Parallel Practices is a pilot initiative from the Crafts Council and the Cultural Institute at King's that brings together makers with scientific academics. Teleri Lloyd-Jones visits four intriguing residencies

HOW THE OTHER HALF LIVE

Mender making the kindest cut

Celia Pym and Richard Wingate

The first time I visited Celia Pym to hear about *Parallel Practices* she greeted me with a big smile and an ominous question: 'How squeamish are you?' Pym, a textile artist, had been working in the Dissecting Room and today was 'brain day', when students delicately remove the brains from the bodies that they've been learning from all term.

Pym's project was a traditional take on a residency, with her making a home in the room known as the DR, as daily routines continued around her. She set up a table. Students and staff brought her items of clothing to repair and return. She sat with her colourful balls of thread, near where the students exchange their jackets and bags for white coats, scrub up and ready themselves for what they're about to see. She could watch and hear the dissections as she darned.

Pym is no stranger to medical surroundings, having completed her post-graduate diploma in adult nursing in 2013. Indeed, several family members have donated their bodies to science, making her placement perhaps more poignant. But she was an alien in the room, and that was part of the story, she says, it was, 'the time the mender came to the Dissecting Room'.

She has been interested in mending since 2007 so this project was a continuation for her. 'What has struck me about mending is that it's so real. I love the way mending looks; the darn. You tend to a small bit and holes get bigger because you have introduced a material that's going to pull differently. Then there's another hole to attend to. I love paying attention to these small things, they look like spots of care,' she says.

It isn't a stretch to see the activities of the DR as a craft of care, except where Pym repairs, the dissection unpicks and reveals. One of the aspects of Pym's practice is to talk to those giving donations to collect the stories of the garments. They are stories of loss, life and guilt with the objects betraying the secrets of the bodies that have worn them. Points of pressure at the elbows, collars that are holding weight, they offer signs of wear and life. One of the students told Pym that she pieces together the signs of wear on the body she's dissecting, like clues and evidence; she puts the story of the person together.

Pym's residency partner is Richard Wingate, the principal investigator at the MRC Centre for Developmental Neurobiology. 'The personal is never discussed in the DR,' he says. 'People are disturbed when they find something personal like a tattoo, but this is a format in which you can discuss wear and patterns of use in a non-challenging way.'

Wingate has just completed research into the emotional impact of the DR's teaching. 'It started off material-focused; this is about stuff. What is the impact of this real stuff?' he says. 'Why don't we just use models? The impact of the reality proved to be so enormous compared to a model and so poorly understood.'

Rather than asking the students how they felt, he wondered if an arts residency might open up the subject obliquely. He refers to the DR as 'a threshold to professionalism' for these students, and Pym, as alien, offered them a moment's pause.

At the start, Pym thought she had made a kind of creative contract: she would repair clothes and in turn, would take what she was seeing and feeling back to her studio to make new work. She quickly realised the importance of being present, of making as many real interventions as possible.

To outsiders, the DR might at first seem inhuman with its cold surfaces and preserved tissues but for Pym it was full of attention and care. 'It's one of the kindest places I've worked,' she says. All traces of her have now been removed, but soon there will be a group photograph on the wall of some of her participants with their garments, all dressed in lab coats, to remind them of the time the mender came to the Dissecting Room.

Left: *Mending and Anatomy: I've got holes on the heels of my socks, on the fingertips of my gloves, on my elbows, on my knees, at the folds and seams of my jeans, where my backpack rubs against my shoulder*, Celia Pym, 2015
Opposite: *Darns*, Celia Pym, 2015

PHOTO: MICHELE PANZERI AND CELIA PYM

Skeleton key to what lies beneath

Tamsin van Essen and Richard Wingate

For those who know her work, Tamsin van Essen may seem a natural fit for a residency within medical research. Her vessels have been inspired by osteoporosis and cancer, after all. But as we stand at the table of her *Parallel Practices* work, there isn't a vessel, or a disease for that matter, in sight.

Van Essen also found her residency partner in Richard Wingate. They wanted to consider anatomy studies as a series of transformations. If an artist approached medical research as material metamorphosis what would happen? 'We never had a path,' explains Wingate. 'It was a series of processes. That's what's nice about the project: it mirrored the theme. We're interested in how shapes are formed by the interaction of tissues.' He gestures to van Essen's work: 'All the shapes here have been generated by forces which are growing and changing. We've done the same with the project in a sense, we've watched it grow.'

One of Wingate's priorities was to make use of the Museum of Life Sciences, a collection of zoological specimens housed in a hushed, wood-lined room. Surrounded by skeletons and taxidermy, van Essen was an experimental addition. She had to carry water into the museum when she was working in clay and her experiments remained on her table at all times for passers-by to engage with.

Van Essen used her access to see and to learn as much as she could of the materials and processes in the university building. The ceramist spent time in the museum and in the labs, watching highly technical processes such as staining cells in mouse foetuses that indicate where cartilage turns to bone. She began to see everything as an act of revelation, showing what lies beneath and she set about experimenting with visual metaphors: 'How can you represent these ideas but not in a direct representation? This is about the idea of your anatomy, of being an act of revealing the hidden. How can you represent that in a conversation piece?' she says.

One piece combines an earthenware web wrapped with Parian porcelain. After firing, the porcelain looks like a shrinking skin, the two clays sitting awkwardly together; under light, the internal structure of the earthenware becomes clear.

One of the most dramatic pieces is made in bone china; van Essen added calcium carbonate to the clay thinking about the process of bone calcification. She fired the piece at home and returned it to her growing table of work. Then, one day, she found it in shards and pieces nestled safely under a bell jar.

MOUSE PHOTO: JAY DACEY

'I particularly like this,' Wingate points to the bell jar: 'it expresses everything that's going on here at King's. Even when you've made something beautiful there's a fight to preserve it. We're fighting all the time against the forces that are trying to destroy things... It's probably a cautionary tale that we all learn and we would be less anxious if we embraced it.'

For van Essen, material volatility is an inherent part of her ceramic practice but it is also part of the story of the specimens of the museum. Some of the preserving liquids are so volatile that one containing a fish is rumoured to have taken two fingers off a conservator.

The work van Essen has made has a surprising domestic association. Rather than sequestering calcium carbonate from bone experiments, she ground up eggshells and added the powder to the clay. And she created a delicate capillary-like sculpture using a loaf of bread as a mould, a perfect reminder of the unexpected connections a maker can form: in this case between the cutting-edge research lab and her kitchen cupboards.

The experience of *Parallel Practices* is, in part, driving Wingate to re-invent a biology degree. Bringing ceramists and textile artists into medical education is a subtle provocation. 'You have to agitate in a subtle way in universities. You can't go clomping through but you have to set an example and see if other people pick it up,' he says.

'When I open a door now, it's a different experience... Tensions and forces are in my head'

LES BICKNELL

Opposite: Tamsin van Essen in the Museum of Life Sciences, King's College London, 2015
Below: Alizarin red/alcian blue mouse skeletal preparation
Above and below: work in progress, Les Bicknell, Naomi Mcintosh and Thrishantha Nanayakkara, 2015

The odd shape of collaboration

Les Bicknell, Naomi Mcintosh and Thrishantha Nanayakkara

'There was one guy trying to map every atom in the room,' says book artist Les Bicknell. 'Another guy spoke for 30 seconds and I have no idea what he said.' He's describing the initial *Parallel Practices* meeting at which academics and makers presented their practices to each other in the hope of sparking a mutual interest. It was pressured enough but Bicknell realised with horror that all the other makers had brought some work to show and he was empty-handed. So he picked up an A4 piece of paper and, as he introduced himself, he made a book.

Thrishantha Nanayakkara, an academic with the snappy title of principal investigator of the Laboratory for Morphological Computation and Learning, at King's, proposed that Bicknell and jeweller Naomi Mcintosh think about changeable forms, movement, the body and the world of soft robotics. They began without a defined aim, but committed to experimentation. Nanayakkara says: 'Usually I start with a very sharp question. Here there was no question. The question was "what will happen if we work together?"'

So how to begin without a question to answer? The trio devised a language to help mark out their territory. The vocabulary focused on ideas of reform and deform, objects that have a material memory, that can change shape and return back to their original: the words were physical like 'squeeze' or 'wobble'. With these words and forms in mind, Bicknell and Mcintosh began to create models, hundreds of pieces that expressed a sense of transformation. There was only one rule: they must work in the unknown. 'Myself and Naomi set out to *not* know.' Bicknell explains: 'If we made something that we understood, or looks like it was from our practice, like a book or a piece of jewellery, we just did the exact opposite.'

Living in different parts of the country, the group posted models, and held meetings on Skype and over the phone. For the precious time when all three were in a room together Bicknell and Mcintosh would sit and talk through the work they'd made while Nanayakkara and his PhD students would take inspiration and interject with practical applications. 'I learned a lot about inter-disciplinary collaboration – a real openness and generosity. At first, I thought we should be doing something and then I realised that the value of the project was to be talking about our work,' says Mcintosh.

Bicknell makes sense of the models and shapes by calling them 'tools for the imagination... because we went so far into not-knowing, I don't know what the objects are for.'

While Bicknell and Mcintosh are still working their way through the products of the collaboration, figuring out which ideas to pursue in their solo practices, Nanayakkara is using the skills and methodology he learnt from the two makers, to create the propeller for a wind-powered, hill-climbing robot built to do weeding. He turned to paper to figure out an initial design and created a propeller that turns, collapses and opens according to the wind, maximising its efficiency.

The residency has been an unusual experience for Nanayakkara. This way of working has had an impact he confesses he never expected. 'Usually in science it's a linear way of thinking,' he says. But 'there's a subset of what we do as engineers and scientists that is better understood by doing and feeling. That is where we have a big intersection with artists.'

It is too soon to see the impact of this collaboration on the practices of all three, but as Bicknell explains, changes are happening on a deeper level: 'When I open a door now, it's a different experience to when I used to open a door... Tensions and forces are in my head. I've been given, or I've taken, new ways of thinking about making.' You can't ask more than that.

‘It’s made me think that it’s about the right tool for the job. Sometimes the machine isn’t best’

KARINA THOMPSON

Opposite: Experimental electromyography band prototypes and sensor test samples
Below: Digital embroidered sample using conductive thread
Above: Circuit board connected to embroidered electromyography sensors

ELECTROMYOGRAHY PHOTOS: ADRIAN STEADMAN | THREAD PHOTO: KARINA THOMPSON

Post-industrial revelations

Karina Thompson and Matthew Howard

Karina Thompson approached *Parallel Practices* expecting to find some good data. Data is often part of the story her textiles tell. Her installation at *Cloth & Memory*, Salts Mill, Yorkshire, in 2013 included a digitally embroidered representation of her own heartbeat. She likes to work big; that piece was 100 metres long. But in the basement of King’s she’s working with academic Matthew Howard, not on a visual representation of data, rather a tool for capturing data and now everything is a matter of millimetres.

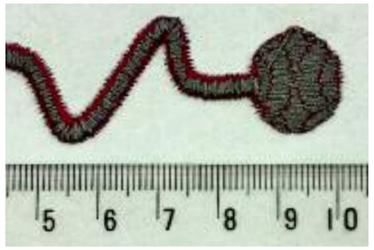
Thompson is working with Howard, lecturer in robotics at the Department of Informatics, and his PhD students, to embed sensors seamlessly within textiles. One project stitches flexible circuit boards into fabric, using conductive threads which pick up the electrical impulses given off when a muscle contracts. The tool could map body movement enabling the wearer to control a tele-operated robot mirroring the movements of the wearer.

Another project focuses on using sensors in clothing to chart the location and acceleration of the body, a bit like motion-capture but without all the cameras. Possible applications include monitoring the elderly who live alone – the clothing could recognise a fall and raise an alert. When I visit there is a PhD student whose arm is strapped with a few sensors and as he moves it, the robot arm on the table in front moves also. It’s a little inelegant: the robot arm jerkily copying the smooth human movement. The students mutter about interference, but the potential is undeniable.

The technical nature of the collaboration makes this different to the other *Parallel Practices*. ‘When I’m generating work, I experiment and then decide if it’s successful. That tends to be an aesthetic decision. With this, it works or it doesn’t. It’s more exact, the decision-making is crueller,’ Thompson explains. ‘Yes,’ Howard agrees, ‘the physical world doesn’t let you decide.’

The process has meant Thompson and Howard problem-solving at each stage, Howard making a bespoke printed circuit board that’s flexible enough to sit comfortably on the fabric, Thompson experimenting with conductive threads, types of stitches and the level of accuracy that produces a working circuit.

Thompson brought with her, not only the technical knowledge but also a material understanding.



‘Essentially, what happens with Karina, is that she comes along with a bag of tricks and says, “here’s some puffy foam”,’ Howard explains as he shows me how poppers, hook and eye catches, puffy foam and other haberdasher’s stock became part of this robotics project.

Though Thompson uses digital embroidery in much of her work (she is a beta tester for Pfaff digital sewing machines) she now finds that when she needs to be accurate to the millimetre she does it by hand. ‘I work in metres, so doing four connections in 9mm was a very radical rethink about how I work,’ she says.

The project has also had the textile artist considering working on an 80 year-old Singer, so as to use a thicker needle to get through the metal of the circuit board. While Thompson is involved in the most technical of collaborative projects, the experience has challenged her perception of the machine. ‘I love the quality of digital embroidery, playing around with bigger and fancier machines. It’s made me think that it’s about the right tool for the job. Sometimes the machine isn’t best. Even though we’re in a room filled with machines and to some extent it’s what both Matthew and I are into.’

The duo is keen to push forward, refining the sensors and continuing to explore the opportunities that textiles and robotics can bring to each other. Towards the close of our conversation I ask how the experience has influenced her artistic practice and she replies quickly and with a smile: ‘This *is* my artistic practice.’

www.craftscouncil.org.uk/parallel-practices