THE BERTHA REVOLUTION

Sarah Baird

Bertha, a custom-made mannequin from my Honours work, "The Custom Mannequin Project" (2014), informs my Master's project, "The Bertha Revolution" (Figure 1). Bertha is solid, strong and pissed off. The Bertha mannequin was constructed from the body parts of eight different women. Always nude, she has nothing to hide. She's got a toned leg and a flabby leg. One of her arms is shorter than the other. She's not a body type that exists, but people still identify with her. The project begins with the manifesto:

The Bertha Revolution Manifesto

I am sick of your shit

Post-feminism is a lie constructed to keep us complacent

Inaction never favours the oppressed

We will never be silenced.

Figure 1. Sarah Baird, *Bertha Mannequin*, 2014.

The manifesto is presented as five 260cm-tall drawings which were created using one of two wall-mounted drawing machines built for the project. It outlines the demands Bertha has for the revolution "she has started." The 300 34cm-high slip-cast ceramic Bertha figures serve as a permanent, passionate 'supporting audience' for 300 A2 posters and the manifesto drawings. The manifesto is a way of framing the content of the posters and indirectly informs the slip-cast figures. The posters draw attention to the sexist, misogynistic and offensive interactions that myself and others encounter every day. Input for the posters was sought by talking to other people on social media, an important factor in ensuring that a range of voices was included. The common thread within each poster is that everything detailed there has happened to someone (including myself). The progress of the project has been regularly posted to social media channels using #BerthaRevolution.

The drawing machines were devised as a method of realising my drawings without involving a third party or commercial printer. The machines are entirely open source; all the code and plans are freely available online. The machines utilise Arduinos to control two stepper motors which move the belts attached to the pen. Each essentially functions as an XY plotter in a 'V' format. Arduinos are small micro-controllers that can be programmed to perform a variety of actions. A small servo motor attached to the pen-holding device lifts the pen off the page, enabling it to travel without leaving a mark. Images for the drawing machine to reproduce are created using vector-editing program Inkscape. The resulting image is sent to the Arduino for drawing via Dan Royer's Makelangelo software.[1]

My machines have an uncanny ability to create marks in the same order that I initially drew them on my computer, in effect making the machine an extension of my hand. The design of the drawing machines is such that they will never perform with total perfection, which is something I'm learning to deal with. My large machine has more slack and vibration in the timing belts which hold the pen compared to the smaller one, resulting in wobblier lines at the outer edges of the paper. If I give both machines the same image, they don't turn out quite the same (Figure 2).

Figure 2. Sarah Baird, large drawing machine in studio, 2017.

A secondary idea for this build was the notion of time-saving and multitasking. I always planned to have the machine producing images while I focused on other tasks. For me, these other tasks are working in the studio, research, working part time and the mundane domestic chores one must perform to sustain everyday life. The reality is that, firstly, the machine is mesmerising to watch. Secondly, it can't be trusted, as unforeseen things often occur. The pen runs out or a counterweight gets caught on something, straining a motor which pulls the belts out of alignment, and so on. Finally, errors in the code can result in the machine not performing as expected. As a result, I don't often get other tasks done. A 'domestic guilt' starts to set in because if I'm not spending all day in the studio or working part

time, I'm sitting in front of a computer figuring out the next drawing and supervising a machine drawing it. A great deal of unseen labour has to occur before an image is ready to be drawn.

The larger drawing machine was used to draw out the pattern pieces for a large-scale (260cm high), three-dimensional Bertha figure cut from MDF. This links the work of the drawing machines to the ceramic Bertha figures. I've accomplished this by rendering a digital three-dimensional model of the Bertha mannequin, then dividing the model into slices which were sent to the drawing machine to draw. The drawn pattern pieces were then traced onto MDF and cut out using a jigsaw. The resulting figure is a set of pieces that stack together (Figure 3).

Figure 3. Sarah Baird, *Giant Bertha* (work in progress), 2017.

Alongside the fact that I am a woman, the technology used to build and code the drawing machines led me to investigate how women are treated within technological fields. Many people's first reaction when I outline the project (and thus reveal my ability to build, wire and code such a machine) is mere shock that I have the knowledge to do it. I've fixed many technology-related issues, much to the astonishment of the owner. Not because the problem is fixed, but because they "didn't pick me as someone capable of doing it." I get the same reaction when someone learns I can service my own vehicle. What these people actually mean is that they didn't expect a woman to be capable of performing such tasks. What they fail to understand is that my gender has no bearing on my ability to perform these masculine-coded tasks. People are clearly confused when I don't perform to my gender. Yet, I receive no reaction when people learn I can sew, as that skill is socially coded to my gender.

Women are seen as technologically inferior as, under the patriarchal system, our place in still seen as 'being at home with the kids,' even when you don't have any. This still remains the case when women are in paid employment. This exclusion of women from technology dismisses the importance of technology in everyday life. As unpaid labour is also unseen, so too is the technology used, especially within the home. If domestic labour was to become paid labour, the gendered stereotype of women being technologically incompetent would begin to disappear.

The cultural coding of these acts as belonging to either women or men is inherently damaging and does not allow for someone to discover their own identity freely. Judith Butler dismisses the notion that people should perform acts coded to their gender, which in turn should match their sex.[2] This is why I prefer the term 'men-gendered' over 'male-gendered,' as male denotes a sex, not a gender.

Butler's gender theory further reinforces Judy Wajcman's argument that technology is gendered 'man' by default. In a patriarchal society, your relationship to technology depends on your gender. Wajcman states that "[m]achines are extensions of male power and signal men's control of the environment."[3] Their masculinity and their identity depends on their ability to use and fix machines. Women's use of machines isn't seen as an identifier of their identity. Men use tools, women use utensils. The skill level involved between using tools and utensils is no different – except that generally it's assumed that women rely on men or tradespeople to repair them,[4] thus putting men in control of the tools/utensils/machinery complex.

I encounter this man-centred technological control in my current workplace. Women operate many of the machines, yet (in most cases) it's the men that are responsible for their maintenance and repair. A company representative for a machine in my department was genuinely surprised that a group of women are responsible for its maintenance and repair. When asked how we knew what to do, I replied, "with common sense and the instruction manual that you provided with the machine." The machine is located and used within the sewing department, an area always staffed by women. Of course, the people in the department have the knowledge and skill required to sew, but to be responsible for maintenance and some repair work seemed too far-fetched for that particular sales representative.

Figure 4. Sarah Baird, Berthas and posters, test installation photograph, 2016.

My perceived incompetence (on account of my gender) to maintain and repair equipment that I'm well versed in operating was another factor in my decision to build the drawing machines, rather than having an outside party print my images. It ensures that I control as much of the processes involved as possible. I am solely responsible for the operation and repair of the machine. The mere fact that I am capable of building, wiring and editing code for the drawing machine puts me in a position of wonderment among some people.

The figures of "The Bertha Revolution" are an array of 34cm-high ceramic Berthas modelled on the Bertha mannequin. A master plaster mould was taken from the initial clay sculpt, from which wax positives were poured. Thirteen plaster moulds were made from the waxes in order to expand the number of figures rapidly. They were slip-cast using red clay, bisque-fired and spray-painted using an acrylic semi-gloss. Glazing was not an option, as the higher temperature required for the glaze firing results in the figures collapsing at the ankles. Painting the figures in five different colours makes the group appear larger, compared to using a single colour. As a way of visually linking the posters to both the MDF and ceramic figures, the paint colours were matched to the colour of the sugar paper used for some of the posters (Figure 4).

During the exhibition, audience members will be neither the tallest or shortest figure in the room. When looking down at the ceramic Berthas, the giant Bertha will be towering over them. By using these two extremes of scales, I hope that the audience will be encompassed within the work and feel that 'Bertha' is always watching them. The figures will be displayed in such a way that the audience can walk and stop among them, putting themselves into the group. It is my hope that as visitors read the posters on the wall while standing among the Berthas, they will be compelled to become a part of the Bertha Revolution.

The figures were poured on a strict schedule of three evenings a week, then removed from the mould or 'birthed' the following morning, four or five at a time. Any more than this would lead to the figures becoming too dry in their moulds, resulting in limbs detaching. I prioritised certain details, chiefly their ability to stand and the position of their 'righteous fist' (the right fist), over speed.

Whether it's her angry, righteous fist, passionate commitment to feminism, her rotund belly or fat ankles, Bertha is a figure everyone seems to relate to. This sentiment was also voiced in my past projects – people often felt validated by seeing a mannequin possessing features that they could identify with. My project expresses a personal account of global problems from the viewpoint of myself and others around me. It emphasises that there are still fights to be won and that feminism is never going to be over.

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1 "The Makelangelo Art Robot", http://www.makelangelo.com (accessed 4 July 2016).

2 Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (New York: Routledge, 1999).

3 Judy Wajcman, *Feminism Confronts Technology* (Cambridge: Polity Press, 1991), 89.

4 Ibid.