other people as well’. Careers in finance, business… ruthlessness, cut-and-dried, cut-and-thrust… it really doesn’t appeal any more; they don’t want stress, they don’t want strain.

TW: It’s really interesting because in religious language that would be called a conversion experience.

CH: Yes.

TW: In your language?

CH: Realisation, I think. A sense that you can’t stay as you were. Not necessarily that you must be converted into something else to make sense of who you are, but that you’re not *able* to stay the same – not able *medically* as well, because you cannot put yourself at risk. So you’re constantly contemplating ‘how am I going to look after myself? And how is that going to impact on me in the future?’

JW: The issue of being ‘worthy’ is something that has come up a few times. One person said that at a certain point he felt like he’d ‘earned’ the organ – it became his. I can’t remember how long after his transplant this was; it might have been after a year, two years? Does that issue come up often? Do people often move from feeling they’re using someone else’s organ into feeling a sense of ownership? What are the variations in how long that takes?

CH: How long is a piece of string? There is no way of predicting whether people will immediately accept the organ as their own, or never accept it. The people who perceive the organ as a pump and nothing more – a pump for a heart or a pair of bellows for lungs – usually integrate those organs into themselves pretty quickly because they’re biological, they’re physiological, they’re biochemical – ‘everything that is already in my body, and therefore they’re “mine”’. But for people who personalise them –

who have thought about what the donor would have been like, who've got quite strong emotional, spiritual links to the donor or the donor family, will often find that more difficult because of feeling they must be worthy, or grateful, or show a level of commitment to those organs.

That can affect people in very, very different ways. For some it can mean that they never accept themselves as worthy. They can develop quite low self-esteem. Other people can become obsessive, hypervigilant, and can go to the other extreme: they will do everything and anything in life to prove just how worthy they are to themselves and the donor. That can be helpful or it can be unhelpful. So I like to try to work with people early on to prepare them for a balance between gratitude and worthiness, and a sense of yourself – so that you had the transplant for *you*; it wasn't to live your life through somebody else or their family.

JW: So, if people who have a more mechanistic view of the body tend to adjust more easily, does it follow that people with a more spiritual or religious outlook often have a more difficult time with transplantation?

CH: It's individual, again, but I think that people who are more 'psychological' or more able to analyse and be aware of their feelings and their emotions are prone to thinking more about the entire experience and its meaning in greater depth. For some people that can be helpful, for some it can be a real hindrance because it can impair their ability to move forward. I think those people can often become a 'transplant patient', rather than a person who's had a transplant. The difference is the integration. You're a normal person, you're not a transplant patient or a 'transplantee'. And it is all about identity at the end of the day: how you view yourself.

JW: Hospital is a place where patients, and staff to a degree, lose their identity: your normal clothes are taken away, patients are confined physically, etc. When you add to that all the issues around transplanted organs, identity must be a particularly important psychological issue here.

CH: I think it's the biggest thing I work on: re-establishing identity after institutionalisation. People are completely institutionalised by the time they have been through a chronic illness; they have come to the end of their life, and then are waiting and waiting and waiting; either waiting to live or waiting to die – not quite sure which for most people. Then they come through this and are starting to live again. When I'm preparing people, right back when they first go on the transplant list, the big thing I focus on is 'know who you are now; you mustn't lose sight of that person, or you'll never find them again'. Establishing that identity and holding on to it, defining it, bringing out all the different elements, is really critical. The people who are in an institutionalised world where they have bought into the whole *system* of transplantation can lose this very quickly and find it incredibly hard to re-establish. [The system] is unfortunately a very hard thing to change as a psychologist. It has to work in a particular way to keep people safe and well and alive, but it actually depersonalises people very quickly.

JW: One of the most emotive subjects for many of our subjects has been the donor. This took me somewhat by surprise the first time it happened, but then I saw it over and over again as an issue that people have a lot of difficulty dealing with.

CH: It's very interesting you say that, because it doesn't tend to come up as much as I would have thought. I think that when you see people very early on or immediately post-transplant it's a big issue. That can come from a system where people ask 'Do you want to know about your donor? Have you thought about your donor?' And just coming through major surgery, survival – the elation of being alive, the realisation of potential for the future… all that, coupled with a discussion about somebody who has lost their life to give you their organ… it's not surprising people are emotional. But later on people rarely bring up the issue of the donor as being terribly emotional. I think it's the six- to twelve-month period, when people are just getting back on their feet and are able to do things that they weren't able to do before. They start to think 'That's because I've had the transplant. Where has that come from? What happened to that person? Who are they? What did they do with their life? Why do I need to be considerate of that? What do I want to prove to that person?'

When you talk about the relationship between the donor and the recipient, initially people will say things like 'they had to die for me to live', but of course once you actually unpack that statement, you realise that the person would have died anyway. Once the realisation of that distance in the relationship develops people don't feel guilt; they are able to move on and disconnect. But what they do feel is a sense of responsibility, or gratitude, or willingness not to waste the donation. I suppose it's a very well-adjusted person who can balance that with a sense of needing to lead their own life in any direction that they see fit. That's why I'm here – my goal is to balance that for people so they don't tip to one side or the other.

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Heartbeat
Lesley A Sharp

> 'This, your visit here, was a homecoming to us,' [Dick Becker] told Winkle [Fulk]. He seemed to be edging closer to her, as if he wanted to reach out and touch her, as if there were hundreds of thoughts he wanted to communicate to her… At the end of the evening, just as we were about to say goodbye… Dick Becker stood up in the center of the living room of his house, paused, and then walked slowly and hesitantly over to Winkle Fulk, who had once stood alone at the precipice of death. He eased himself down on his knees, took Winkle Fulk by the shoulder and simultaneously drew her closer, as he leaned forward and placed his ear gently but firmly first between her breasts and then at her back. Everyone in that room… was suddenly and silently breathless, watching as Dick Becker listened for the last time to the absolutely astounding miracle of organ transplantation: the heart and lungs of his dead son Richie, beating faithfully and unceasingly inside this stranger's warm and living chest.
>
> Lee Gutkin, *Many Sleepless Nights* (pp. 358–9)

The steady sound of a beating heart is both arresting and cliché, offering the most basic signifier of life's presence. In EuroAmerican contexts its sound is ubiquitous: we regularly encounter the heart's reverberating thump-thump, thump-thump in film, advertising, poetry, and pulp fiction, where it signals hope, longing, anticipation, danger, or fear. As such, the heart is rendered extraordinarily tangible through the auditory effects of enhanced sound. Yet the human heart is never completely freed from its intangibility, because it remains viable only if hidden and nestled safely within the chest cavity of a living human being. To *see* and, thus, to *expose* the heart is a perilous act: aggressive assaults and palliative surgeries threaten its perpetual, dependable rhythm. The beauty of the heart lies in the fact that we can so easily detect its presence. If we pause to listen to its steady beat, we can sense the vitality of the organ itself, and our own life force, too. When a professional touches a stethoscope to a patient's chest or back, an athlete checks her wrist's pulse, or a Samaritan rests his fingers on the jugular of a collapsed stranger, each inevitably strives to reconfirm human life and, ultimately, human existence.

Human organ transfer alters this reality. In *Many Sleepless Nights*, Lee Gutkin traces the experiences of patients in desperate need of transplantable parts. As illustrated by the passage above, Gutkin concludes his work with an encounter involving Dick Becker and Winkle Fulk, the latter a woman who had been transplanted with the heart and lungs of Becker's beloved, deceased son Richie. The actions of Dick Becker – when he kneels before Fulk and draws her to him – demand sudden intimacy as he nestles his ear against the chest of a woman who is both stranger and, in stranger ways, a cherished familiar. Becker's desire to listen is laced simultaneously with pathos and magical thinking. When he hears the heart beat and the lungs breathe he can imagine for a few fleeting moments the presence of the child he nurtured, albeit now within the body of another.

Interestingly, Becker's request is not unusual. As an anthropologist I regularly encounter surviving kin of organ donors who have made similar requests of strangers, and transplant recipients who have acquiesced to (or, perhaps, endured) mourning family members' requests to press an ear for a minute or two to their chests. Such encounters are cathartic for donor kin, because the heartbeat facilitates a surreal form of spectral intimacy. This is facilitated by the fact that, in the United States, donated organs are frequently described as 'gifts of life' that enable the deceased to 'live on' in others, to whom they grant a 'second chance', a 'new lease on life', and the possibility of 'rebirth'. By listening to the heart, surviving kin confirm the mystical quality of the donor seemingly living inside the body of another.

Organ recipients, however, are wary of these encounters. Although they regularly consent to such moments of physical intimacy as humble attempts to repay their precious gifts, they nevertheless find these experiences unnerving. Organ recipients employ a range of strategies for coping with the realities of their organs' origins: some embrace (at times joyfully, at others, reluctantly) the sense that someone else now dwells within them; still others generate elaborate metaphors to describe their altered states, among which the mechanized body figures especially prominently. One man I encountered, for instance, conceived of his refashioned body as a finely-tuned racing car. All recipients are inescapably aware that through organ transfer dead matter generates renewed life, and they cannot help but sense the deceased person's heart beating inside them. The knowledge that a transplant surgeon must excise and discard a patient's damaged heart, replace it with another derived from a deceased donor, and then jump-start this transplanted organ to reset its rhythm, inspires profound thoughts of self-transformation. The auditory quality of the heartbeat further bolsters the associated sense of renewal.

Within the US, shared understanding of the transformative properties of organ transfers has generated a fascinating array of responses among professional and lay parties. For instance, transplanted organs (and donors' bodies) are represented visually as 'transplanted' trees or flowers that thrive within new environments. This 'greening' of the human body is ubiquitous, where a range of flora (and not human bodies or body parts) grace posters, pamphlets, promotional t-shirts, and organisational logos. As such, references to sickness, suffering, death and loss are erased. Among organ recipients, the dates of their surgeries mark life-altering events and many subsequently celebrate not one, but two ‘birth’ dates for the remainder of their lives: first, the day on which they emerged from their own mother’s body, and second, when they were ‘reborn’ through organ transfer. Rebirthday parties are popular celebrations, when recipients gather with friends and kin to mark another year of surgical survival. During such events, recipients and guests may indulge themselves by eating a cake fashioned in the shape of, say, a kidney or a heart.

Although ‘green’ imagery and celebratory rebirthday parties may serve to deny death’s presence, organ recipients nevertheless find it impossible to forget that another may well have died so that they themselves could live. As reported by sociologists Renee Fox and Judith Swazey, the ‘tyranny’ of so unusual a gift that can never be fully reciprocated troubles many recipients, who may well seek out (or respond to the inquiries of) their donors’ anonymous kin who originally granted consent to donation. Initial encounters bear much in common with those involving adoptees who successfully locate their birth mothers. Within the realm of organ replacement, an organ recipient and his or her donor’s kin share the sense that the deceased donor thrives (and in the case of the heart, ‘beats on’) within the recipient’s body. These parties may eventually integrate one another as adoptive kin: a man whose body houses the heart of a couple’s deceased child may well be regarded – and even addressed as – a surrogate son. A request to listen to the donor’s heart, as described by Gutkin, frequently marks the first step in establishing long-lasting, intimate ties in those instances where a heart has been implanted in a new body.

The transplanted heart itself exposes uncanny qualities of organ transfer. The steadiness of its heartbeat is an intensely foreign experience, one that some patients have gone so far as to describe as ‘unnatural’. This is because a donor’s transplanted heart is a *denervated* heart: one that can not be reattached to the patient’s nervous system. Uninhibited by the nervous system, the denervated heart beats faster than a normal one, resting at a rate of 95 – 110 beats per minute. Despite this accelerated pulse, it responds sluggishly to exertion, exercise and hormonal surges. Physically active patients must learn to calibrate their activities with this knowledge in mind. A body of clinical literature documents patients’ attempts to regulate their heart rates when they swim or run, for instance, because their hearts do not race suddenly and predictably when they are excited, aroused, or frightened.

The difference between the sense of what is ‘natural’ and ‘unnatural’ may be even more pronounced when mechanical devices are involved. Some recipients perceive this as an extraordinary form of self-transformation or even alienation, yet such experiences are devalued by a historical focus on the physiological, rather than existential and ontological, consequences of heart transfer. Within experimental settings in the US, a range of prototypes have been implanted in patients for whom medical understanding of futility has ironically rendered them ideal experimental subjects. Over the past 20 years or so, a score of patients have consented to have their hearts fully excised and replaced with ‘artificial’ ones, implanted multi-chambered mechanisms with external lines that permanently tether patients to cumbersome drive boxes that, in the 1980s, were the size of a washing machine. More recently, though, patients are more likely to be implanted with a left or right ventricular assist device (VAD) that augments the work of a resident, albeit failing heart. VADs may be implanted permanently, or they may provide a temporary ‘bridge’ until a human replacement heart can be implanted. VADs are powered by portable (and external) battery packs, some of which can be slung over a patient’s shoulder and are easily mistaken for camera bags.

My own research currently focuses on the efforts of laboratory-based inventors, among whom mechanical perfection may well eclipse the fleshiness of the body. Inventors’ concerns contrast with those expressed by specialists based in clinical settings, among whom the body is valued above the machine. Biomechanical engineers (many of whom began their careers in the field of aeronautics) strive tirelessly to perfect the efficiency of their devices, anticipating how they might one day improve on the biological body’s imperfections. Rotors and pumps – highly reminiscent of airplane propellers – are fashioned from such inert substances as titanium and high grade plastics. When a device is excised from the body of a deceased or subsequently transplanted patient, industrial engineers back at corporate headquarters await with great anticipation the results of the mechanism’s own ‘autopsy’, looking carefully for microscopic evidence of wear and tear. In short, their isolation from daily clinical routines can dampen their awareness of the potential suffering endured by patients whose bodies once housed sophisticated machinery.

Among the more intriguing developments in this rarified realm of science is the proliferation of internal debates among engineers over the intricacies of mechanical design. Currently, inventors’ opinions are split over the merits of ‘pulsating’ versus ‘continuous flow’ pumps, and project decisions bear intriguing consequences for their recipients. The recipients (or, perhaps better phrased, implantees) of earlier mechanical prototypes spoke of the nightmarish quality of the sounds generated by necessary machinery. Fox and Swazey, who worked closely with ‘Bionic Bill’ Schroeder and his medical team (Schroeder died in August 1986 following 620 days with the Jarvik-7 heart) reported that he compared the incessant noise of the heart’s driver to that of a threshing machine.

Today, as Tom Rice has pointed out, a greater awareness of the detrimental effects of such auditory assaults shapes contemporary engineers' efforts to refine their devices. As described to me by one inventor, a key advantage of his firm's most recent model is that implantees speak of their inability to hear the mechanical heart at work, even when they are at rest in a quiet room. Philip, a VAD patient in residence at Harefield Hospital, offered these reflections to John Wynne: 'It was driving me mad. And some people get to live with it, but it just got to the point where I couldn't anymore.' Interestingly, though, the disturbing qualities of the device may nevertheless become an inseparable part of the self. As Philip later explained after the 'explantation' of his device, 'it's something you miss when it's gone, even though I hated it when it was there, you miss it when it's gone… and it was so quiet'.

The continuous flow pump generates especially intriguing questions about the hybrid nature of this sort of human-mechanical interface. Put simply, patients implanted with such devices have no pulse, and private anxieties may well overshadow the implantee's sense of wonderment for the machine. As one VAD recipient mused during an interview with me, what if strangers were to find him unconscious? Would they assume that he was dead because he has no pulse? The tyranny of technocratic existence inevitably challenges deeply rooted assumptions about what it means to be human and alive. Although what ethnomusicologist Stephen Feld calls 'acoustic sensation, knowledge and imagination' together inform notions of self-transformation among heart recipients or those maintained by pulsating machinery, what ontological deprivations ensue in such instances involving devices hidden deep within the body that lack 'acoustic revelatory presence'? These are perplexing questions that force us to stretch definitions of humanity, as exemplified by a man with no pulse whose heart can never skip a beat.

Editor's note: The protocols surrounding organ donation in the UK differ from those in the US. In the UK, in order to protect the wishes of all parties, recipients and donor families are able to contact each other in the first instance only via the mediation of their respective transplant co-ordinators. If one party chooses to write a letter, this will be delivered by their co-ordinator, who ensures total anonymity. The other party are entitled to leave this letter unopened if they choose, or to read without responding. If they choose to reply, further anonymous contact is then supported through the co-ordinators. Donor families and recipients sometimes decide to meet after this process.

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Magdi Yacoub in conversation with Tim Wainwright and John Wynne

TW: You're obviously very driven in what you do. What is it that drives you – what is your motivation?

MY: I think it's an absolute privilege to be involved with people and, equally, science is a gripping thing – because it's to do with pursuit of the truth and that in itself is very exciting. The two things are related.

There is nothing more stimulating and satisfying than seeing somebody who is very sick, when people say he or she is a hopeless case and has no chance whatsoever, and then seeing them 20 years later looking the picture of health – and that's… I can't describe it any other way than as a fantastic privilege. So maybe I am driven; but for a reason.

JW: There are lots of ways of transforming people's lives, even within medicine – why is it particularly surgery that interests you?

MY: I am interested in surgery, but I'm interested in all other aspects of medicine too. Surgery is a very powerful weapon; but it's not a natural thing, so I have my reservations about surgery – because I don't like to cut people, if you like. But it is the shortest way to achieving a major difference to the patients, and that's what attracts me.

It also involves a whole lot of very rapid decisions, changes in the condition of the patient. You see the effect almost instantaneously: you see somebody who's very, very sick – like a transplant patient whose heart is stopping repeatedly – and a few hours later you see a completely different picture. That's something I find very stimulating.

Apart from that, it deals with and involves many other branches of medicine and science. For example, transplantation relies very heavily on understanding the immune system: the cellular and the molecular, so that's very, very attractive as well, and acts as a bridge to so-called 'transplantation medicine'. It's really a paradigm for that. What that does – apart from the obvious, discovering the truth and pursuing science for the sake of science – is actually to help understand the fundamental mechanisms of disease. And that attracts me a lot because it is the only way we can *prevent* disease – by understanding precisely what happens at a molecular and cellular level.

People sometimes said, at least at the beginning of the transplantation programme (you don't hear it so much now), 'should we really be spending all this money and energy on high-tech medicine like transplantation, when applying it to prevention would have a far greater effect in terms of numbers?' And that used and continues to hurt me a lot. It is not a competition – it's a continuum; you really cannot ignore a certain group of people because they're expensive. We're dealing with human beings. And prevention is what we *all* want. A lot of the science pursued in this institution – at Imperial College and certainly in this department, is to do with understanding mechanisms, and prevention. People ask 'Why are you trying to prevent diseases which will stop your specialty?' Well that would be the happiest day of my life – to stop cutting people.

The continuum between high-tech medicine, science and prevention is very stimulating indeed, and transplantation has been a fantastic example of trying to prevent what happens in the first place: patients seeing [transplantation] try to prevent what got them in trouble in the first place, and scientists get diseased human tissue for the first time – so that we can understand what happened at a molecular level before we develop new ideas about how to stop it. In this institution, for example, we have a major interest in so-called 'regenerative therapy': we are trying to get the hearts to recover through a variety of mechanisms; and a lot of that is thanks to transplantation.

The transplantation programme has highlighted the need for a radical form of treatment for a large number of patients who were (and maybe to a certain extent continue to be) neglected. It has shown the plight of patients with heart failure, advanced heart failure, and has been a very successful stimulus for developing new things.

JW: I'm fascinated by your statement that you don't like to 'cut' people. One of the things that struck us when we spent a day in the operating theatre during one of Asghar's operations [Asghar Khagani, head of transplantation at Harefield Hospital] was the violence of the process: the body being torn open and pulled apart. Can you say anything about how you have coped with that?

MY: My father was a surgeon. While I was at medical school he invited me to come and watch surgery and maybe even help him. I fainted when I saw the sight of blood – so I don't like blood at all, I think it is a violent thing. If I were to see an accident and somebody bleeding, I would feel sick – because it is an uncontrolled injury.

It's completely different now; I cope with it because I know it is totally controlled. The patient is anaesthetised – he does not feel the pain, he's not losing the blood forever, if you like, and he's not going to have to suffer the effects of that.

Nevertheless it is something I would like to avoid; we have all sorts of methods of minimising trauma because really we don't want to hurt people and we don't want to cut people. I certainly don't want to cut people… but the result, as I said earlier, is fantastic and justifies cutting people for the time being. I hope one day we'll stop.

TW: I've been fascinated by rejection – why the body will just choose one day to reject the organ for no apparent reason. Is the cause always scientific or is there ever a psychological reason for rejection?

MY: Rejection is a very primitive type of reaction. Primitive in several ways. It involves two types of system: the so-called 'innate immune system' which is more than 20 million years old in evolution and governs how to cope with anything not 'self'; and making sure you have a space for the organism. As time has gone by many more sophisticated systems for dealing with rejection have developed and it has become very complex. Sometimes in its complexity there are defects, and that's where we try and get in and stop the process of rejection.

As you say, initially the rejection process is almost violent but after a certain period of time – if you deal with it episodically – it becomes less severe. In the old days people thought 'it will never stop, it will keep coming back until it eliminates the organ'. But that doesn't happen and the organ is accepted more and more. The worry is that in certain cases acceptance involves so-called 'immune tolerance' [a vulnerability to disease as the immune system lowers its guard to accept the new organ]. There is 'specific immune tolerance' [where the immune system remains intact while the organ is accepted] but that's very rare.

It is sad in some ways that the original experiments of the father of transplantation (the late Sir Peter Medua) showing that the immune system was not invincible, and that you *can* have 'specific immune tolerance', led everybody to work on *non*-specific immune tolerance; and the dream which started with Peter Medua has not been achieved. That, to my way of thinking, is going to happen. When? I hope very soon. One can predict four or five years. It hasn't happened in the last 50 years, although Peter Medua described something similar.

This would make the organ acceptable *without* drugs and would create a permanent, not episodic, type of tolerance. But permanent and also specific to the organ, so that the immune system can still cope with infection and viruses. Any invader will be eliminated, but the heart will continue. That will happen.

JW: Another thing that struck me while watching Asghar operate is the incredible level of confidence that surgeons need. Does that sometimes have to be a blind confidence, where you ignore doubts?

MY: I don't know how to answer that. A lot of it is through experience. In many cases the surgeon encounters things he or she did not expect.

But we deal with it in two ways: one is to rehearse everything so many times in our mind *ahead* of the operation that we know exactly what is going to happen. And the other is that if something different occurs, we have learned to be adaptable – to correct the course of action. Some anxiety might still be there, but we've learnt to mask that. The surgeon who shows anxiety is not a good leader, because suddenly it goes right across the team. So if there is the slightest anxiety, wondering what's going to happen next, you really learn to suppress that and say 'I'm going to deal with it, whatever it is'.

JW: So how would you explain your remarkable ability to cope with stress? A lot of people deal with nothing like the kind of life-and-death decisions you deal with all the time, and are permanently stressed out, but you obviously sleep at night…

MY: Yes – it is not a completely stress-free life, as you say, but it's a balance. It's knowing how to rationalise things. For example, if something happens to a patient, you have to find out precisely why that happened, try and get emotion out of it and investigate it with the team – without blaming people, but by being very, very rational.

The second thing is that a surgeon, or any practitioner, is not a machine and you cannot get rid of human characteristics like emotions – so you can get attached to a child, and you should not suppress that type of thing because after all we are all human. But you should not allow that at any time to interfere with the thought process. So, separate what is emotion and stress from rational thinking, and deal with the problem in hand for what it is: a problem that needs solving.

JW: Some people would say that transferring organs from one person into another requires an essentially mechanistic view of the body, but you don't seem to agree with that.

MY: No, I would agree with that. I think there is a fantastic link between form and function, so – structure. There are artists who understand that. Structure is very important for function. And for a surgeon, for transplantation and for any type of reconstructive surgery, you need to have that thorough appreciation and respect for three-dimensional structure… to try and see how it all fits, and how things should happen. That goes all the way from the organ itself to molecules. That's what we understand now: the three-dimensional structure of each molecule enables it to do what it does. An enzyme, a structure, a protein – you name it and it is a three-dimensional structure. So surgeons know a lot about that… or they try to.

TW: Do you find that things are always obviously rational, or are there times when despite all the scientific information you have before you, something ‘other’ happens?

MY: There is something mystical… that’s what you’re getting at? I think one has to try and be scientific but also leave a space for the spiritual and mystical. Not allow it to dominate the scene, but just be aware that it is there. And science does allow for that to a certain extent. Several philosophers of science articulate that very beautifully, that science is the search for the truth, that all of us know that the truth is beautiful and that the truth is unattainable. Ancient Egyptians knew that; their goddess of truth (which we think is science) was the most beautiful goddess there was. Her name was Mat and she was absolutely beautiful in every way; you strove to get near the goddess of the truth. But what did she do? Every time someone came near her she flew. She grew huge wings and disappeared. And that’s what happens in science and that’s what the philosophers say. We strive to get to the truth, we get near, but we know that it is not the truth… and do we despair? Not at all: we think we are nearer. What do we call what we have? We escape and say it is ‘current knowledge’. ‘Current knowledge’ is as near as we get to the truth and there is something beyond it which we have to keep trying for. Some of this might be spiritual, mystical, call it what you want – but to claim that you know it all is just not correct.

JW: I’m fascinated by your belief in the National Health Service, which is obviously very strong. Some might argue that if your interest is in furthering research and saving more lives, perhaps the resources at your disposal – not to mention the financial rewards – would have been greater if you’d worked in the United States. Why are you so committed to the NHS?

MY: The NHS is a unique system. While it definitely has certain failings, I do not know of any other system which is egalitarian. It satisfies all of us. If you ask any individual ‘do you want to be treated perfectly?’ he or she will say ‘yes’. But if the next question is ‘do you want your neighbour to be treated?’, I think all of us would say ‘of course’. And that can be achieved. I have worked in other countries – including the richest country in the world, the United States, and I wasn’t happy at all seeing the difference. You’re right that a massive amount of money is available for research for this and that, but then you see people who are not receiving the best treatment, and that’s very hurtful. I cannot really live with that.

Furthermore, even when it came to research, some of my colleagues were upset because they had a huge grant to study a certain subset of patients with cardio-vascular disease and diabetes. But they could not reach the target population because they were not insured. It doesn't make sense, doesn't make sense at all. You want to study something and the individuals you want to study you can't reach. So I think the NHS with its failings remains a model for the world to try to emulate – and certainly try and improve, because nobody is perfect and no system is perfect. It's very easy to criticise, and say 'I can do better', but it's a unifying force. It is ethically and morally the best you can live with. It is the best for the doctor/patient relationship – and I've witnessed that as well. It's very important for the patient to identify with his or her doctor and equally it's very important for the doctor to identify with patients. If the patients think it's a commodity you can buy, something major has been lost, not only for the patient but for the doctor. So I think these are some of the reasons why I am enthusiastic about the NHS.

JW: I come from Canada, which has – or at least had when I was growing up – a healthcare system that is the envy of many countries. But in Canada the system is facing many of the same pressures and criticisms as the NHS.

MY: Yes, but criticism can be of different types. Some is destructive and some is constructive. We learn that in science because we send a paper to a journal to be criticised. Some of it – most of it – is constructive. Initially we're cross, but then we think 'thank you – I can improve things'.

Professor Sir Magdi Yacoub FRS has established the largest heart and lung transplantation programme in the world and developed numerous original operations for complex heart conditions. He is Professor of Cardiothoracic Surgery at Imperial College, London and founder of The Magdi Yacoub Institute and the Chain of Hope charity.

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Acknowledgements

Sincere thanks to those below and countless others who have made this project possible.

To all the contributors to this book, and to Tessa Fallows, Jo Thomas, Tim Wainwright and John Wynne for their substantial editorial advice and assistance.

To Jackie Burbidge, Dr Chris Bowles, Dr Martin Carby, Nicky Crouchen, Peter Doyle, Julie Hall, Claire Hallas, Sandra Harrison, Lin Lord, Ana Paz, Sherrie Panther, Jason Simons, Julie Wilcock, Gerald Williams, and everyone in the department of transplantation at Harefield Hospital for working with us so readily and supportively.

To the arts committee at Royal Brompton & Harefield NHS Trust, particularly Jo Thomas for her support and guidance, and the Management Committee, Trust Board and Corporate Trustees of Royal Brompton & Harefield NHS Trust for their faith in rb&hArts.

To Lee Milne and Karen Taylor at Arts Council England, for helping to make an ambitious project possible, and to Dolores Iorizzo and Jem Finer for their invaluable mentoring during the residency.

To our exhibition committee: Michael Fuller, Jill Gore, Julie Paine and Jenny Walton, for everything they have done.

To Nora Brown, John Cleur, Professor Duncan Geddes, Lucy Harris, Denise Hawrysio, Nick Hunt, Philip Kilner, Chris Letcher, Nina Lillie, J Maizlish, David Potter, Steve Syer, Claire Staunton, Lucy Underhill and David Walker, for their support and advice.

And most importantly, thank you to all the people who took part in *Transplant* – staff, patients, families and friends – all of whom gave so very generously of their time and thoughts. It has been a privilege to work with you and hear your stories. We hope we have done them justice.

Lisa Bayfield, Len Baxter, Janette Berry, Cathy Bindoff, Dr Emma Birks, David & Sarah Botting, Steve Bourne, John Burrows, Katherine Dalziel, Peter Dickel, Alan Doswell, Maureen Dover, Phillip and Victoria Dunne, Jill and Peter Edwards, Jane Everitt, Peter Field, Professor Duncan Geddes, Gus Guthrie, Jonathan Hamilton, Carole Harrowing, Simon Hope, Richard Jackson, Sanjay Joshi, Dr Asghar Khagani, Justine Laymond, John Lillie, Brian Lindsay, Robert Linton, Angie Lockwood, Robert Longrigg, Jennifer Anne Mattick, Kevin Mattick, Sheila McElhone, Anthony Mills, Maureen Peglar, Ann Percival, Brian Phelan, Louise Quinn, Antony Robinson, JFP Shaw-Mackie, Jason Simons, Henry Smith, Michael Spink, Steve & Christine Syer, James Crispin Tottle, Garry Westpfel, Gillian Williams, Peter Williams, Ian ‘Geordie’ Wood, Professor Sir Magdi Yacoub, and further anonymous participants.

This book is dedicated to the memories of John Lillie, Kevin Mattick, Brian Phelan and Lorraine Ward.

Transplant has been generously funded by Arts Council England, The Derek Butler Trust, Harefield Hospital Charitable Fund, Transplant & VAD Services Charitable Funds at Royal Brompton & Harefield NHS Trust, Re-Beat, the John Lewis Partnership, To Transplant and Beyond, and further anonymous donations to rb&hArts.

Additional in-kind support has been provided by CRiSAP (Creative Research in Sound Arts Practice) and The University of the Arts London (London College of Communication), Royal Brompton & Harefield NHS Trust, Amina Technologies Ltd, Metro Imaging, Objective Image, Learning at Tate Modern.

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Published by
rb&hArts, Royal Brompton & Harefield NHS Trust,
Sydney Street, London SW3 6NP

ISBN: 978-0-9560180-0-7

www.thetransplantlog.com

Designed by Fraser Muggeridge studio
DVD mastered by VET, London


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