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Artist at Sea: Codes and Cargo

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The themes of land, labor and the port resonate for me and particularly in recent voyage experiences and digital weaving research, which I will attempt to bring together in this talk. These activities converge in new and evolving artwork, generating more questions than answers on the relationships between digital and analog materiality.

Trades routes, and the movement of people and goods through ports, notions of networks, flow, circulation, has parallels and resonance with our contemporary digital systems and also, correlations with political issues, namely power and control. The Container Shipping world is fascinating to drop in on, a world so common it often is overlooked, invisible to us, until something goes wrong. That is my relationship to digital technology – I love the advantages, and until recently, had not thought about the implications, control of global communication systems and capital. The shipping world is a very physical network yet usually invisible and that is how I see our everyday computer realities. My research project asks the question: **What is the impact when the familiar or implied, the temporal or usually invisible, is translated into material form?**

In January 2015, I arrived in New Zealand as a passenger aboard the MV Spirit of Singapore container ship, 25 days after departing from Charleston, South Carolina. Drawing on this experience and making connections with parallel studio research into digital jacquard weaving
this paper addresses material translations of the digitally implicit which my research project Material Codes: Ephemeral Traces questions. Invisible digital systems surround us, at sea and on land, in the tools we depend on and like to use. What do we notice when this is materialized?

Choosing to journey to New Zealand by container ship is not an obvious route in our modern era, yet it was an opportunity to see the oceans flow by and gain direct insights into how 90% of our global goods are moved around the planet. Shipping containers or ‘boxes’ have become ubiquitous, travelling our roads, rails, ports and open seas. Vast numbers of containers are moved around the globe 24/7, the ship loading and unloading hundreds of these in a few hours turnaround in port. The workers are largely invisible.

We seldom think about their contents or the information networks that enable these large objects containing cargo to move. A revolution in shipping started in 1956 with the first standardized containers that could be packed, loaded complete, shipped, then trucked directly to their destination. The rise of container shipping also reflects the fall in textile weaving mills in North American and other western countries as moving raw materials and goods became cheaper than maintaining local industries. During my voyage, I observed, photographed, drew and wrote my own form of logbook, or blog, published once the Internet was accessible again.

On the bridge of the ship, the routine is very structured with automated systems, such as GPS positioning, radar screens, depth sounders, and a myriad of other equipment. This is contrasted by the hourly manual recording in the logbook of position, changes in weather with the navigator updating position and planned route on printed charts, a comforting analog checking for me. Scale and perspective took on a new meaning. Global Shipping (2015) is a jacquard weaving translation of global shipping routes, color-coded by the frequency and number of ships on particular routes. Not surprisingly, the north Atlantic, Europe and north Pacific routes to Asia are dominant.

Kelly Thompson Global Shipping (2015) Hand-woven digital jacquard, cotton. 18.5 " x 35" Photo Credit: Michel Dubreuil
Radar as a technology is also central, and visually fascinating to watch, capturing other ship positions, but also cloud banks on the horizon through radio signals sent out and bouncing back. Dense clouds or high seas provided enough solid matter for the radar waves to bounce back to the ship. Thinking about digital traces of this invisible data fascinates me. I wonder how and where this accumulates, what it might look like, and the various manipulations and translations that have occurred to appear on a lighted screen. Fortunately, in the case of ship safety, multiple checks are done, including direct human visual analysis.

It was the Bon Voyage Service 6.0 weather software amongst other screens that grabbed my attention. With twice daily satellite feeds to the onboard computer to graphically map the ships route and the air pressure, currents, height and direction of sea swell, water temperature, wind directions and speed this was regularly consulted by the captain and first officer. On board I was intrigued and comforted by physical charts and manual logbook to support the reliance on satellite communications systems. To arrive on the bridge, these files have gone through multiple processing systems, from satellites, worldwide weather tracking and observation stations, onshore computer mapping to be digitally delivered to vessels all over the oceans.

My method of translation into woven form is to take these through several other software systems to be able to materialize a particular moment and data sets into jacquard woven cloth. Designed with Pointecarré software, each color in a design needs to be translated into a series of intersections, a structure, which can then be hand woven on the digital jacquard loom. Each thread and color can represent multiple information - latitude, longitude, air pressure, shoreline, position, ship route – yet poor resolution of image suggests only a gesture, one in which understanding needs to be questioned.

As well as her defense of the poor image, Hito Steyerl has also written on orientation, perspective and a brief history of the horizon. “Our sense of spatial and temporal orientation has changed dramatically in recent years, prompted by new technologies of surveillance, tracking and targeting. One of the symptoms of this transformation is the growing importance of aerial views: overviews, Google Map views, satellite views.” I would also add the accumulated data that calculates and predicts the weather conditions for land and sea, shifts our spatial and temporal perspective.
Although most modern navigating activity occurs through various interfaces, when in the middle of the Pacific Ocean I felt the power of the horizon, the observation of sky, cloud movement, wave and wind conditions. On the bridge there was a constant scanning, observing the distance view. At night, an able seaman ‘on watch’ joined the officer on duty, tasked to peer into the night for ship lights or anything unusual. As I am currently an urban dweller, my spatial sense expanded with comparisons between the screen view and ‘real time’ actuality coming under comparison.

The horizon line, and a stable position from which to view it - on land or from a boat - was extremely important to the development of navigation and a sense of orientation. Hito Steyerl links the stable horizon with the subsequent development of linear perspective, enabling Western domination and colonization and “for redefining standards of representation, time and space”. More recently, the preponderance of aerial views, Google Maps, surveillance technologies implies a stable ground. Yet related visualization tools in the hands of artists can also multiply perspectives, enabling nonlinear or collaged views that speak to contemporary notions of disruption and disorientation or overload.
Material Codes: Ephemeral Traces

The second strand of this presentation is the research project I am directing. *Material Codes: Ephemeral Traces*, is a Québec government-funded (FRQ-SC) three-year artist research-creation project that focuses on studio practice in jacquard weaving, training and community building and participation in questions pertaining to the digital. Using methodologies of experimentation, critiques and theoretical enquiry the aim is to enquire into thematics that marry the digitally implicit with the materially expressive. The project is based at the Milieux Institute for art, culture and technology, at Concordia University, Montreal, Canada.6
One part of the project involves collecting digital data from contributors, which is then translated and woven by student research assistants. The gallery of woven submission on the website shows some of the projects. Each submission selected for weaving goes through a process of analysis, interpretation, sampling and documentation, which is recorded by the research assistants on the website, which you can visit and explore for yourselves if interested. Two of my research assistants closely involved in the project - Sophia Borowska and Geneviève Moisan - also have a poster presentation on their own jacquard research and artwork at the conference.

Each file goes through interpretation into pattern, into structures, which can be read by the loom software. This was of dancing lights from a photograph from one of the monitors on board the ship. Sophia worked with brocades to give physical form to the multiple digital elements.
Another aspect of the project is facilitating training. In the summer of 2015 our Weaving Data Research Group collectively worked on a color warp, under the mentorship of Louise Lemieux Bérubé. A color warp is a completely different way of designing, producing color and texture effects through the choice of weave structures and yarns. From this shared warp I was able to produce a six-panel sculptural piece, *Fluid Data* in which both sides of the weaving were significant.

Materializing the digital suggests a drawing attention to the power of multiple systems, and also to the potential of abuse, overload or failure of what we rely on. The imagery in *Fluid Data* consists of found and manipulated data files, layered error messages, with symbols and codes of digital tracking, maps of global undersea internet cables routes, graphs of climate data all connected through the subtle imagery of water.

Periodically data is “missing” resulting in deliberately unwoven sections, conceptual visual glitches, or shifts in the control and order of the woven structure resulting in the unexpected. I’m interested in the ‘un-readability’ of the source, the sense of patterns and complexity, familiar yet not able to be pinned down, as a metaphor for the digital sphere of today. Each side of the six jacquard fabric panels provides details and layers of translation, communication and readability. The unwoven sections are clearer from the back, deliberately planned as a two sided piece, almost like imagining the back of the computer screen, seeing data from the behind the screen.
I had the opportunity, with technical support from Sophia Borowska to re-digitize the weavings in high resolution scans, which were re-collaged into a series of 12 slides that rotated on this large high resolution digital screen at Bath Spa University, UK. Viewing work that I had closely touched at all stages – from screen collages, to physically weaving and sewing hems - the change of scale and definition of each detail was incredible to experience. Pixels are both threads and digital moments, inviting a close and distant view of content, and in this presentation mode, proximity and space added a new element.

Awareness of the power of evolving technologies in our global society, the physical and digital networks that transport people, consumer goods and information through markets is vital. Orit Halpern writing on the changing histories and understanding of visualization as a mechanism, states “the realm of the image and space of data are not in the same time” and further that “‘visualization’ invokes a specific technical and temporal condition and encourages particular practices of measurement, design and experimentation. Visualization, like the term ‘data’ looms, therefore, as a never fully defined verb/noun that straddle the actual practices of depicting and modeling the world…and the forms of attention by which users are trained to use interfaces and engage with screens.”7

The digital jacquard weaving process, like many contemporary research activities, involves information traveling through multiple systems and screens to become physical. In the way threads blend and intersect, references to diverse calculation or communication systems are possible, while also reflecting the skills and time of process, ideas that are inherent to the traditions of textiles. Textiles, like many items of material culture bear traces of the trades and movement of cargo, early items of desire and communication, and can be considered one of the earliest coded languages.
Two other ways I have been working with material codes is by learning punch-card jacquard weaving and experiencing weaving on an industrial loom. At the Lisio Foundation, in Florence during a workshop residency I worked on traditional punch-card jacquard looms, often considered the precursor to computers à la Babbich and Lovelace. I’m sure many of you have visited, and I encourage you to if not. Julie Holyoak and Eva Basile both teach there and provided me with support in English during my residency, along with the professional Italian weavers. It is a very physically engaging process. Punch-card systems enabled a faster more accurate production than earlier weaving systems I particularly enjoyed working with the velvet loom and manipulating the physical codes in the punch cards – exploring variations that were possible with the same cards. This required clambering up to the jacquard heads at times, much as one might climb a mast to untangle something in the rigging.

With one set of cards, I intentionally turned the order and placement of how the cards were read by the jacquard head to see how the text would be scrambled. My words were chosen to make the connection between the digital haptic and physical touch which velvet induces.

I am also exploring how artists can access industrial equipment, and what that brings to the work. The Textile Museum/TextielLab in the Netherlands is an amazing resource, one of the few places that enable experimental research as well as production. They require the artist/designer to be present when testing– there are so many options and decisions to be made, between the digital files, choice of yarn types, sizes and colors. This all informs the aesthetics of visually reading cloth potential.

The weaving happens very rapidly – skillful technicians are essential for working the machine or for fixing broken threads. The loom has sensors to automatically stop the machine when threads break, bringing the weaver to manually fix them. Except for these flaws, the relationship
between the digital and physical materiality is very mechanized with the human body at a remove. Compared with a traditional jacquard weaver or a digital hand jacquard loom each has its own rhythm and volume of sound that also resonates in the body.

The vastness of data and the scale of our global shipping world is something I continue to question and wonder about. Digital jacquard weaving involves information traveling through multiple systems and screens to become physical. Textiles, like many items of material culture bear traces of the trades and movement of cargo, early items of desire and communication, and continue to be one of the earliest coded languages. My aim is to follow this up and interpret ideas of big data into large-scale jacquard artworks whose materiality will surround the viewer and provoke a cognitive and kinaesthetic consideration of questions of ‘bigness’ – ‘big data’ (data so large that it becomes difficult to process through hand-held technology and through our own mental capacities), big industry, big art – and its putative trustworthiness.

My project touches on questioning assumptions about daily technologies. If data is a cultural currency, I think it is important to ask who gets access or what is out of reach and who benefits? What is traded in this currency exchange? The Open Data Institute and other groups are bringing greater attention to critical and creative interpretations, while the Snowden revelations and WikiLeaks continue to spark questions on the mass and scale of data that circulates the globe. The next part of this work is a curated exhibition at the FoFA Gallery and symposium titled *The Material Turn Project* in Montreal in March 2018.8

5 Ibid., 19.
6 http://milieux.concordia.ca/
8 http://www.materialturnproject.com/ Accessed 02/04/2017. The title of this project came out of conversations in 2013 in Australia with various colleagues. My thanks to Janis Jefferies, amongst others for exploring “turns” in various disciplines and to extremely talented research assistants WhiteFeather Hunter (co-curator), Sophia Borowska, and MJ Daines who are working on this project with me.