Polymers in Action: Socially Engaged Art and the Environment

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Recycling efforts have been propelling efforts to navigate through a littered globe, but no secure course has yet been charted... All citizens are needed on deck, but a particular place has been reserved for artists. It is at the helm. As commanders of our culture's vision, imagination, creativity and inspiration, artists can steer a 'cycle-logical' course. This logic proceeds from artists' familiarity with material processing and their mental processing.
—(Weintraub, 2007)

Introduction

The destruction of the environment is a prevalent contemporary problem that affects all forms of life on a global scale. Scientific research and general awareness are not enough to tackle this issue and often individuals are unaware of how they can act in a more environmentally conscious way. Pollution comes in various forms, but the production of waste is something we can all take more notice of. Junk, trash, garbage, refuse and rubbish are all words used in various places to describe our everyday waste. They evoke the abject—a disconnection and even repulsion from something we find uncomfortable or useless (Whiteley, 2012). The removal of waste in urban areas reflects our need for social ordering and disassociation with the detritus we produce (Crang, 2010). Out of sight, out of mind. Disassociation from trash and the belief that individuals do their part when recycling single-use plastic carries the implication that collective action is not required to change negative patterns. While plastic does not appear on the list of top pollutants, its insidious and negative impact on delicate ecosystems becomes more evident daily (Blacksmith Institute, nd). Questions remain as to the efficacy of standard campaigns that aim to change our disposal and recycling habits. Media coverage plays a part, on a macro level, in generating and sustaining awareness, but where is the positive community based action that aims to educate through creative, physical engagement with these important issues?

The environmental movement of the 1960s and 70s incorporated a number of approaches that reframed the negative impact humans were having on the environment and provoked environmental policy changes. Books, such as Rachel Carson's Silent Spring (1962), helped fuel debates and encourage change at government levels through grassroots initiatives and activism (Gibson & Reitman, 2012). Today, most people gain awareness of issues through the use of their social networks, both web based and in real life. Activism operates in the same way as it always has, but the methods of sharing information have changed. More traditional approaches such as participation in events and signing petitions continue through online interaction and is regularly practiced by environmental non-governmental organizations (NGOs) such as the 5 Gyres Institute, Plastic Pollution Coalition and Environmental Defense Canada.

Contemporary environmental art, particularly art made from plastic waste, is included in this new form of information dissemination. Some artists are introducing pedagogical hands-on clean–up approaches to communities and educational institutions. This leads to connections and growing attraction to particular projects, in-person connections and social engagement that might not have been possible otherwise. The key elements for contemporary environmental art, which need to be conveyed, are social engagement and messages of environmental stewardship and responsibility. Environmental art (often called eco-art) focuses on social engagement to foster a greater sensitivity to serious concerns when utilizing methods that involve community participation and education. The seriousness of plastic waste in the environment is being addressed in ways that incorporate eco-art educational models where the offending material is used to make useful or aesthetically pleasing objects or installations.

Socially engaged workshop models are grounded in methods and theories that are not always explicitly referenced, but serve to empower participants to alter their dis/association with the environment. These relational practices encourage a reconnection to waste materials that assist in the building of communities and encourage environmental stewardship through collaborative educational platforms such as Project Vortex University (Robson, nd). While there are similar models within Canada at present, this knowledge is localized and difficult to uncover via online platforms or scholarly research.

Polymers in Action: Socially Engaged Art and the Environment (PiA),
grapples with this disconnection through the staging of discussion sessions and waste-plastic art-making workshops and encourages sustained engagement with waste-plastic eco-art via a custom built website. By combining curatorial and activist approaches, this project allows the animation of local communities with new approaches to the ethics of consumption using adapted pedagogical models. As a result, the possibilities of curatorial practice are expanded to a broader consideration of environmental stewardship via continued workshops which are disseminated to wide audiences through the curated website.

Project Vortex artists, Gabriela Bustamante, Liina Klauss and Aurora Robson, who all employ plastic waste as their main medium and means to initiate environmental restoration art projects, provide a focus for this research. Project Vortex has been selected as a main focus because of the access the website provides to independent projects being run internationally and how it functions as an entry point to this network. These case studies are critically examined, through a discussion of the benefits and problems associated with the use of curated websites that act as both educational resources and marketing tools. By staging an adapted workshop model as an extension of these case studies, PiA activates individuals to participate in the creation of an eco-arts community at a local level. A curated website, Polymers in Action - www.polymersinaction.ca has been developed, providing visibility to these practices and situating this study within contemporary Canadian repurposed- plastic art discourse.

These methods of collecting and reframing plastic waste through art are a combination of what environmental artist, curator and co-author of Textlets on Art and Ecology, Linda Weintraub (2007) would call Activators, Philosophers and Sustainists. Activators are artists that tackle existing environmental problems that have been instigated by negative human intervention. These "clean-up crews" aim to implement positive and practical change through their activism and revitalization of degraded environments. Philosophers combine educational initiatives with environmental concerns to help bolster arguments against cultural norms that lead to harmful impacts.

Sustainists aim to adjust consumption and behavioural belief systems for the benefit of the environment (Weintraub & Schuckmann, 2007, p. 97). While these three types of environmentally conscious practices are separate enterprises within Weintraub's analysis, I argue that they are united within the practice of repurposed polymer art.

Similarly, this form of art activism provides a sustainable educational format whereby environmental issues are communicated in a highly physical way. Participants are introduced to new ways of thinking about their environment and the materials they use to produce art, possibly activating them as agents of change. The potential for wide dissemination of these ideas through similar initiatives and popular digital social networking platforms and websites such as Plastic Pollution Coalition can only lead to a greater understanding and sensitivity to the environment and to the possibilities offered by repurposing waste materials, particularly those that pose a serious threat, such as plastics (Elmore, 2015).

The Problem with Plastics in the Environment

Plastic is a relatively new material that has only been commonly used to make consumer products since the end of the Second World War. The ease of manufacturing plastic makes it an ideal material for commercially sold receptacles/containers and products. It is such an integral part of everyday human existence as an easy, cheap packaging material, that there is a reliance on its suitability and the assumed safety from contamination it appears to offer, that it is extremely difficult to imagine life without it. However, in recent years, scientists have discovered that plastics contain dangerous chemicals that can interfere with normal cell production, causing cancer, which has led to the widespread banning of BPAs in plastic baby bottles (Environmental Defence, nd). The harmful biological effects of plastics on human life is an important scientific and social issue, however, this becomes more significant when the volume of waste-plastic in the environment is taken into consideration (Barry, 2005). Most plastic does not biodegrade. Polymer strands break apart and get shorter, without ever dissolving or returning to a pre–manufactured state. For this reason (along with many others), what we do with our discarded plastic is of greater consequence when the sustained wellbeing of the environment is considered.

Although recycling initiatives are commonplace, they are labour–intensive and can be costly to initiate. Manpower is required to sort objects, the reusability of plastic depends on the state in which it arrives at the factory and cleaning and decontaminating for reuse is time-consuming and can be expensive. Repurposing plastics into new items is becoming more possible with technological advancement, but this depends heavily on the existence of recycling plants (Hopewell, Dvorak, & Kosior, 2009). Polymer strands are weakened by exposure to heat and light, so when it is melted and remoulded, the resulting product will not have the same strength and durability as a newly made one and can deteriorate quicker, meaning that recycling plastic into the same object more than once becomes unviable Even though it takes a toll on natural resources like the oil that is used to transport goods over land and sea and gas, which is a main component of plastic production, for most places it still makes more financial sense to manufacture using virgin materials rather than recycling (Hopewell, Dvorak, & Kosior, 2009).

What happens when it is not recycled? It goes to landfill. The problem with plastics in landfill sites is that they don't always stay there; in fact 80% of the plastic found in the ocean comes from in-land sources (Clean Water, nd). Due to their lightweight nature, it is possible for them to be transported by wind, water and rain, or animals, to other locations. When plastic ends up in rivers and streams, it is eventually transported to the ocean where it drifts around, seemingly harmless. Some ends up in the ocean because they are cast off of ships, sometimes unintentionally other times not. Recent research is proving the detrimental impact this dumping is having on the ocean and the aquatic life and supports and the estimation that there are five trillion pieces of plastic in the ocean, which is likely a vast underrepresentation of the issue at hand (Howard, 2014). The problems are ethical, practical, economic and environmental—a combination of considerations that need to be addressed. PiA and the models that have inspired it, offer a way of addressing these concerns through creative collaborative initiatives and hybrid practices.

Methods and Theory

As waste-plastic art practices take hybrid collaborative forms, multiple theoretical and practical entry points are required to analyze the layers at which they operate. A blend of primary and secondary research allows for: a multi directional approach, the opportunity to put theories into practice and the provision of feedback from participants and artists. Using this combination of methodologies and sources provides a solid pedagogical foundation for developing future programs of a similar nature.

Junk art provides a historical point from which to view contemporary waste activist art practices particularly British professor and author, Gillian Whitley's analysis of bricolage and the role of the trash picker. Craft art and activism are similarly combined in the performed nature of the work that forms the core of this study. Craftivism, a term first used by American craftsperson and writer, Betsy Greer, is used in reference to art that acts to connect individuals to communities through the practice and performance of making.

This attention to public dissemination of process and community building through practice is a key element of this study, as it plays a vital role in fostering environmental literacy through education and making. Various scholars further support this. Linda Weintraub and Sam Bower's extensive research into the varieties of eco-arts practices both help position waste-plastic art within this category, although it is not specifically discussed. Suzi Gablik's thorough investigation of alternatives to "dominator systems", and how we can become better attuned to the needs of the earth through interconnected networks of practice forms the ethical and practical core of this project (Gablik, 2004). Grant Kester's The One Contemporary Collaborative Art and the Many in a Global Context (2011) and Nicholas Baurriaud's Relational Aesthetics (2002) have provided some important historical context on how collaborative and relational practices have been executed in various forms, for a variety of activist causes.

The analysis done by Hilary Inwood, a Toronto based educator and eco-artist draws these collaborative, craft based techniques into the educational realm. Inwood's extensive studies into eco-arts and their capacity to encourage environmental literacy provide formal pedagogical elements to the structure and execution of this research. Inwood highlights the importance of employing art as a means to achieving a balance between scientific research and affective, creative, and I would suggest actionable solutions, to environmental illiteracy (Inwood, 2008).

This research methodology forms the theoretical framework of PiA and feeds directly into the delivery of practical workshops, supports the formulation of the workshop model and discussion topics and also provides critical elements required for reflexive strategies. Primary, action, art-based research methods include participant observation during the workshop sessions that have been adapted from existing eco-arts practices, presented here in the form of case studies. Discussions during sessions with attendees and interviews with activist artists provided critical engagement with the various models, which leads to reflexive project analysis of successes and failures. These will be used to develop future workshops and the PiA website.

Polymers and Craftivist Methods and Practice

Junk art is a term associated with art practices that employ waste materials and champion particular aesthetic considerations. Objects that fall within this category are made up of discarded items that are collaged together to create a sculpture or hanging artwork and the "junk" is not obscured or hidden, but is essential to the artwork's aesthetic. It emerged in the 1960s, as a means to shock viewers and address social issues by presenting them explicitly. As an artistic form, it has ethical considerations, however its focus was not environmental issues, but the history that an object possesses. In her 2012 book, Junk Art and the Politics of Trash, Whiteley outlines public waste management services as a convenience that was previously carried out by lower income men and women who would collect and sell discarded items to make a living.

While this study is not exhaustive, the international phenomenon of the trash picker, chiffonier or bricoleur is shown to be one of social and economic importance, in a pre-garbage collection serviced society (The Globe, 1913). Whiteley provides a detailed account of the emergence of repurposed materials, or junk, in art around the world. Some of these practices continue today, most often in countries with challenging economic climates, such as South Africa, where artist and craftspeople often use discarded objects to create objects for sale to tourists. Various models engage with the traditional role of the bricoleur, with additional emphasis on the attention we give to what happens to our plastics when we are done with them.

Similarly, contemporary craft has shifted in recent years as methods of making have become more varied and materials have developed beyond those used in traditional folk crafts. Hybrid practices exist whereby craft artists are employing materials in new and innovative ways that blur the lines between craft object and art, "expanding into fields not previously considered" (Stevens, 2013). If, as posited by Janis Jeffries, craft is emerging as a means of individual expression that conveys sensitivity to materials, ideals and to confront consumer indifference, then emerging repurposed-plastic art is an excellent example of craft with conscience (Jeffries, 2011).

This activation of sustainable hybrid forms has been referred to as Craftivism by Betsy Greer and supports the notion that acts of craftivism, when done consistently and repeatedly, can spread and grow (Greer, 2011). The formation of groups such as Project Vortex illustrate how contemporary communities of practice are formed and shift the perception from individual responsibility towards a commitment and passion for a shared set of ideals and a common message (Stevens, 2013). [ii]

"Communities of practice define themselves along three dimensions. First, they are joint enterprises that are continually renegotiated by their members. Second, they function through mutual engagement in an activity that binds the members together as a social unit. And third, they produce a shared repertoire of communal resources, routine sensibilities, artefacts, vocabularies and styles that have been developed over time." (Stevens, 2013)

This further illustrates that the importance of craft and art objects lies not only in the monetary value that can be applied to them, but to the cultural and individual resonance that handmade objects may possess. Just as craft has evolved into communities of practice with a wide a variety of forms and intentions, environmentally focussed art has done the same. Over time nomenclature appears to have blurred distinctions between the types of approaches that relate to environmental awareness, as writer and environmental artist Sam Bower has stated:

"The term "environmental art" often encompasses "ecological" concerns but is not specific to them. It is flexible enough to acknowledge the early history of this movement (which was often more about art ideas than environmental ones) as well as art with more activist concerns and art which primarily celebrates an artist's connection with nature using natural materials." (Bower, 2010)

Contemporary craft validation, and by extension waste-plastic art, operates within a community of shared standards of legitimacy pertaining to a specific medium, in this case polymers (Stevens, 2013). When discussing the use of waste-plastic art in this way, a connection can also be made between the values of the ordinarily disposable materials being used. The tactility and versatility of plastics, as well as the multitude of forms it washes ashore as, allows for a diverse range of applications that falls on the edge of art and into craft practice. A shift such as this aids in a conscious and deliberate link to the disregarded waste objects that are thrown into the garbage or often directly onto the ground or into rivers and the ocean. The craftivist works to remake it into something that retains some semblance of its original texture or colour, but with a new context and use as an aesthetically appealing or even useful object, with an ethical approach to the environment. This ethical perspective is what unifies a multitude of craftivist practices and expands the possibilities of reaching diverse audiences, achieving a more sensitive and sustainable relationship with the environment (Sanders, 1992).[iii]

Project Vortex Case Studies

Project Vortex is an online platform that lists individual artists all over the world who each use plastic waste in their work. The site features Aurora Robson, Gabriella Bustamante, Katharine Harvey, Helen Seiver, Liina Klauss and Tyrome Tripoli who repurpose waste-plastic items in ways that explore their material possibilities. Three of these artists in particular, Bustamante, Klauss and Robson, have done work that invites communities to help restore the natural beauty of their local environments and employ waste-plastics to encourage environmental literacy. Notably, Canada has a single artist featured on Project Vortex, Katharine Harvey, who is a painter and installation artist based in Toronto, but does not fall into this study due to her aesthetic, rather than socially engaged approach. Between 5 February and 25 March 2015, I interviewed all three featured artists to gain insight into their practice and to build their approaches into the PiA workshop model and larger research project.

Case Study #1: Gabriela Bustamante

Bustamante lives and works in Amsterdam, Netherlands. A designer, consultant and university professor in cultural diversity, Bustamante previously worked with a partner, Caro Isern, to create the Latin Sisters Design Studio. Together they would connect businesses, institutions and communities with the common goals of achieving economic and environmental sustainability. Between 2006 and 2011, they ran a number of projects under the banner "Desycling"[iv] where participants were involved in brainstorming and workshopping ideas to address social and environmental concerns. Her business model implemented an adaptable co-design strategy where she is hired to address issues that involve social interaction. Community stakeholders, including local government bodies, would approach her with a prevalent environmental issue in the area and she would develop strategies to create positive change through educational workshops. Her collaborative design projects engaged various communities and often called local disposal methods into question. To facilitate the Desycle workshops, coaches from each community were trained over a period of roughly 4 months. They were taught desycling methods and the characteristics of a desycled design object. Using these methods, Bustamante and her partner engaged audiences with hands-on challenges to create valuable objects, such as jewellery, made from repurposed plastic materials (Bustamante, nd).

The aim of these short-term projects was to plant a seed of awareness in a local area, provide the expertise to educate the community about the effects of their waste practices and leave the community with new solutions and ongoing environmental practices in place. The Desycle coaches provided assistance during the implementation of the workshops and became sources of local knowledge to sustain engagement and continue sharing skills after the project had ended. The studio's formal workshops ceased operating in 2010, but some follow up was done until 2011. During this time, Bustamante noticed that some members of the community had taken up their own design practices that used recycled materials as their main medium. Simultaneously, some local initiatives had continued to run and new ones had begun.

In 2013 Bustamante worked on Trash Lab, an interactive installation for the Freezing Favela[v] exhibition at Mediamatic Fabriek, a cultural institution and venue for public events. The main parameter of this project was that each participating artist or designer had to build a favela out of recycled materials to house their installation. Bustamante's initiative was aimed at children and allowed them to make jewellery, skipping-ropes and other items from waste-plastic materials.[vi] She also continues to encourage sustainable design strategies through her role as a university educator.

Case Study #2: Liina Klauss

More recently, Klauss, a German environmental artist and painter living on Lantau Island, Hong Kong, has been travelling around China, Thailand and Malaysia in an attempt to activate communities in the restoration of their local beaches. Environmental issues are central to Klauss' practice; she aims to encourage a more sensitive relationship through her visual representations and travelling clean-up initiatives, which she presents to a global audience through her frequently updated blog page. Klauss works with local school groups such as Lantau Island International School on a regular basis, as well as NGOs and some corporations. To her, the value and success of this kind of work is found in the connections made between people and the environment and she aims to encourage more ecological thinking on a local level through her philosophy: "what you touch touches you".

Klauss primarily co-ordinates collaborative collecting and sorting events where large groups of people of all ages comb the landscape for plastic waste, which is then used to create colourful ephemeral land art installations. One or two days are allocated for groups to comb the landscape for waste matter. Klauss assigns a specific colour to be collected at a time, to focus the collection process and appeal to an individual's sense of sight. The items are not cleaned, but are arranged according to colour in the landscape and then photographed. Once the installation has been documented, all pieces are gathered up and carefully discarded or recycled if possible, leaving the area in a litter free state.

Klauss does not claim to have a solution to plastic waste found in the landscape, but she feels that through repeated action, change is possible (Klauss, 2014). She has enacted a number (about 20) of these projects, including River of Rubbish on the shore of Shui Hau, Lantau Island. On 31 October 2014, 80 locals met with Klauss to collect as much debris as possible from the landscape. The resulting River of Rubbish installation shows an astounding amount of plastic that has been sorted and arranged into a dry riverbed. This was done in support of a 3-day 75km fundraising swim challenge run by Plastic Free Seas, which ended on Shui Hau beach on 2 November 2014 (Plastic Free Seas, nd).

Klauss also works with the Savannah College of Art and Design, an American school with a campus in Hong Kong. Through initiatives run with the students, she has noticed a shift in perception as they have become more aware of their local environment and the issues of plastic waste, to the extent that some have begun addressing this through their own work. As none of the students have graduated yet it is still difficult to gauge whether this will continue, however, Klauss sees this as a positive effect of the work she is doing. Similarly, the projects she has run with Lantau Island International school have led to the possibility that the school may adopt their local beach. If this were to occur, Klauss would initiate weekly clean-up sessions with students to bring them out into nature and show them how the landscape changes over the seasons.

The positive reactions and connections being formed on Lantau Island and the surrounding areas is something that Klauss hopes will spread in the future. With this in mind she is hoping to collaborate with fellow beach-combing plastic artists Richard Lang and Judith Selby Lang, who are also associated with Project Vortex. This potential upcoming project, along with her pedagogical approach being adapted by local schools and connections being made internationally, illustrates Klauss' belief that positive action can be achieved through exposing the problem through artistic, physical and educational interaction.

Case Study #3: Aurora Robson

Robson employs a similar environmental clean–up art-making pedagogy within community settings. However, the artwork produced is not ephemeral and is ultimately sold. Robson is a Toronto born sculptor and painter, now based in New York. Since beginning to work with waste plastics in 2002 and after rigorous study into the material and its harmful effects on the environment, Robson has been inspired to share her knowledge with others through her educational projects. The format that her program Sculpture and Intercepting the Waste Stream follows is of a more formal nature and is grounded in theoretical and sculptural principles. This model has been implemented in Central Piedmont Community College in 2014 and Mary Baldwin College in 2012/13 (Robson, nd). Participating students were provided with a reading list, which included essays by Suzi Gablik and Alan Weisman, to stimulate discussion about the issues of plastic waste and the role that art can play to communicate environmental concerns to a wider audience. After selecting a local riverbank site, the group undertook a clean–up session, whereby all waste and foreign objects were collected and categorized. The items were carefully cleaned, then transformed into art objects using various craft and sculptural methods over a period of three weeks. The course culminated with an exhibition and silent auction of the students' work.

By engaging with a workshop model and sharing her philosophy that "it's called matter because it matters", Robson feels that she can help others to become aware of their own relationship to the material and encourage responsibility.

Robson sees her role as presenting a viewing public with personal items discarded and then reclaimed from the ocean—by doing so, she is addressing the disconnection between material possessions and thoughtless disposal, while invoking the notion of bricolage (Robson, nd). She is also inspired and encouraged by the possibility of having a sustained positive effect on the lives of others and the environment.

It was this attraction to social and environmental sustainability that led Robson to create the Project Vortex website and Project Vortex University page, as she sees it as a larger problem. While she recognises that as a professional artist, she has to make a living from the work that she produces, she also wants that work to be able to do something that benefits others. With this in mind, Robson decided to find out if there were other artists addressing these issues through their work and create a space where this knowledge could be shared with a wider audience through a single access point. Similarly, her educational practice within schools and community centers has been shared widely through her public talks and website, some educators from various parts of the U.S are now approaching her with the aim of implementing her program in their institutions. She provides the information required to begin similar projects so that anyone who is inspired to do so has the tools and support available to them. This spreading of her pedagogical model has the potential to become a permanent fixture in curricula across America and will be repeated at Central Piedmont Community College.

Processes, Participation and Pedagogy

Aesthetically, all four artists' work falls within the rubric of Junk art: they collect discarded objects and remove them from the waste stream, they repurpose found items and with the exception of Robson, they do not adapt their shape and colour. The implications and volume of the waste materials presented evokes shock in the viewer that so much waste can be found out of place. These artists have realized that this shock is best approached by actively working towards creating a dialogue where issues of environmental stewardship can be addressed through creative educational.

Project Vortex University provides open source educational information that artists and educators can adopt similar project types within a learning environment, effectively forging a connection between emerging artists and the seriousness of environmental degradation. By engaging with communities in this way, connections between responsible disposal methods are addressed through unique and collaborative means by a critical engagement with the material. Junk plastic art combines a sensitivity to materials that links the maker, the sources they obtain the objects from, the making process itself and the audiences they present their work to. Without this connection to materials, physical engagement with communities and critical reflection on waste management practices, the idea of caring for one's environment would not be conveyed.

By teaching and encouraging a collaborative practice of ethical making, Robson, Klauss and Bustamante are facilitating a shift from an individualistic perception of the artist to one of intersubjective collective awareness and action and the move away from a focus on object production towards a relational practice (Kester, 2011). Performing craft using recycled plastic, in a group, with the aim of changing our relationship to waste is indicative of an emergent philosophy that Kester sees as being a "...compensatory cultural response to the destructive, dehumanizing effects of modernity...." (2011) A return to a less individualistic, process based approach to art–making can be seen as relational practice, a term widely adopted since it was first used by Baurriaud in the 1990s. Both Kester and Baurriaud highlight changes in artistic praxis that foster an environment of interaction and exchange with the viewer to complete the work. Relational practices focus on the act of making or participating and self reflection as a key component to conveying meaning through experience rather than through purely aesthetic viewing (Baurriaud, 2002). Robson, Klauss and Bustamante's environmentally focused pedagogies are fundamentally relational and interactive and the self–reflexive impact participation has on those who attend is a key ingredient to their success.

Relating to the effects of plastics on the environment (whether through direct contact as in Robson and Klauss' clean-up projects, or through brainstorming solutions to local issues as in the work of Bustamante) brings participants the opportunity to act creatively with regards to their social and environmental responsibilities. The collecting, cleaning and making processes connect the maker with the environment through their action, and then the versatility, pliability and aesthetic qualities of plastic, as it becomes something new. Similarly, the resultant artwork is unique in colour, size and texture due to the fact that each piece is made by hand out of materials that come in various conditions, from varying industrial sources. By altering the aesthetic appearance of these machine-made objects, artists, craftspeople and the communities they work with are able to shift the meaning from one of disconnection with the environment, to reconnection with the materials, how they are out of place in the landscape, and the larger question of the environment.

All environmentally focussed art and craft practices share a common ethical approach to the earth and the impact that thoughtless human actions have on it. Not only do these artists and craftspeople enable local communities to take action against plastic pollution and restore the landscape, but they also allow for a sustainable program of action through funds raised by the sale of the work produced. Project Vortex functions as a marketing platform for all the makers involved and an educational and community building tool, with the singular goal of providing ethical methods to divert plastic from the waste stream. The models employed by Project Vortex artists are not only a means to create art objects, but also through the restoration of local landscapes and tactile employment of materials, they are encouraging ecological literacy through arts based education (Inwood, 2008).

Activating Local Initiatives

The pedagogic models that can arise from interactive projects such as those discussed in the case studies allow for a free-flow of ideas and strategies that are adaptable to participants and audiences in all parts of the world. Given the ubiquity of plastic waste and the rise in awareness about its detrimental impact on the environment, it is not surprising that these types of projects are creating their own communities of practice, using the Internet as a main tool for sharing information.

Project Vortex, as a central source of information regarding eco-arts education has been an effective tool for sharing these otherwise disparate practices. As demonstrated by Bustamante, Klauss and Robson, their projects have fostered awareness for local issues around plastic waste and the activation of individuals to work towards a more engaged relationship with their environment. This "place-based" art and craft practice brings communities into contact with the lived experiences of others and a connection to the broader context of the problems associated with plastics, something Inwood would describe as a development of how art and craft "can be used to create meaning in their lives or bring about social change" (Inwood, 2008).

Indeed, the structure of PiA was informed and inspired by the socially engaged, action oriented approaches taken at local levels across the globe. The aim of this initiative is not to solve the issues related to plastic pollution, but to create a visual and physical dialogue that addresses problems that are prevalent in contemporary society and to bring Canada into conversation with those who have instigated waste-plastic art projects in other locations. In performing the collecting, creating and discussions about local plastic waste, participants were engaged with the idea that they can do something creative to promote awareness of these issues where no alternative is offered. Here it is relevant to return to Weintraub's notions of Activators, Sustainists and Philosophers. Project Vortex artists and the chosen formula for PiA combine these methods of thinking about the environment in a unique way.

While not all the artists researched for these case studies act as Weintraub's Activators in terms of visible clean-up initiatives, they do divert plastic waste objects from entering the waste stream through the waste-plastic art that is created by all involved. All these artists and makers function as Sustainists in that they address important consumption issues, both explicitly and implicitly and the educational formats provide the frameworks for the artists involved to be considered Philosophers.

PiAcation

(PiA) took the form of two separate workshops, both run at the Ontario College of Art and Design University (OCAD), Toronto, Ontario, Canada in January 2015. The events were intended for a diverse range of people from various backgrounds and with a range of craft and art making skill sets. The aim was that PiA would generate interest and collaboration and assist in the formation of a local eco-art community through action and art based engagement and research. Plastic waste served as an entry point into environmental concerns, with the intention of guiding a range of participants in a making and discussion session. This was followed up with primary qualitative research in the form of interviews with artists and participants and a critical and reflexive assessment of the model. As there is an apparent gap in visible practices of this nature in Canada that can be traced through online searches or scholarly research, the intention was to establish an internet-based platform for like-minded local and global artists. This would provide an ideal vehicle for the dissemination of ideas and possible future links with similar networks around the world, sustained through continued research and connections with artists, craftspeople and curators initiating similar community-based strategies.

The sessions themselves were engaging, and allowed for idea sharing and discussions to take place amongst participants. While the art pieces made were not all deemed (by the makers) to be exhibition worthy, they all showed individual approaches to the materials and the objects were idiosyncratic, funky and critical of consumerism. While the workshops were enjoyable, the making process reflected a level of criticality and inquiry that reflected the earlier discussion. The participants all supported the importance of engaging with environmental issues through the act of making and it was seen as a beneficial method of fostering environmental literacy within educational institutions.

In addition to this, multiple attendees expressed interest in future workshops. Given the aim of this research, it is hoped that this will be possible in the near future. Through community engagement in Toronto, the workshops have proved beneficial for bringing people together and engaging them with notions of environmental literacy and the formation of local socially engaged educational projects. It has also allowed for an opening up of potential art activist and craftivist practices within Toronto and abroad.

The online presence of PiA can be found at polymersinaction.ca. The website currently displays a brief "About" section, "Similar Projects" and three posts about the development and rationale for the project. Forthcoming posts will publicize upcoming workshops, as well as any steps towards curriculum development and any moves to engage local recycling policies.

The Future of PiA

In effect, this course of action is an open-ended response to and assertion made by Inwood: that these kinds of models are not being shared with a broad audience (Inwood, 2008). The key difficulty with this kind of information is not that it isn't being shared, but that interest needs to be generated through grassroots initiatives for more sustained engagement to occur through a network of projects and online exposure.

While Inwood raises an excellent point and the research into these areas is difficult to locate, the benefits of the Project Vortex and PiA websites are many. It operates as a marketing platform for associated artists and makers, providing their professional website links and statements, and the sale of their featured work helps to keep clean–up initiatives and NGOs functioning. It links together what would otherwise be disparate communities of practice under a shared ethical approach to materials and the environment and it provides information about educational models that can easily be adapted into new forms: as in the case of PiA.

What remains to be seen is exactly how PiA will continue to evolve into an established locally based eco-art pedagogy that can be similarly adopted into curricula, like Project Vortex University. What is certain is that the seriousness of environmental degradation due to plastic waste is an issue that requires immediate attention. As demonstrated by Bustamante, Klauss and Robson, collaborative, community building craftivist practices can succeed in drawing this attention by encouraging environmental literacy. While this interests local makers and artists, as well as members of the public, an access point is required whereby actionable change can be achieved and sustained through the process of making. Given the interest shown by individuals and community members in Toronto and through adaptation of the eco-arts education, the ongoing PiA project and website, both run and maintained by me, will serve as a local information source for educators and artists and craftspeople around the city and globe. By sustaining a connection between communities and local plastic waste disposal issues and an international audience Polymers in Action offers a way into the global conversation and offers a creative and collaborative means to address environmental concerns at a local level.

[i] This practice of using discarded items to make art and craft objects to sell to tourists is something that the author has witnessed first-hand, having grown up in South Africa

[ii] While Robson, Klauss and Bustamante have not explicitly identified themselves as craftivists, the scope, methods and effects of their practices are closely related to those of craft activism

[iii] The fact that all three featured artists are women has been noted and considered. This is an important point that would benefit from deeper investigation in relation to gender roles in relational, craft and environmental art.

[iv] No specific definition is available for the term desycling, however, it has been used by Bustamante to describe the process of designing or making artwork using waste objects that would otherwise have been sent to landfill

[v] A favela is a shantytown constructed out of waste materials by people who are homeless. The term originated in Brazil

[vi] No current examples are available, as some time has passed since this project ended

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