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Christine Borland / Edinburgh Seven (TITLE tbc)

In 2019 Christine Borland, one of Scotland's leading contemporary artists, was commissioned to make new work in partnership with Dovecot Tapestry Studios.

Their collaboration was to celebrate and commemorate the Edinburgh Seven, seven students at the University of Edinburgh who in 1869 were the first women allowed to enter university to study medicine in the UK. The artist could never have predicted that she would end up working in the middle of the Covid-19 pandemic and how that experience would fundamentally alter the way she works. There is, therefore, a deep irony at the heart of the finished works that invites us to reflect as much on the Edinburgh Seven as on our all too recently shared yet deeply personal experiences of a prolonged world-wide crisis.

Borland's work has often reflected the materials and methods of the different fibre-related industries embedded in Scotland's landscapes. *The Daughters of Decayed Tradesmen* installation at New Calton Burial Ground in Edinburgh in 2013, made with Brody Condon, saw hundreds of Jacquard loom punch cards – invented in the 18th century to translate complex patterns into luxurious fabrics – threaded together and suspended to drop down through the three storeys of a derelict watchtower. Although the punch cards looked like fabric patterns, they were in fact the stories, converted into computer binary code, of two of the last 'daughters of decayed tradesmen', children of artisans who were taught at the Trades Maiden Hospital in Edinburgh which opened in 1704 and closed in 1971.

In 2019 Borland sowed flax seed at home to experience every part of the process of flax growing and linen production. This resulted in a number of projects, including *In Relation to Linum*, an exhibition at the Royal Botanical Garden, Edinburgh in 2021. She planted flax at the Botanical Garden, returning to the earliest list of plants of what was once the Edinburgh Physic Garden, a list which in 1670 included flax. The Physic Garden was designed to supply plant medicines for the new Edinburgh University Medical School.

Borland has often combined the fragility of human existence, the hope of history and the deep, often overlooked, insights of materials in her work. In 2018, at Mount Stuart on the Isle of Bute, in *to The Power of Twelve* Borland commemorated and reflected on the repurposing of the Marquess of Bute's mansion as a naval hospital during the First World War. She used many different materials to explore hurt and healing, including delicate hand-blown glass spheres, forms woven with thread made of nettle fibres (an important alternative to cotton in Germany), and sphagnum moss, which was long used to cleanse and protect wounds.

So, when it came to the Edinburgh Seven collaboration, the combination of history, methods and materials must have seemed relatively familiar. That is until March 2020, when the world started to close down.

The Edinburgh Seven

In 1869 seven female undergraduates were admitted to the study of medicine at the University of Edinburgh. They were the first women allowed to formally enter university

education of any kind at a UK university. Sophia Jex-Blake had been told that, although she was permitted to study, the medical school could not make the necessary arrangements for just one woman, a problem she resolved by recruiting other women. Some of the group went on to achieve the highest scores in the matriculation exam and to win competitive scholarship funding as a result but they never received it: it was given to lower-scoring men as a result of the resentment the women's presence created.

Although the women were all listed by the General Medical Council as medical students for 1869–1870, the city Court of Session ruled that they should not have been admitted in the first place, and, in the end, they were not allowed to graduate. On 18 November 1870, when the women attended an anatomy exam at Surgeons' Hall, they were met by a large crowd who threw rubbish and mud at them. As a result, male students shocked at their treatment started to act as their informal body guards. Their efforts led to the UK Medical Act of 1876, which allowed women to practise as doctors. It did not, however, insist on their recognition in the education system. Five of the original seven eventually gained their formal qualifications on the continent, at Bern and Paris, including Jex-Blake, who returned to Edinburgh in 1878 as the city's first woman doctor.

In 2015, the seven female pioneers were remembered in a plaque at Surgeons' Hall. One hundred and fifty years after their matriculation, in 2019, the University of Edinburgh awarded their medical degrees posthumously. The seven medical students who accepted the degrees on their behalf are represented in the photograph by Laurence Winram, unveiled in September 2020, which updates Rembrandt's 1632 painting, the *Anatomy Lesson of Dr Nicolaes Tulp*.

But the medical education encountered by the Edinburgh Seven was not as we might expect today. The students studied botany at Inverleith House, the home of the Edinburgh Botanical Garden, as well as anatomy. One of their most influential supporters was John Hutton Balfour, Dean of the Faculty of Medicine. He was also Regius Professor at the Botanic, from 1845 until his death in 1884, a dual role that emphasises the proximity of plants and people.

A core part of medical training took place at the gardens, where the cell structures of plants were examined using microscopes, 'a most important instrument in education', as Hutton Balfour, a particularly gifted and passionate teacher, put it. At least two of the seven women attended his classes in the summer of 1870, which is why, in August of that year, Jex-Blake and her sister were briefly lost on a botanical fieldtrip to Ben Lawers in the Scottish Highlands.

It is therefore in microscopy that Borland found important inspiration for her work. Using the important historic archive and collection at Edinburgh Botanic, she researched the objects the Edinburgh Seven might have studied, a process almost scuppered by the pandemic but salvaged by the availability of resources online. These included a collection of beautiful engravings of microscopy diagrams and early glass slides of plant specimens that were often stained with textile dyes to clarify their details. One, the cross section of a fern, particularly caught her eye.

Cells and CGI

Taking a story back into history and even prehistory, and then projecting it forward to consider its contemporary relevance, is a common theme in Borland's creations. As a result, ancient materials and crafts are as familiar in her work as computer coding and 3D printing. The Edinburgh Seven tapestry project forced this relationship in new and unexpected directions. While her initial impetus was to postpone, the project had to progress to keep the weavers at Dovecot working. Suddenly, Borland had to shift her natural approach, which usually starts with how objects and histories speak to people.

An important inspiration for the finished works was cloth – its practical, material and even symbolic properties. Cloths wrap, wipe, frame, protect, hide, decorate and define, as can be seen in many Renaissance paintings. It certainly would be a mistake to associate the Edinburgh Seven with cloths as mere bandages and blankets. Rather, Borland is tapping into some of the most ancient associations between women and healing, and the very creation of life itself. In Norse mythology, the Norns are the weavers of fate, sitting at the base of the great tree that represents the world, Yggdrasil. In Ancient Greece, Arachne was a proud weaver who challenged Athena, goddess of wisdom as well as weaving, and was turned into a spider for her hubris. Zhi Nu is the ancient Chinese goddess of weaving (and knitting), identified with the star Vega, one of the brightest in the sky. These are weaver goddesses weaving the heaven's celestial canopies which wrap the world itself.

Motion capture was originally designed to support medical research on movement and gait analysis, although it is now more closely associated with big budget cinema and video games. Borland wanted to return to those medical origins to capture motion. Dressed in a tight-fitting suit marked with sensors that enabled computer analysis, she tracked her movements with sweeping cloths to uncover their hidden or overlooked uses. Some of her actions explored medical and others domestic references, such as holding, folding, cleaning, wrapping, hanging, and playing with cloth to isolate its movements. She made seven computer generated imagery (CGI) films of different movements, one for each of the seven Edinburgh students. To avoid the temptation of being too literal, by identifying specific cloth purposes with certain individuals, the number was changed to three, or a trinity of works.

But while the motion-capture suit tracked the movements of the body in the videos, the cloth was absent. Working online, remotely in partnership with a computer animation expert, the cloth had to be reinserted digitally. The films were paused to find frames that represented stilled moments in choreography, inviting the viewer to fill in what comes immediately before and immediately after, like a line in a longer dialogue. This lends the work a restless spirit, of potential being caught and even trapped, like the seven aspiring medical doctors whose gender was very nearly used to impede their gifts.

Passing through the digital wireframe model, the structures were then mounted with the patterning and colours Borland derived from the botanical cell-structure drawings and slides, building them up slowly and carefully in layers. The end results fashioned dancing cloths that are animated, independent of, and yet dependent on, the body.

Weaving process

The designs were produced as two-dimensional digital prints that were passed over to the Dovecot tapestry weavers, led by Master Weaver Naomi Robertson, who in turn had to develop complex processes to interpret them.

Weaving necessarily produces a two-dimensional artefact as a result of the foundational relationship of the warp and the weft. The designs are as much about absence as presence, so the weavers had to incorporate holes in the finished works. But holes are precisely what weavers strive to avoid, as each shape must attach to the next to create a single work. Normal materials are wool, cotton or linen. The transparent sections use nylon fishing line to communicate the 'blank' or black areas in Borland's designs. The outlines of the shapes were held during the weaving process in a negative ivory frame which was then cut away once the tapestries came off the loom.

Through shading and pattern, the tapestries on the loom soon had a vivid, three-dimensional quality about them that reflected Borland's processes. The depth and subtlety as well as drama of the colour transitions are created through rich combinations of threads, most of them invisible at a distance. Cool turquoise areas turn out on inspection to combine grey, pink, magenta and pale blue strands, while black is shot with carmine to deepen it. In places the textures are further differentiated through weaving over a double warp.

Originally intended to be displayed flat, it was subsequently decided that the tapestries would be sculpted and manipulated into the 3D forms their finished shapes now suggest. This aptly reflects the circularity of Borland's process, embedded in the tapestries and their public unveiling, first of all at the Victoria and Albert Museum in London, from March until May 2024, before returning to Edinburgh and the old Royal Infirmary building, now the University of Edinburgh Futures Institute, from June 2024.

As Andrew Patrizio wrote of the 'circumstantial poetics' of Borland's World War I work at Glasgow Museums in 2018, *I Say Nothing*, 'often we need the backstory, where human agents, objects and high emotions are bound into a complex bundle that Borland seeks to unpick'. The visceral beauty of the Edinburgh Seven tapestries speaks to the formal and informal processes that the seven women pioneers experienced and challenged at Edinburgh University and in the medical establishment. Christine Borland and Dovecot Tapestry studios have been on a long journey to create works that speak to the unfathomable experience of both a global pandemic and the fragility of human endeavour.