



VOLUME 5 – JOURNAL OF JEWELLERY RESEARCH

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Editorial: Volume 5 Journal of Jewellery Research

Authors: *Dr Roberta Bernabei & Professor Jayne Wallace*



This issue marks the 5th Volume of the *Journal of Jewellery Research*. It is an exciting small landmark and a good place to be since the initial idea for the journal in 2015, the first call for papers in 2017 and the launch of volume 1 at Schmuck Internationale Handwerksmesse in Munich in 2018. It was a big event to publish the first volume and it brought together a diverse group of authors to share and discuss their views and research on issues related to the wearing of jewellery as a sign of individual positions in society, cultural and societal changes, including jewellery as an aid for wellbeing and healing processes. Since then, a steady growth of interest in jewellery research has helped us to publish a volume each year. This year we are very pleased to announce the publication of five papers.

Both Wren Moore and Bic Tieu have used the visual/textual paper format to present doctoral research examining identity through jewellery practice in relation to culture and place. Bic uses graphics as a visual tool to interrogate and expand on themes related to her personal experience as a Southeast Asian-Australian woman, as well as to themes of migration, heritage and contemporary jewellery processes. She uses her hybrid practice of graphic and jewellery design in a dialogical way - each not only informing the other but also creating a mechanism for her to 'sense-make' on personal, intellectual and conceptual levels. She describes her research as exploring cross cultural references to question mobility of people and material culture. There are big themes within this work such as migration, diaspora and often opposing archetypes from the East and West finding form in her family's lived experiences. The in-betweenness she highlights is taken

for a walk through her practice of shifting visual ideas between two and three dimensional representations and offers the seed of how such methods can serve to support reflection and contemplation for a maker on both complex ideas and lived experience.

Wren's paper also speaks to this in-betweenness in relation to place and identity. For her, two climatically diverse regions of Australia form the geographical context and her practice encompasses mindful walking (drawing on Tim Ingold's writing on wayfaring), digital mapping of body data and natural materials of the locations. Wren's paper marks a centre point in her PhD journey and focuses on one of these geographical places, the jewellery shown being from previous work and indicative of her approach and suggestive of what will follow in her next part of her project. This candid paper describes personal experience alongside motivations to undertake this research and articulates how realities and ideas of lines have existed on her body and as guides within this work. Both sites on the body (the neck) and in the landscape (the shoreline) are viewed as liminal spaces and become a way for Wren to draw together action and theory in order to, again, reflect and document autoethnographic experience.

The shoreline becomes a different but similarly rich context in Karen Westland's paper, which describes parts of her doctoral research drawing physics and craft together around the use of solar energy to create heat for craft processes. Karen gives us wonderful examples of how the fields of craft and physics have informed one another historically and describes an inventive, hands on, craft approach using a Fresnel lens to concentrate sunlight in order to heat, melt and vitrify a

variety of materials. Part of her research practice involves exploring different coastal locations in Scotland, UK where she documents the sands therein and how they respond to the solar lens. Her research is exciting in its contemporary contextualisation of historical processes that could offer sustainable manufacturing methods for craftspeople. She highlights what we can learn from looking back into ancient history and bringing methods and knowledge back to life that have been, as she asserts, to a large degree lost in time.

The value of being a custodian of things past in order to make sense of the present and the future is also at the heart of Sarah Rothwell's paper. Based at the National Museums of Scotland, UK, Sarah details her work in articulating and preserving the legacy of jewellery designed and created in Britain and the Nordic States between 1945 and 1978. The acts of sourcing examples, unearthing makers' motivations for the work and connecting these to social and economic contexts at the time serve to reveal important narratives that have previously had little attention. This under researched and under articulated aspect of Modernist jewellery is a fascinating part of the history of our subject and through building a new museum collection of Northern Modernist jewellery Sarah has been able to describe the work, its makers and cultural period in new ways.

Being able to make sense of a period in time through a collection of work made by multiple jewellers is also how Ginta Grūbe draws us into her paper. Focused on three exhibition experiences that enabled the creation of the Latvian Jewellery Art Association (LJAA) she discusses the meaning of community and the need for

self-organisation particularly during the global pandemic of 2019 - 2021. Ginta takes us through the exhibitions and dynamics surrounding them and draws out dynamics of groups bringing strength to their members, the power of specific themes and nuanced aspects of what members hope to gain from one another.

We are proud of publishing a 5th volume, and that it is free to read and publish in – we see this as an important way to provide accessibility of the work and hopefully a welcoming forum for jewellery research of all kinds. In developing this journal, we continue to pursue ways of enabling academics, practitioners, and independent writers to communicate research/practice with a variety of approaches that are paramount in our field.

We hope you enjoy this volume of the journal.
Roberta Bernabei and Jayne Wallace.
Editorial Board.

With thanks to Advisory Board:
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Latvian Jewellery Art Association: Exploring the Function of National Associations for Jewellery Artists

Author: *Ginta Grūbe*



ABSTRACT

This paper examines the experience of three exhibitions in the context of the development of Latvian Jewellery Art Association (*Rotu mākslas biedrība*, further in the text referred to as LJAA). The case study is useful in order to understand the meaning of community and raise awareness for a need for self-organization within the art jewellery field. Art jewellery indicates that both art and jewellery are similar or jewellery is an art form (Besten, 2012). Exhibition examples cover the time period of the global pandemic (2019-2021) and thus gives an insight into the different pre- and post-pandemic experiences.

Three sections are called after three LJAA exhibitions – A PRIORI, MARK and DIARY. LJAA identity constrains are investigated in the chapter - A PRIORI. The following research indicates the ability for artists to adapt their creative ideas to a specific theme in section entitled MARK. In order to bring together different creative approaches a comprehensive but conceptually rich exhibition framework was built and can be read about in the section DIARY. The examples are viewed in order to provide a detailed insight into the development of successive exhibitions.

INTRODUCTION

EXPLORING THE FUNCTION OF NATIONAL ASSOCIATIONS FOR JEWELLERY ARTISTS

This article reviews the freshly established non-profit organisation Latvian Jewellery Art Association and the exhibitions that have been organized up to 2021. The hypothesis of the research paper states that if a

jewellery artist community unites it gains not only the financial advantages (referred to in section A PRIORI and DIARY) but also develops a wider impact on the field as a whole (referred to in CONCLUSIONS). The goal is to review three-year (2019-2022) exhibition activities and to distinguish the importance of the LJAA in the context of the jewellery art scene in Latvia.

LJAA was established in February 2018, with a mission to bring together professional artists active in the field in Latvia. The three founders were jewellery artists - husband and wife Zane Vilka and Janis Vilks together with Valdis Broze. The motivation for such action came naturally. Regarding Latvian jewellery art exhibition scene, the sight has been unreasonably empty. With one bright exception in the form of gallery Putti (that unfortunately has ceased to exist as a jewellery gallery) significant jewellery exhibitions were a very rare exception in the Latvian cultural scene. Several galleries and museums set up exhibitions, but these were mostly small-scale to middle-scale solo exhibitions. A major exhibition for the first time in 20 years took place in 2017 at the Museum of Decorative Arts and Design in Riga (Veinberga, 2017). This was also one of the turning points for the formation of a new association. As Zane Vilka explained she had doubts as to whether another generation of jewellery artists would emerge without major exhibition experience. Among other activities, exhibiting work is the basis of a practicing artist. The regularity of middle-scale to large-scale group exhibitions has been low, knowing how many good artists in Latvia work in the field of jewellery.



*Rasma Puspure, earrings, Random Treasures,
2019, from the exhibition A PRIORI, photo: Maris Grinbergs*

A PRIORI

The first event organized by LJAA after uniting was a group exhibition A PRIORI. It was meant to be a “getting to know each other better” kind of event for the members. Also, the first exhibition inevitably introduced the freshly established organization to the public. The title was – A PRIORI - a term used in philosophy to distinguish types of knowledge. Something that one knows a priori expresses a statement that one can derive by reason alone. Looking at the term in similarities with the newly formed LJAA, both experienced artists and recent graduates were placed in an equal situation. Everyone’s knowledge regarding LJAA as a new platform was derived by reason alone without possibilities of empirical facts. The exhibition took place in Cesis Exhibition Hall from June 21 to July 28, 2019 (Zane Vilka, 2019). The group exhibition A PRIORI gathered 20 jewellery artists – all new members of the LJAA. The exhibition layout was mostly traditional – with showcases on top of several podiums.

In collaboration with art historian Iliana Veinberga who prepared a draft for submission the exhibition was supported by the State Culture Capital Foundation (further in the text referred to as SCCF). This highlights one of the most visible benefits when forming an association - the ability to apply for public funding. The main conclusion within LJAA after the first exhibition was – members definitely support more group exhibitions. Coming together and viewing each other’s works results in a sense of togetherness. Such an event also raises self confidence on a group level. It is easier to gain attention to a specific medium (in this case jewellery) when you are in a group.



Anita Savicka, Rings and earrings, from the exhibition A PRIORI, photo: Ginta Grube

This can be illustrated by the following example. A group of painters had an exhibition in the same building at the same time as A PRIORI. One of the LJAA members justified the choice to participate in the exhibition, by explaining that his contemporaries participate in the painter exhibition and when they see a jeweller group exhibition, they will notice his absence. He wanted to be present in current events not only as a part of personal growth, but also because of his status. If you are a jewellery artist in life, you must also be a jewellery artist in exhibitions (if such events take place).

A different approach for comparison can be traced in 2004 when The Association for Contemporary Jewellery, or ACJ (UK national association) organized the first national exhibition *Jewellery Unlimited*. ACJ's history dates back to 1997 and before the first exhibition in 2004 they organized several international conferences so they had grown up to over 575 members (approximately 28 times more than LJAA). Work was to be selected by a specially formed panel. In their exhibition catalogue they say: "The selectors were asked to choose work that they considered to be jewellery at its most bold and innovative in terms of design, concept, materials and technique." (Holly Belsher, 2004) The benefit of such a large community is the opportunity to evaluate the works and select only the best. However, several hundreds of members are too many to form closer ties among all members. It requires a different kind of communication.

Significantly more members provide an opportunity for widely attended events or competitions but it becomes impossible to organize an exhibition for all members at the same time. It is the exhibition in which all members take part that is particularly cohesive.



LJAA publicity image, 2020, photo: Kaspars Filips Dobrovolskis

There were several unsuccessful attempts to create a visual identity for LJAA. This highlighted a new issue - members' views of LJAA's graphic identity differed sharply. In the context of generational differences, various understandings of successful graphic design emerged. Each author retains his or her individual understanding of artistic processes and this makes the society both strong (if the different views are skilfully positioned and maintained) and weak (if the views are mutually exclusive). In the given case the conversation led to the conclusion that LJAA can function without an artificially imposed visual identity. Differing views and the inability to find a common solution led to a halted process. Maybe a unifying graphic language (logo) is unnecessary. Jewellery and the personalities speak for themselves.



Vladislavs Čistjakovs, brooch, Daugavpils street, 2020, from the exhibition MARK, photo: by author

MARK

The exhibition title proposed by Zane Vilka (the chairwomen of LJAA board) was MARK (*Zīme*). It was an ambiguous title to translate on several levels. Direct translation from Latvian stands for a sign, also a symbol. The English title however stands for the famous Latvian born painter abstractionist Mark Rothko. LJAA received an invitation from the Mark Rothko Art Centre in Daugavpils and gladly agreed to participate. The author sees success of the exhibition MARK in the fact that all participants agreed to create new works specifically on the given topic. The theme was not only the artist Mark Rothko himself, but also his hometown Daugavpils and the fortresses located in it, where the art centre has been established. Several artists, as Rasma Pušpure, Paula Treimane and Māris Šustiņš made their jewellery for the exhibition MARK in strong connection to canvases – a miniature “painting” in silver, mother of pearl and other materials. Andris Lauders, Anita Savicka and Zane Vilka build their jewellery pieces choosing the fortress as the key structure for the composition. As artist Vladislavs Čistjakovs explained after the exhibition opening, he made his brooch enclosing different messages into the piece. He used to go to school over a street named Daugavpils Street (named after the city where the exhibition took place). He decided to dedicate the piece to his childhood surroundings not quite sublime, as the walls used to be depicted with poor quality graffiti tags. He also engraved “Mama + Caiaa” - popular Russian names that also happen to be the names of his grandparents. Thus, the brooch was both a portrayal of everyday sight and a very personal message.

Somehow the piece included various signs and, in the author's view, became the key object in the exhibition MARK. Clever for its hidden story, which was known only for the artist himself, the brooch was also a bit vulgar.

After speaking with the artists in the exhibition opening an article in Latvian contributing to the exhibition MARK was written by the author. It got published shortly before the exhibition closed its doors to visitors. The idea was to share some of the stories behind the pieces to other potential exhibition viewers. Reviews or any articles on exhibitions in general are an unstable area regarding press in Latvia. As art critic Ieva Lejasmeijere pointed out:

"I don't know how the editorial staffs handle it, but I think it's very complicated - the exhibition is open two weeks, at most, a month. People are busy. How do you get those texts from critics so that readers can still manage to read, choose and visit?" (Ieva Lejasmeijere, 2016).

However, excluding press releases, articles on jewellery exhibitions are post factum features. The following years (2020-2022) become historically significant, with Covid-19 pandemic. It should be mentioned that the second group exhibition MARK was closed ahead of schedule due to the pandemic. The exhibition was open for visitors approximately one month instead of two.



Exhibition MARK view in the Mark Rothko Art Centre 2021, photo: Ginta Grūbe



Paula Treimane brooch collection, Nr.1, Nr.2, Nr.3, Nr.4, 2020, from the exhibition MARK, photo: by author



Exhibition DIARY view in Valmiera City Museum Exhibition Hall 2021, photo: Krista Ose

DIARY

The LJAA website was launched at the beginning of 2021 and the following set of exhibitions under the title DIARY (*Dienasgrāmata*) took place in the summer/autumn 2021.

The project DIARY was a travelling exhibition and video and photo fixation of the jewellery artists/ LJAA members works from 2020/21. The project was supported by the SCCF target program *KultūrElpa*. The target programs goal was to support the creation of new cultural products and adapt existing products during the global pandemic.

The exhibition DIARY was on view at the Valmiera City Museum Exhibition Hall from July 3 to August 1 and from August 29 to October 10 at the Kuldīga City Artists' Residence Gallery, Latvia. Both expositions were alike but different because of the various venues. The theme of the exhibition DIARY was very democratic however not populist. It was in line with the prevailing mood of the pandemic, which encouraged people to stay at home, avoid mass events. Diary writing is a very intimate process. The exhibition also looked at the daily recording process as an activity, not only a textual documentation but also the presence of other means of artistic expressions. Artist Krista Ose was invited to arrange the display making this the first exhibition with a set designer ensuring that the layout complements the exhibition theme and the jewellery pieces.



Exhibition DIARY view in Kuldīga City Artists' Residence Gallery 2021, photo: Krista Ose

The keywords of the exposition *DIARY* were *intimate*, *black and white* and *rhythm*. Zane Vilka suggested the keywords and gave explanation - *intimate*, because the diary tells about an intimate, personal experience that will be reflected in the limited space and targeted lighting in the exhibition. Black and white is associated with written text and will be reflected in the colour scheme of the exhibition. Rhythm, because the diary has a rhythmic structure and will be reflected in the layout of the individual elements of the exposition. To build the desired mood Krista Ose formed sheets of paper on the tables and on the walls of the exhibition hall. The result was surprisingly close to the initial ideas and mood sketches. At the opening of the exhibition there was a white wall with sheets of paper at the entrance, where the artists were invited to write their diary entries for that day. The large rolls of paper with signatures and text complemented the jewellery exhibition.

Kuldīga City Artists' Residence Gallery had a pleasant aura. The premises are located in a very beautiful historic building, the second floor of which has just been restored; leaving on the walls partially restored old murals. Paper was not needed over the picturesque walls. However, paper rolls were used for part of the exposition. The set designer Krista Ose materialized the feeling of writing a diary even more – two painted writing desks and chairs were added to the exposition. One was painted black and the other one white. Some of the jewellery was exhibited on the desks. The white desk with a chair was located in a small room of bay window on the second floor.

On the desk were five rings by Anna Fanigina from the ring collection CAPRE DIEM (translation from Latin – “animals of the day”; the artists translates the title to Latvian as “*ķer dienu*” that literally translates as “catch the day”).

Creating videos was a whole new experience for the members. The unexpected side effect of the video making process was the fellowship within the member group. It builds up by sharing the “in front of camera” experiences in the make-up room. The idea of video filming came in the context of the pandemic. The target program asked for a solution for contactless display of cultural content. Video was the most appropriate form. For now, the videos are only in Latvian but LJAA is working on a project to supplement video with subtitles in English. (ROTU MĀKSLA. IECERE. PROCESS. REZULTĀTS. (JEWELERY. INTENTION. PROCESS. THE RESULT.), 2021) In the video 18 artists share their stages of the work in process and also share some significant experiences and future plans. The video framing shows the artist’s portrait on the screen. At times a little bit of jewellery appears, but not too much in order to keep the intrigue and desire for the viewer to face the jewellery in real life. The video was still being filmed and edited during the first exhibition at the Valmiera City Museum Exhibition Hall but the premiere took place at the second DIARY opening in Kuldīga City Artists’ Residence Gallery. And the video remained as a part of the exhibition. “New technology, the use of film screening, video and photography as a vital part of display are still underdeveloped tools that could be used for telling stories, providing context and giving information,” is one of the conclusions Liesbeth den Besten (writer, art historian) comes to in her essay “The

Missing Link, On jewellery presentations in the Museum”. (Besten, 2015) In a way, it was the context of the pandemic that favoured in video creation. If there had been no need for content that could be distributed digitally in case of closure of exhibition halls, such videos might not have been made at all.



Una Mikuda, brooch collection, 365 brooches for each day of 2020, from the exhibition DIARY, photo: by author



Exhibition DIARY view in Kuldīga City Artists' Residence Gallery, 1st floor, 2021, photo: Kristaps Jansons



Exhibition DIARY view in Kuldiga City Artists' Residence Gallery, 2nd floor, 2021, photo: Krista Ose



Exhibition DIARY view in Kuldiga City Artists' Residence Gallery, 1st floor, 2021, photo: Krista Ose

CONCLUSION

The research provides an opportunity to become aware of the importance of local group exhibitions in the development of the everyday jewellery community. By purposefully founding various larger or smaller associations, it is possible to strengthen the position of jewellery artists in a certain society.

What matters is not only the visible process, which manifests itself in the fact that exhibitions take place. Communication between artists, healthy competition and the opportunity to get to know each other are also important. Artists who work alone in the studio (as jewellery artists) should be forced to mutual communication. Such interaction within the group is necessary to form a community of specialists. Exhibiting results in individual experience for each artist and also raises the bar of qualitative jewellery group exhibitions.



Exhibition DIARY view in Kuldīga City Artists' Residence Gallery, 1st floor, 2021, photo: Krista Ose

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This research was part of Ginta's doctoral studies at Art Academy of Latvia. Her research seeks to enrich the historical analysis of processes and development of artist jewellery in Latvia from 1991 until present (2021/22).



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Solar Concentration for Craft Practice and Sustainable Development: Fusing Ancient and Modern Methods

Author: *Karen Westland*



ABSTRACT

This paper presents opportunities created through an interdisciplinary collaboration between the fields of physics and craft. The research adopted a Fresnel lens to concentrate sunlight generating heat for craft purposes. Recursive methods were developed in relation to literature and past projects working at the intersection between science and craft. Outdoor experiments were conducted in Scotland following a Safe Operating Procedure to safely transport and use the Fresnel lens. Material identity was investigated during the creation of the *Sand Map of Scotland* and the 'Solar Enamelling' experiments indicated the potential of using this clean energy source for material processing. Findings highlight that the use of optics for material alteration adopted in ancient history are becoming increasingly relevant in society today with the demand for fabrication methods that can contribute to sustainable development. This research indicates the technical capabilities of using a 40cm² Fresnel lens to heat, melt and vitrify a variety of materials and suggests future applications of this technology including the ability to digitise the process. This material processing technique offers an alternative to heat matter and is significant in geographical locations with ample sunlight, offering a cost-effective option to traditional heating methods and allows directional heating, which local craftspeople can exploit to their creative advantage.

INTRODUCTION

THE TRANSMUTATION OF MATTER THROUGH TIME WITH OPTICS AND PHOTONICS

Physics and Craft practices have a long-standing relationship: from the serendipitous manner by which a spectacle maker happened across a scientific instrument which later became the telescope (Galilei 1623), to scientific glassblowers creating apparatus through which 19th century scientists were able to demonstrate physical phenomenon (The Third Millennium 2021). Craft has played a vital role in developing technologies to aid scientific endeavours, yet in recent years, physics has informed technological capabilities in the craft field. Since the 1960s, photonics (technology concerned with the properties and transmission of photons: e.g. lasers, cameras, LEDs etc.) for manufacture has technologically transformed the jewellery industry in the UK: The London Assay Office for example have invested in X-ray fluorescence spectroscopy to assay items, laser marking to apply hallmarks and a fibre optic laser to manufacture the precise punches for traditional hand-punched hallmarking (Anon 2012). More broadly, photonics technologies are supporting the conservation of historical artworks and artefacts (PISTACHIO 2021), and laser welding, cutting, Selective Laser Sintering/Melting (SLS)(SLM) technologies have enabled craftspeople to design and create work to a high level of precision that was not previously technically or financially viable (KTN 2020)(Snyder 2013). New Crafts emerged in response to such technologies becoming accessible: with a trend for

many to deviate away from a traditional craft studio, to embed computer aided design and manufacture into their craft process, as seen in *Digital Handmade: Craftsmanship and the new Industrial Revolution* by Lucy Johnston. Whilst technologies such as the 3D printer have enabled new ways of making, it can be said that objects made through these digital technologies feature aesthetic similarities, and are often energy intensive and wasteful fabrication processes by comparison to traditional craft methods.

Research to improve the power and reduce the size of lasers continues, yet controlling light to process materials dates back to ancient history. Solar energy is not a modern concept: solar rays have been harnessed through optical devices to illuminate darkened rooms, cut gemstones and for alchemical purposes throughout history. Convex lenses or 'burning glass' were used to concentrate sunlight to start fires in 7th century B.C.E.. 'Burning mirrors' were next to be invented in 212 B.C.E. where polished metal plates reflected the Sun's rays. This is famously illustrated in the Archimedes' 'death ray' fable which destroyed an entire Roman fleet (Chariot Energy 2021), as seen in Figure 1. I have identified two historical solar concentration methods that hold potential for modern application: 1, Sun Temples reflected sunlight using reflective metal panels to heat a central stone which then radiated the heat into a chamber to cook food, dry materials and fire ceramics, and 2, Parabolic mirrors ('burning mirrors') were used as weaponry and for alchemical purposes on gems, metal and stone. It is thought the mirrors were often used instead of a furnace to smelt and refine metals as the clean energy source burnt off oxides, leading to the 'solar forge' being a useful addition to

the metallurgist's toolkit in addition to the furnace (Jordan 2014). These ancient methods of solar concentration for material processing have been mostly lost to time due to abundant fossil fuels, advances in equipment and technique, and the inconsistent availability of sunlight.

The development of optics however has continued: Augustin-Jean Fresnel invented the Fresnel lens in the 19th century to reduce the material weight of glass lenses by dividing the surface into concentric rings assembled on a flat surface (Hecht 1998). These lenses are now commonplace in lighthouses and searchlights to focus lamp light into a narrow beam. Furthermore, Fresnel lenses have been used in recent low-tech community projects to create 'solar ovens' in areas with limited electric supply: usually concentrating light onto a thermally conductive surface where cooking pots are then placed nearby to heat the contents, not



Figure 1: Artist's view of Archimedes of Syracuse (Sicily) operating his burning mirrors against Roman triremes during the siege of his city laid by consul Marcus Claudius Marcellus, at the time of the Second Punic War (214-2 BCE). Licensed by Science Photo Library.

dissimilar to the Sun temple premise (Solar Cookers International 2021). Recent research at Nottingham-Trent University has combined Fresnel Lenses for solar concentration with periscope instrumentation to allow solar ovens to be located indoors whilst the solar concentration occurs outdoors (Nottingham Trent University News. 2019) highlighting how more complex optical systems can be designed for increased user experience. Markus Kayser (2018) first created a 'Sun Cutter' (laser cutter alternative) using the Sun, a ball lens and xy-plotter before the 'Solar Sinter Project' in 2011, which combined a Fresnel lens with a photovoltaic powered x,y,z, axis printing bed filled with sand to sinter sand from the deserts of Egypt into glass objects using solar radiation. This project demonstrated how an abundant material in a remote location could be processed using clean energy. Scientific evidence of rapid climate change since the Anthropocene led to the emergence of the concept of sustainable development in the 1980s. Sustainable development is defined as economic development in the present day which does not deplete our natural resources to the detriment of future generations. The field of design is considered critical to changing our fabrication processes and energy usage, to reduce the rate of climate change and preserve our environment. In response, products and services are increasingly designed with social, environmental and economic impacts considered. Often, traditional craft practices and understanding indigenous philosophies have offered useful insights into how to engage with our surroundings through lived experience (Ferraro, 2019).

Craft has been embracing emergent technologies as previously mentioned in regard to laser applications, and jewellery craft practices continue to pioneer new methods despite the physical limitations. Traditional decorative vitreous enamelling has remained mostly unchanged since the third millennium B.C.E., yet craftspeople and researchers have adopted new methods for innovative results. This includes the work of Yinglong Li whom is applying plique-a-jour (enamel suspended between wires like stained glass) to SLM metal frames (Association of Contemporary Jewellery 2020); Arthur Hash (2021) who laser etches enamelled surfaces, a process which vaporises the targeted silica at around 1100°C, and Jessica Turrell (2010) who enamelled 3D printed and electroformed structures using industrial enamels to explore the interface between contemporary practice and traditional enamel techniques during their research. Stemming from ancient and more recent practices and research in this area, this research study explored the intersection between physics and craft for material processing opportunities. The intent was to explore the potential of the Fresnel lens from the perspective of a craftsperson to understand how this tool could heat and melt materials for both sustainability and aesthetic purposes. The research, conducted by the author, explored the technical parameters of 'solar craft' using a 40cm² Fresnel lens and includes a *Sand Map of Scotland* and an investigation into 'solar enamelling': a technique not previously evidenced as an ancient craft. This article details the practice-based investigation of introducing solar concentrating technology for craft practices and suggests the future potential and significance of this activity and its potential contribution to sustainable development. The use of both first and third person have

been utilised through this article: first person to convey the authors personal experience and observations during the research and third person to voice more objective, technical information and to contextualise the study within the craft field more broadly. All outdoor experiments were conducted in the UK following a Safe Operating Procedure to safely transport and use the Fresnel lens to reduce personal and environmental risks.

HOLDING SUNLIGHT

I do not often think about my physical interaction with sunlight: I know my body needs sunlight to produce essential vitamins and will experience sunburn if exposed to solar radiation for too long. Yet it was bizarre to experience holding a lightweight, 40cm² acrylic lens, which if positioned perpendicular to the Sun can concentrate sunlight to an incredibly bright focus of approximately 4mm and reach temperatures in excess of 1200°C in the UK, as seen in Figure 2. As a silversmith, I have been conditioned to wield powerful tools and equipment, yet this solar craft practice felt distinctively different because it connected my hands to the Sun, positioned about 151.58 million km away and the high temperatures achieved with a relatively small lens highlighted the power of the distant light source transforming my target material. This immediacy of impact and utilisation of the Sun's rays that usually go unnoticed became an accessible and affordable heat source through the adoption of a lens. I had investigated other physics equipment for craft practices such as physical vapor deposition (depositing thin layers of metal to a surface in a vacuum) and tempering metal surfaces using a laser for decorative purposes, yet

in my opinion neither had the mass-appeal or accessibility to the craftsperson like the Fresnel lens did: who can choose how they engage with the tool.



Figure 2: Karen Westland, Solar Enamelling copper tube on beach, 2019. Still from video.

The lens can be used in different ways: it can be hand-held, mounted in a tilting frame (an artist's easel works) or can be digitised to track the sun on a tripod; the divergent light exiting the Fresnel lens ranges in temperature allowing some control of where materials are positioned to alter their material state. The first stage in this research study explored solar craft through heating different materials to document the Fresnel lens parameters which included the creation of a *Sand Map of Scotland* based on Kayser's work with attention to the craftsperson's connection with material and place in the process. These initial tests were created holding the Fresnel lens by hand and bringing the focus down onto the material bed. Heating various materials including bullseye glass, silver and fabrics using the Fresnel lens enabled the documentation of thermal parameters to learn how materials reacted to the directional heat source as seen in Figure 3.

The glass frit fused effectively, samples needed turned over if the underside was also to be fused and did not break when cooling in outdoor ambient conditions. Flammable materials such as wood and fabrics were singed in a controlled manner as it was possible to introduce the focus to the desired area, then lifting away when the desired effect was achieved. Small metal samples such as fine silver wire were partially melted yet larger surfaces did not experience change, likely due to the thermal conductivity of the metal, spreading the heat absorbed across the entire material, preventing the metal from reaching melting point. It was also possible to sinter sand into glass in Scottish light intensities which indicated that materials with a melting point under 1200°C would experience some thermally induced change. Care had to be taken not to bond materials onto the material bed (usually a refractive brick) even with kiln paper placed underneath to prevent adhesion, which indicated the focus of the Fresnel lens was more intense than the temperatures required for many of the materials tested. Building from Kayser's solar sinter research, glass was made with sands from various locations on the Scottish coastline to understand the geological and geographical characteristics of each sand sample. Sand was chosen to investigate if where the material was collected from influenced the glass material outcome. Sand samples were collected from 12 coastal locations in Scotland and each dry sample was exposed to the focus of the 40cm² Fresnel lens for 5 minutes for comparative analysis. The sand and glass samples in Figure 4 demonstrate the diverse range of aggregates collected and glasses created. Sand is defined as soil particles between 0.05mm and 2mm in diameter and is 85% sand and no more than 10% clay (Glinski 2011)(Agriculture Canada 1976), which suggests great variation is possible

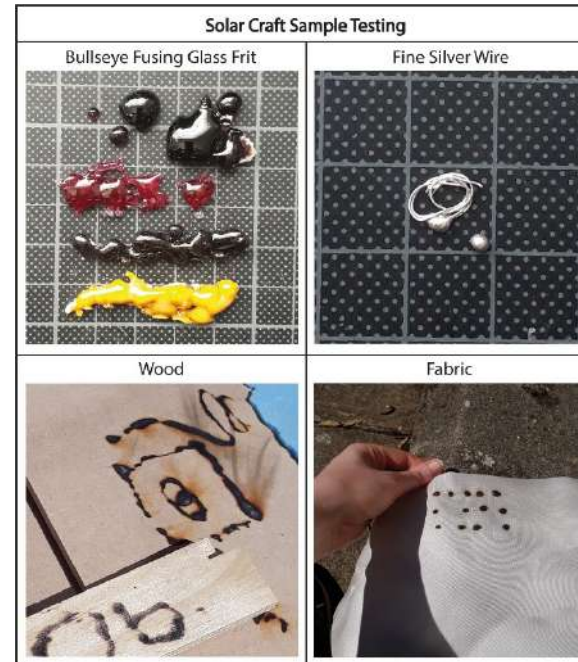


Figure 3: Karen Westland, *Solar Craft Sample Testing*, June & July 2018. Glass, silver, wood and fabric.

depending on local rock and soil types. The Egyptian desert sand from Kayser's work appeared a consistent shade of white in glass form whereas every sample in this study featured some colour variation, which likely relates to Scotland's diverse geological landscape as depicted in Figure 5. The samples from St. Andrews appeared to have a chalky content in the sand which was 'left behind' in the fusing process and it was clear that sands such as Shetland fused rather effectively whilst the sand from Crail proved more difficult. This research introduces the notion of solar sintered sand

objects holding a sense of place due to the sand being unique to the collection site and the sunlight intensities relative to the geographic and atmospheric location. Moreover, the map emphasises how natural resources in our local environment can be reconsidered with the view of developing fabrication methods that can contribute to sustainable development. The narrative has also been explored in the anthropological project *To See a World in a Grain of Sand* by Atelier NL (2022), which has to date melted sand from 809 locations globally into unique glass samples (using a kiln) to reveal the diverse colours and textures of the world.

I believe this connection between materiality, locality and sustainability will appeal to craftspeople wishing to pursue processes connected to the natural environment.

‘Sustainability’ in this context is referring to the clean energy source used to process the raw material and an indication of the local materials used. It does not however refer to the nature by which the raw material is acquired: which requires consent from whomever owns/is responsible for the local materials/land of choice, and using them in consideration to social, environmental and economic impacts. The sand samples collected in this research represent an exact place in time: as beach nourishment may be occurring at some of these locations due to coastal erosion, documenting the ever-changing Scottish coastline. As seen in the ancient craft techniques and unlike the works of Kayser and Atelier NL, the creation of the *Sand Map of Scotland* was a collaboration between the geologically unique material samples, the local atmosphere and winds, the Sun slowly rotating in the sky and the craftspeople carefully positioning the

material and lens at the correct angles to optimise the light intensities concentrated through the lens to alter the target.

The samples altered through heat in this research study were co-created by nature and myself as the craftspeople: I felt directly engaged with my local environment and natural resources in a similar way to our ancient ancestors, despite the distance in time and technology.

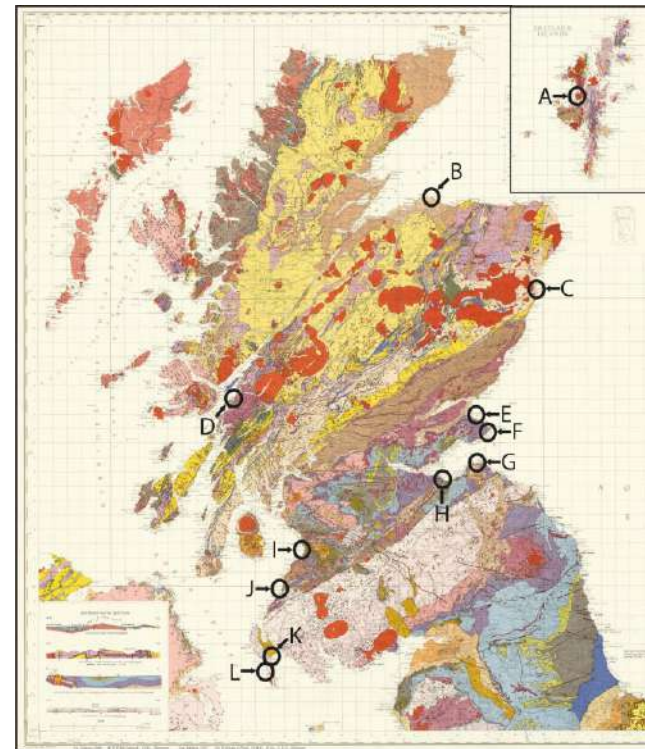


Figure 5: Geological Map of Scotland: superimposed locations of sand collection marked A-L correspond to Figure 4. Original map licensed by National Library of Scotland








Location: Material	Location: Material	Location: Material	Location: Material	Location: Material	Location: Material
A. Shetland: Sand 	Shetland: Glass 	B. Lossiemouth: Sand 	Lossiemouth: Glass 	C. Aberdeen: Sand 	Aberdeen: Glass 
D. Oban: Sand 	Oban: Glass 	E. St. Andrews: Sand 	St. Andrews: Glass 	F. Crail: Sand 	Crail: Glass 
G. North Berwick: Sand 	North Berwick: Glass 	H. Edinburgh: Sand 	Edinburgh: Glass 	I. Prestwick: Sand 	Prestwick: Glass 
J. Girvan: Sand 	Girvan: Glass 	K. Sandhead: Sand 	Sandhead: Glass 	L. Port Logan: Sand 	Port Logan: Glass 

Figure 4: Karen Westland, Sand Map of Scotland, Sand and sand glass (ruler dimensions in millimetres). Letters A-L correspond to the geographical locations indicated in Figure 5. Samples were exposed to Sun in Dundee for 5 minutes on the 25th April 2019 from 11:20am onward. Some stratus clouds were present.

SOLAR ENAMELLING

A potential hypothesis emerged after seeing the findings from the first experimental phase of the study: specifically, that solar concentration using the 40cm² Fresnel lens would be a sufficient heat source to 'solar enamel'. To test this, a series of samples were prepared indoors and transferred outside to enamel outdoors, each test building on the previous results. The solar enamel process deviates from kiln firing samples due to the directional nature of the heat source which may offer unique opportunities to raise the temperature of samples from different angles or to target local areas. The first enamel tests experimented with opaque and transparent enamels ground down from lump then wet-packed onto fine silver and copper substrates to understand how both the enamels and substrates would react in the directional heat. Samples were placed on a wire mesh tray - commonly used in traditional kiln enamelling - and the heat of the lens was introduced down onto one sample at a time. Image 1 in Figure 6 is a photograph of the successfully enamelled samples on both copper and silver substrates. It must be noted that the opaque cobalt blue (top right in image 1) was the most successful to bond to the substrates, yet the enamel partially changed from opaque to transparent in the process. The directional heat source caused the enamel to 'ball-up' with the heat, revealing the substrate before the metal then reached enamel temperatures where the enamel then sunk back down and bonded to the substrate. This can be seen with the opaque yellow (top left in image 1) samples which experienced difficulty in bonding the enamel and substrate due to this behaviour and oxides building on the substrate surface while exposed to the sunlight,

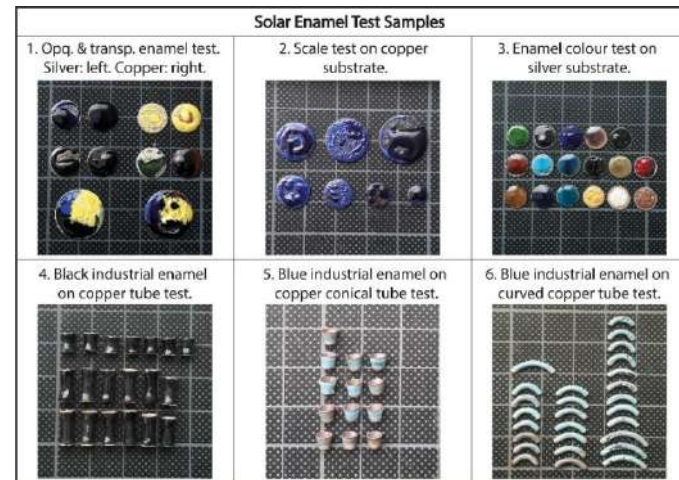


Figure 6: Karen Westland, Solar Enamel Samples, 2018-20. Enamel, copper, silver. (All samples photographed on a cm grid background for scale.) Samples were enamelled in UK summertime.

preventing the enamel from bonding to these areas once enamelling temperatures were met. The copper substrate samples appear to have enamelled all the colours more successfully than the fine silver substrate samples. The opaque black and transparent green did not appear to experience any significant changes. The overall aesthetic effect of these samples, particularly the larger mixed enamel samples were painterly: like the application of thick oil paint which may be of interest to enamellers interested in texture. The enamels were applied too thickly on the samples in this test and this was avoided in future experiments. Secondly, copper disks ranging from 6mm to 16mm with the opaque blue enamel from step one were solar enamelled to gauge what scale the lens could heat to

enamelling temperatures before thermal conductivity began to negatively affect the samples. The results indicated that the smallest samples enamelled most effectively and the samples over 10mm diameter experienced difficulty in reaching enamelling temperatures with the given lens and light levels in Scotland, see image 2 in Figure 6. Here it is clearer to see the blue enamel partially losing its opacity through the process. Again, there were issues around where the focus of the lens was directed to on the sample: the enamel migrated away from and did not want to bond to those areas. Thirdly, a series of 8mm samples on fine silver substrate trialled the colour spectrum in vitreous enamels. The experimental set-up was changed for these tests as they were conducted inside a greenhouse to prevent the interference of wind on the wet-packed then dried enamel. The Fresnel lens was mounted in a tilting frame to allow each sample to be held in tweezers and the underside of each sample was introduced to the focus with the intent to prevent the lens focus from creating an oxidised area on the substrate surface where the enamel could no longer bond, leading to an even enamel layer across the sample. This strategy was very effective overall with a small chance that the dried enamel would detach from the substrate whilst being held at a downward angle when the substrate was absorbing the solar heat. Image 3 in Figure 6 shows the enamelled samples with even coverage yet there were some issues with cracking, and holes in the enamel, possibly caused by bubbling from the substrate absorbing the heat. There is also some blackening of the red and brown enamels, likely due to over-firing. In the process of enamelling in this set-up, there are issues with visibility: the user must blindly judge when the sample has enamelled. This is different

to timing samples in a kiln which is set to a consistent even heat, as the intensity of the sun and the position of the sample in or near the focus is constantly changing leading to greater uncertainty. These results do however demonstrate the ability to solar enamel a range of enamel colours with reasonable success by directing the Sun's rays to the underside of the substrate to protect the enamel surface. It is likely with practice; this process could be refined further to achieve the consistent results desired. After the enamel tests on flat surfaces, industrial enamel was tested on copper tube because it is more wind-resistant and easier to apply to three dimensional forms than vitreous enamels. The tube shape was altered by punching the ends into conical forms using basic tools and bending lengths of tube over curved surfaces by hand. This phase of research was designed to explore what was possible with little tools available and minimal enamel skills to allow the solar enamel practice to be easily replicated by others and particularly relevant for use in communities with 'solar ovens' but no specialist craft equipment. The tube samples were then threaded onto the wires of an upturned wire mesh rack or through a length of binding wire: allowing extra wire either side to hold by hand safely outside of the lens focus. Images 4-6 in Figure 6 depict the results of solar enamelling industrial opaque black and blue enamel onto the millimetre-scale copper tubes. There were issues with the enamel migrating away from the focal point of the concentrated light, particularly on the curved samples where there was nowhere to target that was not covered in enamel, unlike the tapered samples where it was possible to aim the heat internally. The opaque blue enamel appeared to go semi-transparent if heated for too long which created an appealing effect revealing

the copper colour underneath, though inconsistent. Some of the larger samples had difficulty in reaching enamelling temperatures but overall, the industrial enamels bonded to the copper substrate more consistently than the vitreous enamels to both the copper and fine silver substrates. Lastly, some test samples were created to demonstrate how the solar enamelling process might be utilised in future work.



Figure 7: Karen Westland, Brooch with enamelled details, 2020. Fine silver, vitreous enamel. 7x7x1.5cm.

Small components may be solar enamelled before being integrated into larger jewellery items such as the brooch in Figure 7 where the solar enamelled hexagons are riveted to a parabolic silver form and will rotate as the wearer moves. The solar enamelled copper tube can be strung together like beads and combined with glass beads or decorative metal elements to add interest as seen in Figure 8. Overall, these experiments demonstrate that solar enamelling is possible and whilst there are environmental and technical challenges, the process creates unusual effects in the enamel, specifically altering the opacity, which offers new possibilities not presented by traditional kiln firing.



Figure 8: Karen Westland, Enamelled bead samples, 2019. Industrial enamelled copper, glass beads, brass and thread.

DISCUSSION & CONCLUSION

The aims of this experimental research were to investigate accessible scientific apparatus with the potential to aid craft practitioners interested in sustainability. The study outlined above has established that solar concentration can process materials in ways that potentially can contribute to sustainable development. A Fresnel lens at 40cm² was proven to be an accessible and affordable tool to heat and melt materials reaching temperatures over 1200°C using natural sunlight as the energy source. Building on the literature, this solar craft process was proven to melt sand, a variety of glass, metals and burn wood and fabric in a controlled manner. The outcomes of this project connect the lens user to a low-tech craft practice which decreases control, compared to a digitised operation, but increases the level of human intuition and connection with the process. The results from this research reintroduce ancient craft methods and build on the techniques discussed and developed in the works of Kayser (2018) and Jordan (2014), yet solar enamelling on metal is something not seen before, presenting a new area of practice to expand upon. It must be noted that solar enamelling is not likely to replace reliable kiln enamelling: history has already validated this. However, in the sunniest locations on the planet where solar ovens are already used, this practice could be adopted and automated; solar processing technologies could also be integrated into solar farms to process materials. Moreover, whilst this research explored solar craft in outdoor and greenhouse conditions in Scotland, it is also possible to create a safe indoor workspace designed for solar craft practices in a location with consistent, high intensity sunlight, such as Portugal:

where there is an indoor solar laser lab, to increase the reliability of this craft method.

It may be possible to develop a solar kiln or crucible, similar to the oven developed at Nottingham-Trent University (2019) to concentrate and retain higher temperatures for material processing purposes. An extensive review of current optics, solar concentration designs and solar-powered technologies would be required to engineer material processing technologies suited to the desired outcome. This study melted materials between 600°C and 1200°C which suggests that it may be easier to alter materials at lower melting points. Developing environmentally safe methods to recycle materials like aluminium and plastics through solar concentration may offer alternatives to a discipline which would benefit from innovative solutions that contribute to sustainable development. Further investigation into scientific apparatus in physics may reveal more areas which craftspeople can benefit from for developing innovative craft practices or can highlight the relevance of specific technologies outside their common use. Future research into this area from a craft perspective may act as a catalyst for innovation, diverse thinking and making connections between technologies and applications. The experiments conducted in this study experienced varied results due to the changing Scottish weather conditions and the level of control the user had over the process and design choices of samples. The inconsistent light levels prevented understanding whether differences in outcome were due to the craftsperson's skill or environmental conditions. Experiments adopted cause-and-effect methods to respond to the process with limited scientific

characterisation i.e., reliable evidence derived from quantifiable measurements. Future research may include characterising the process to better understand the relationship between ambient light intensities and the temperatures achieved through solar concentration, which would inform exactly what materials can be altered in which geographic locations or ambient light intensities. The Fresnel lens enables craftspeople to incorporate sand glass into their work, as enamelling kiln temperatures tend not to exceed 1100°C, making this a useful tool if heating materials at high temperatures is required on a small scale. The *Sand Map of Scotland* highlighted the beauty and usefulness of local materials and the narratives that form between material, place and maker/end user. Expanding this material research to trial using solar concentration to fire locally-sourced clays, preserving wood with 'shou sugi ban', a Japanese technique which chars wood surfaces with fire, and exploring solar lampwork may hold craft potential. From observations made during the solar enamelling stage, the process has the ability to deliberately melt different layers and types of enamels together in interesting ways due to the local application of heat which can impact the 'flow' of enamel. Exploring the transition from opaque to transparent, and creating different textures through firing enamels to wet sugar, orange peel or full gloss on a single surface could challenge the traditional enamel aesthetic and generally standardised process. Working with the migration of enamel to ones' advantage may also stimulate serendipitous and creative work, using the process's unpredictable characteristics. Investigating other heating methods; using the lens to prevent the directional nature of the solar heat source which impacts the solar enamel reliability may prove useful.

For example, creating a solar 'hot plate' for the plate to consistently remain in the lens focus at a relatively consistent temperature, where flat enamel samples can be placed on the plate for the heat to transfer into the samples in an even manner, enabling small batch production. This causes the heat to reach the metal substrate first, yet the samples are facing upward so the enamel will melt down and vitrify onto the substrate without risk of the enamel dropping off and oxides forming as significantly. This strategy may require a considerably larger Fresnel lens concentration area to gain enough heat. Three-dimensional enamel samples could be designed with tabs to direct the lens focus to transfer the heat to local areas where enamel is present and the tabs could be later removed if desired. The plique-a-jour technique may lend itself toward this approach as the metal frame could be used to focus the light on to then transfer the heat into the surrounding enamel 'window' areas.

To conclude, this research will likely appeal to a variety of audiences and whilst this phase has taken a playful, 'trial and error' craft approach to the technology, with scientific thinking adopted but little scientific characterisation recorded of the process; the results are hoped to capture the imagination of craftspeople interested in sustainable development, such as recycling materials using this clean energy source, in addition to practitioners keen to explore a low energy enamelling process as an alternative to traditional kiln enamelling. This study demonstrates a key benefit of interdisciplinary collaboration; utilising scientific tools for craft practice. Furthermore, this paper notes a trend where scientific technologies such as laser processing are changing the identity of craft

practice and the shift toward interdisciplinary and transdisciplinary collaboration to tackle the complex problems faced by society and the opportunities for innovation that are yet to be identified between the physics and craft disciplines specifically. This study has also successfully outlined a variety of ways that this approach can contribute to sustainable development through experimentation with optics in a craft context which offers scientists a new perspective for possible technological applications and provided craftspeople with a tool to thermally transmute materials. The findings from this study and literature studied advocate for research and practice beyond disciplinary boundaries, to form an alliance between applied physics and craft practice to advance technologies to benefit wider society.

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Northern Modernist Jewellery – A Museum Collecting Project

Author: *Sarah Rothwell*



ABSTRACT

In 2015 National Museums Scotland was awarded an Art Fund New Collecting Award to collect, research and disseminate jewellery designed and created in Britain and the Nordic States between 1945-1978. The project highlighted a legacy of transnational influences and traditions within Northern Europe, particularly shared cultural heritage, the influence of landscape, and methods of manufacture. During this period the influence of Scandinavian Modernism could be perceived across all aspects of design including jewellery, and work by designers and makers was, and is, collected widely both in Europe and the United States. However, the story differed in Britain where Modernist jewellery designers and makers were overlooked. During this period the acquisition policies of many collecting institutions and organisations tended to be swayed by conservative critics who rejected modernism in favour of more traditional styles. In recent years the design aesthetics and artistic achievements of these designers and makers have been reconsidered. With Modernist Jewellery introduced to the collecting and display practices of several UK institutions, including National Museums Scotland. This article aims to highlight the rationale behind the Northern Modernist Jewellery project, the transnational influences and divergences which informed the collecting aspect of the project, and the ways in which the resulting exhibition allowed further collecting to take place.

INTRODUCTION

The Modernist jewellery that emerged within post-war Northern Europe during the 1940s, 1950s and 1960s, was a result of artistic development and material experimentation, economic circumstance, and shared cultural heritage, as well as the affinity of designers to the natural environment. For many designers and makers who specialised in jewellery, financial hardships during and after the Second World War forced them to think more creatively. Whilst for others, the influence of their art school education drove them to regard their work as an art form. In turn, many designers and makers would go on to deliberately create work as a Modernist reaction to the displays of opulence which were the perceived norm within more traditional forms of jewellery making. These makers and manufacturers created jewels that spoke to a new generation of consumers and collectors who were looking for wearable pieces that would reflect their personality rather than their bank balance.

Until recently Modernist jewellery was under-researched and underdeveloped in terms of collecting, exhibitions and publications within the UK. The aim of the Art Fund New Collecting Award project was to collect, research, and disseminate pieces of Modernist jewellery that were designed and manufactured in Northern Europe between 1945-1978. The intention was to strengthen National Museum Scotland's jewellery collection by acquiring works of leading Modernist designers and makers and to build a collection that is indicative of the similarities and differences in styles and approaches in Britain and the Nordic countries. This project also brought to the fore

celebrated designers and makers who have been overlooked or forgotten in the UK. And builds a platform of knowledge upon which further collecting and academic research can be built.

THE COLLECTING PROJECT

National Museums Scotland (NMS) holds encyclopaedic collections encompassing archaeology, Scottish history and culture, world cultures, natural sciences, science and technology, and art and design. As part of those collections, we hold one of three nationally significant collections of modern and contemporary jewellery in Britain. Alongside the Victoria and Albert Museum (V&A) and the Middlesbrough Institute of Modern Art (MIMA), whose art-jewellery collection emphasizes the development of the New Jewellery movement from the 1970s onwards. NMS's holdings include British Arts and Crafts and Art Nouveau jewellery, and Scottish and Celtic Revival jewellery designed by artists such as Phoebe Anna Traquair, Jessie M. King and Archibald Knox. Perhaps the strongest aspect of the jewellery collection comprises works created during the British and European Studio and Art Jewellery movements of the 1960s onwards. Including important works by artists such as Gerda Flockinger, Wendy Ramshaw, David Watkins, and David Poston. Before the initiation of the project, only 20 pieces of jewellery from the Modernist period were held by NMS. This was, however, greatly supplemented with a donation of Georg Jensen jewels that was gifted in 2015. A particular aim of the project was to create a dynamic dialogue between Modernist works and the existing Arts & Crafts, Contemporary Craft, and New Jewellery

collections, thus facilitating a deeper understanding of the stylistic and material connections and influences between these jewellery movements.

The achievement of the wider Scandinavian design movement and its impact upon jewellery design during this period can be attributed to the fact that there had been a continual mutual influence between the Nordic states over the centuries (Wendt 1961). And that their original approach to Modernist design was due to the Nordic states being cut off from imports of foreign materials and influence. Thus, their artists, designers, makers and manufacturers had to look towards new impulses within their own borders to develop independently artistically and industrially (Beer 1975). The result was that a combination of the artistic, architectural and design movements of Functionalism, Constructivism, Abstract Expressionism, coupled with material exploration and use of non-precious stones, became key themes within Nordic Modernist jewellery design from the late 1940s onwards. With particular design styles that over time, have become synonymous with each country. Examples of this include the pared-back abstract and biomorphic forms of silver jewels by Danish designers, such as Henning Koppel and others for the manufacturer Georg Jensen. In Finland, a reverence to the natural environment influenced the form, texture and colour of their Modernist jewellery, as seen within the jewels designed by Tapio Wirkkala for his family and then commercially, and Björn Weckström for Lapponia. Norwegian designers and makers such as Else & Paul Hughes and Tone Vigeland were strongly influenced by their cultural heritage and the archaeological artefacts of the nation. Were as in Sweden, jewellery took on a more artistic and

sculptural form, with work by Sigurd Persson and Vivianna Torun Bülow-Hübe receiving international attention. In Britain, a reserved and conservative attitude towards Modernism held within the jewellery sector during the initial post-war period stagnated development overall. There were however parallels between the two regions that initially saw designers looking back to what had been germinating in the 1930s creating abstract biomorphic forms. However, Britain came into her own when a generation of makers such as Andrew Grima, John Donald and Gerda Flöckinger started to experiment with processes, materials, texture and use of non-precious stones. Accordingly, the final ambition of the project was to acquire jewels that would reflect and represent the key design developments from each region.

CREATING A NORTHERN MODERNIST JEWELLERY COLLECTION

The gap identified within the NMS collection was not an uncommon one, as though UK museums had embraced most post-war design and studio movements, Modernist jewellery had been somewhat eclipsed by the New Jewellery movement of the 1960s. One rationale for this oversight is that in the past Museums considered the present too close to see objectively the significance or value of something that could be revered in the future. Another is that Britain in the immediate post-war period was ‘...thought of by some as a puritan backwater, by others as an industrial hell...’ (Hughes 1968). An idea that came into being partly due to a lack of innovation within the jewellery industry, and a climate of insularity and conservatism within the field, that drew on experience over new

talent and creative thought (Rothwell 2020). British jewellery manufacture at this time was constrained by a high purchase tax and was primarily driven to create pieces similar in design to the commercial model in France for export. It is noted in the 1950 publication *Contemporary Jewellery and Silver Design* that ‘[British] modern gem-set piece is influenced considerably by dress fashions, influenced also by economics and the client’s taste, and influenced further by the practical problems of labour and material which confront the working jeweller’ (Bradford 1950).

This was reinforced by UK critics of the period who did not appreciate British Modernist jewellery or looked to understand the influence of Scandinavian Modernism on British work. In 1976 curator, author and jewellery historian Ralph Turner stated that ‘creative jewellery in Britain during these years (1945-1960) was practically non-existent, though he did concede that makers from the Nordic states did make a lasting impression on design during the forties and fifties (Turner 1976). Few publications concerning this subject exist from this period or to date, to counteract such a statement. And though there was the 1961 *International Exhibition of Modern Jewellery* held at Goldsmiths’ Hall, London that platformed itself as “an art exhibition of a high order, intended to raise the standing of jewellery so that it becomes a valid interest both for discerning patrons and for leading artists of all sorts” (Hughes 1968), there were even fewer major exhibitions which celebrated jewellery. Reflecting the lack of critical consideration or study of modernist jewellery in the UK. Thus, it becomes easier to understand why Museums such as NMS, would, and

have been reluctant to engage with collecting jewels from this period.

ARTISTIC INFLUENCE AND ABSTRACT BIOMORPHISM

The main design aesthetic that emerged in the late 1940s and the early 1950s was of simplified geometric and sculptural biomorphic forms, which has been considered as ‘a redefinition of the concept of decoration within this field through the transference of the asymmetrical figures of abstract painting’ (Thage 1990). This reference to abstract expressionism was represented either as a repetitive motif or a continued fluid shape, similarly to the forms and shapes observed within the work of Alexander Calder and Hans Arp - who both also designed jewellery, alongside Fernand Léger and László Moholy-Nagy. Their ideals of modernism permeated across the fine, decorative arts and design on an international scale.

Normally executed in highly polished silver, with little ornamentation other than uncut gemstones or enamel, the most recognisable exponents of this style were the artists, designers and manufacturers of Denmark. Henning Koppel, designing for manufacturer Georg Jensen, became internationally revered for his innovative modernist designs reflecting his training in sculpture (Lassen 1982). His work was particularly inspired by the sinuous sculpture of artists such as Hans Arp and Constantin Brancusi (Thage 1990). The above-mentioned donation of jewellery to NMS in 2015 was particularly strong in work by Koppel for Georg Jensen and important addition to the museum’s collections. As such, NMS looked to focus on acquiring works by

other makers and designers to reflect the influence of this design development.

The work of Norwegian designer Grete Prytz Kittelsen is celebrated for her unique and brightly-coloured abstract biomorphism that was influenced by artists as diverse as Koppel, Piet Mondrian and Alexander Calder (Bjellås Gilje 2008). Her earliest works, a series of brooches from the 1940s with their abstract rhythms and kinetic energy, can be seen as a homage to Calder’s mobiles (Bjellås Gilje 2008). However, many of her series were not commercially viable at the time, due to Norway’s own conservatism when it came to jewellery design in the post-war period. These pieces are now highly sought after due to their rarity, originality, as well as being part of the earliest developments of Modernist Jewellery in the post-war period. This necklace by Kittelsen (Fig.1), designed for the 1952 Swedish Society of Industrial Design exhibition with its interconnecting seed-like pods, bears a striking parallel to Koppel’s biomorphic jewellery. And clearly reflects the abstract expressionist forms that were prevalent within artistic and design practice during this period. As such, its acquisition invites discussion on the transference of artistic thought between the nations, and the influence of Koppel in Modernist jewellery design.

In Britain, the accounts of contemporary commentators of the day, such as Martin Farr, clearly indicate Koppel’s biomorphic design aesthetic was admired and was one of the few examples of modern jewellery that were available within Britain in the early 1950s. Farr



Fig. 1: Articulated necklace silver and enamel, designed by Grete Prytz Kittelsen (1917-2010) in 1952, for J Tolstrup, Norway, (K.2016.94). © Grete Prytz Kittelsen; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

also noted that, in comparison, ‘British firms have not even begun to use metals in an adventurous way or to explore the possibilities of unadorned, interrelated shape’ (Farr 1955). This lack of innovation within the British jewellery industry before the late 1950s was often caused by economic constraints (Bradford, 1950), but also a climate of insularity within the sector meant that manufacturers chose experience over originality (Hinks 1983). In addition, as London was seen as the seat of innovation and influence in Britain, any makers or designers who may have been creating jewels in the emerging Scandinavian or biomorphic Modernist aesthetic in the late 1940s and 1950s, have been

forgotten or remain unrecorded. This may well have been due to these individuals working outside of London, or, if they were female, possibly moved away from jewellery design to raise a family, as social conventions of the day dictated (Rothwell 2020). As a result, we find more discussion on makers and designers within the craft of silversmithing who were influenced by the aesthetic, than within jewellery (Atterbury & Benjamin 2015). As such it was important for NMS to acquire examples that would reclaim and reposition these early British adopters of the aesthetic.



Fig. 2: Necklace & earrings, silver, Anthony Hawksley (1921-1991), London, England, 1958, (K.2016.177&178). © Anthony Hawksley; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

One forgotten voice within the field of British Modernist jewellery is silversmith Anthony Hawksley, whose modernist Scandinavian style has a similarity to the biomorphic geometry of Danish makers, as seen in the necklace designed in the mid-1950s (Fig. 2). Despite being featured within the Festival of Britain Goldsmith Hall display, and exhibiting at Ewan Phillips Gallery in London, Hawksley's work has largely been overlooked and unrecorded within the development of the field, due to the fact that he based himself outside of the capital and was thus outside the prevailing discourse.

This early influence of modernism on British jewellers can also be seen in the brooch designed for the British jeweller George Tarratt Ltd of Leicester. Unable to secure a contract with Georg Jensen to sell their jewels, they commissioned young designers whose early practice displayed the marked influence of Scandinavian Modernist design to create a range that would rival Jensen's output (Atterbury & Benjamin 2015). The first collection designed for the firm by Geoffrey Bellamy adhered more to the functionalist style of Jensen's 1930s output. However, their second collection by Ernest Blyth from the 1960s has a striking resemblance to that of Koppel's designs for Jensen and other Danish jewellers of the period, as seen in the brooch acquired by NMS (Fig 3). Due to the nature of the commission, this brooch creates a discussion on plagiarism, alongside the lasting influence of abstract biomorphic forms and dominance of Georg Jensen's designers in Modernist jewellery.

Barbara Cartlidge a prominent figure within the art jewellery scene in Britain, created jewels in the late



Fig. 3: Brooch, gold, designed by Ernest A. Blyth (1939 -1989), c.1960's, for Ivan Tarratt, Leicester, (K.2016.7). © Ernest A. Blyth; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

1950s and early 1960s which were inspired by Scandinavian Modernist jewellery design. Openly stating that she too was influenced by the designers of Georg Jensen, but also Swedish designer and maker Vivianna Torun Bülow-Hübe, whose work she had encountered on holiday in France in 1957 (Chadour-Sampson & Hosegood 2016). Torun, a pioneer in her home country, became the first female silversmith in Sweden to establish her own studio in 1951 (Fiell 2002). The jewels she created share many similarities to the work produced by American Modernist jewellers of the early 1940s, who incorporated found objects and had an abstract expressionist feel to them (Schon 2008). Her material choices were, as with others during this period, in part due to the ongoing post-war economic restrictions that affected everyone including neutral Sweden. But also, it was her own creative ideology that

drew her to work with non-precious materials as she considered displays of wealth vulgar, particularly hating the idea of designing for rich women who treated jewellery “as a sign of their husbands’ fortunes”. Instead, she looked to celebrate the female form as sculpture, creating pieces that had a kinship to modernist sculpture (Skawonius 1961). This marriage of influences can be seen in the expressionistic sculptural line and elements of Cartlidge’s bracelet set with minimally polished amethysts (Fig. 4). And provided the project a platform in which to demonstrate the divergences away from abstract biomorphic forms that were happening throughout Northern Europe by the mid-1950s.



Fig. 4: Bracelet, silver, amethysts, Barbara Cartlidge (1922-2017), London, c.1968, (K.2016.141). © Barbara Cartlidge; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

Although Torun, is as explained, an important figure within the discussion of Modernist Jewellery developments. As NMS already held an example of

Torun’s work, the project, therefore, looked to represent another important voice in this sculptural divergence, the Swedish designer and goldsmith Sigurd Persson. Known for his individual style and elegant sculptural forms Persson, like Torun, had achieved international recognition by the 1960s. This was thanks in part to a series of jewels he devised for exhibition around the themes of the hand, arm, ear and throat.

His initial exhibition *77 Ring'* saw Persson embrace a Constructivist ethos, creating high-standing rings with large, faceted gemstones. A follow-up exhibition was created for Liberty's in London in 1961 (Persson 1980), the same year as Graham Hughes influential *International Exhibition of Modern Jewellery* in which he was also represented. The bangle acquired by the project with its sprays of tourmalines and amethysts jutting out on slender stems was created for the 1963 exhibition *7 x 7 Bracelets* and sits interestingly along the bone of the arm, so the sprays do not sprout from the wrist itself but to the side (Fig.5).

The pieces which Persson created were novel in the way that they highlighted different parts of the body, accentuating the shape of the arm or the nape of the neck. These jewels were wholly different from the abstract biomorphic style of his Danish counterparts, making him an important individual and body of work to represent in the project’s exploration of Northern Modernist jewellery design.



Fig. 5: Bangle, 18ct gold with faceted green tourmalines and amethysts, designed by Sigurd Persson (1914–2003) for Nordiska Kompaniet Juveler (Nordic Company jewellers), 1963, (K.2016.6). © Sigurd Persson; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

HERITAGE AND LAND

The influence of the cultural and decorative heritage of both their own nations and others was another prominent subject area in the development of Modernist jewellery design in Northern Europe and Britain. Norway, in particular, became synonymous with this aesthetic producing jewels that referenced Norse ethnographic and archaeological decorative arts (Beer 1975). One of the main Norwegian protagonists celebrated for pushing the boundaries of tradition is the Norwegian jeweller and silversmith Tone Vigeland

(Thue 1995). Vigeland was part of an emerging generation in the 1950s who created pieces that came to epitomise Norwegian Modernist Jewellery design, that played on their Norse heritage incorporating stylised Viking motifs such as axe heads, and abstracted geometric designs, and often incorporating enamelled decoration. Her earliest range of jewels to be put into production were developed whilst still a student in the late 1950s. And reflected a Modernist aesthetic that combined good form, clean surfaces and sensitivity towards materials (Thue 1995). The brooch (Fig. 6) acquired for the project demonstrates how Vigeland explored this duality between the past and the present, it could easily be an artefact or a modern work.



Fig. 6: Brooch, silver, designed by Tone Vigeland (b.1938), for PLUS Applied Arts, Fredrikstad in 1958, manufactured by Norway Silver Designs, Norway, (K.2016.104). © Tone Vigeland; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

In addition, the acquisition also allowed the Museums to represent the development of her practice, when compared to a necklace of silver, steel and gold constructed like chainmail from 1983 that was already held in the collection.

Grete Prytz Kittelsen, though regarded more for her abstract biomorphic jewels, also provided a modern interpretation of a Norwegian traditional jewel. Her family firm J. Tolstrup had an established reputation for producing traditional silver filigree brooches worn with Norwegian national costume. The 'Med punkter' (With dots) series was created as a set of modern reinterpretations of these, with concentric circles stamped out of the sheet metal as an abstracted interpretation of foliage. These designs, including bangles, were originally developed as a rough draft for Georg Jensen's Nordic Competition in 1953 and would become Kittelsen's bestselling series for the firm (Bjellås 2008). The 'Med Punkter' brooch was acquired after the necklace discussed earlier in this article, as it was important to represent one of the most recognisable and commercial examples of her oeuvre (Fig. 7).

Elsewhere, a reverence to the land and the environment has been a part of Finnish identity for generations. Tapio Wirkkala is internationally celebrated for the way he embraced traditional materials and techniques to capture the spirit, colours and textures of the Finnish landscape (Dawson 2016).



Fig. 7: Med punkter (With Dots) brooch, silver, designed by Grete Prytz Kittelsen (1917-2010) in 1953 for J Tolstrup, Norway, (K.2016.103). © Grete Prytz Kittelsen; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

His early jewellery designs represented natural elements or mythological characters from the Finnish national epic, the Kalevala. Later pieces would be characterized by delicate metal forms and geometric patterns, similar to his sculpture and industrial design (Periainen 1985). As early iterations of Wirkkala's jewellery canon do not often appear on



Fig. 8: Pendant, Hopeakuu (Silver Moon), sterling silver, designed by Tapio Wirkkala (1915 - 1985), in 1970, manufactured by Nils Westerback, Helsinki, for Kultakeskus Oy, Finland, (K.2016.102). © Tapio Wirkkala © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

the art market, the project acquired an example of later Modernist design. Hopeakuu (Silver moon) (Fig. 8), not only exemplifies how Wirkkala married both his love of nature and geometry into his oeuvre. It is also important, as this series was first seen in the UK in a solo exhibition at Goldsmith's Hall in 1972, only two years after it was designed (Poutasuo 2016). Demonstrating that by the 1970s, examples of Nordic Modernist jewellery were reaching the UK sooner than in previous decades as highlighted by Farr.

Though there had been evidence within Finnish decorative arts of textured naturalism since the latter part of the 1940s. Due to a preference for a Functionalist approach to jewellery design that lasted into the 1960s (Fagerström 2012), this form of design expression in fact emerged elsewhere. It was Reginald Hill, silversmith and design adviser for the Design and Research Council, that first observed a development within British silversmithing and jewellery in the late 1940s. Stating that it was 'characteristic of Scandinavian designers that they concentrate, often exclusively, on emphasising a few basic structural lines. On the other hand, designers in the Latin countries are usually more interested in rich ornamentation, so that the structural lines are often submerged. The distinguishing quality of British design is that it harmonises elements of both these styles into an entirely distinctive national mien' (Bradford 1950). The style in question was characterised by its highly textural sculptural metalwork, incorporating textures of bark, shell, and stone and often cast directly from these natural elements, that would go on to be executed mainly in gold, and incorporating large uncut stones. This style was recognisably different to the clean lines and geometric biomorphic jewels that are linked to Scandinavian Modernist design. And was, as the jewellery historian Peter Hinks wrote, 'influenced by fundamental changes in the urban environment, that exerted a deep influence on jewellery design that caused 'a dramatic tilt of the balance away from form and towards texture' here in Britain (Hinks 1983). Andrew Grima was a leading name within this new British Modernist aesthetic, and reputedly one of the first to find favour with British consumers from the mid-1950s. Although not acquired through the award,

NMS did obtain an early suite by Grima as an example of the type of jewellery the museum was hoping to acquire (Fig. 9).

One Finnish jewellery designer whose designs parallel the textured metalwork of British modernist jewellery design in the 1960s is Björn Weckström. Initially, following the predominant minimalist Scandinavian style that was linked to the Finnish taste for Functionalism. He moved towards a more experimental form of expression at the start of the 1960s, which drew inspiration from the landscape and the shape and matte surface of gold nuggets found in Finnish Lapland. (Poutasuo 2016). Weckström considered his jewels as equal to other artistic outputs, and through the support of fellow goldsmith Pekka Anttila, he created a range of pieces that included the 'Flowering Wall' design (Fig. 10). Notably, this design won the Grand Prix at the 1965 *International Jewelry Contest* in Rio de Janeiro, bringing Weckström and the company international recognition (Beer 1975). When compared with the piece by Grima, there is a clear similarity of character in the use of processes, and desire to emulate natural forms and textures. The comparison between Grima and Weckström's work opens up a dialogue on whether British jewellery design was by the early 1960s, having an impact on Nordic design. However, as Hinks asserts, it is more likely that the two designers were responding to their own environments independently of other design influences. And that due to the aforementioned lack of publications and exhibitions on the subject in which British Modernist jewellery was promoted, it is harder to ascertain what influence if any British designers had on their Nordic counterparts.



Fig. 9: Bracelet & ring, 18ct Gold, tourmaline, designed by Andrew Grima (1921 - 2007) for Hooper Bolton, c.1963, London, (K.2015.33.1&2). © Estate of Andrew Grima / Hooper Bolton; Image © National Museums Scotland. Presented by the Art Fund.



Fig. 10: 'Flowering Wall' necklace and earrings, Gold, tourmaline, designed by Björn Weckström (b. 1935) for Lapponia in 1965, Finland, (K.2016.4&5). © Björn Weckström; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

London based American jeweller Charles de Temple, was part of this fraternity of makers who were inspired by nature and abstract modernist art and pioneered methods of melting, reforming, and texturing gold into abstract forms. Highly influential during the 1960s and 1970s, de Temple challenged traditional preconceptions of how jewellery should look, favouring abstract, unique pieces, designed for the modern woman. Stating he was influenced to create something unique, by drawing on ideas from the past (Hinks 1983). His organic sculptural pieces have a similar aesthetic characteristic to the work of both Grima and Weckström in their exploration of form and texture. The necklace (Fig. 11) and bracelet (not illustrated) acquired for the project, are from an early series that de

Temple developed when he was experimenting to find his own signature style. And were known as 'nervous jewels' due to the prickly sculptural construction created from two-coloured gold wires (Hinks 1983). Due to economic restrictions and high taxation on luxury goods, makers in both the Nordic States and Britain became more creative in their use of material and experimental processes in the post-war period (Hughes 1968). One result of this was the use of gold and silver wire to create sculptural textured forms, as it was a cheaper alternative to the ingots that were required to create the organic sculptural pieces (Hinks 1983). Thus, the acquisition of de Temple's suite allowed the project to demonstrate not only the divergences within textural naturalism beyond the recognised style associated with Grima and Weckström. But also, the level of excellence that was developed with limited processes and materials during this period.

These pieces, and others that were acquired as part of the project, represent the key influences and fluidity in Modernist jewellery design that existed between Nordic and Britain Modernist jewellery.



Fig. 11: Necklace, 18ct gold, white gold, by Charles de Temple (b. 1929), London, England, c 1969-75, (K.2016.12). © Charles de Temple; Image © National Museums Scotland. Presented by the Art Fund as part of the Art Fund New Collecting Award.

EXHIBITING THE COLLECTION

To share knowledge and engage specialists and general audiences with the collection, and this fascinating period of jewellery history, an exhibition around the project opened at the National Museums of Scotland in

December 2017, which ran through to the end of April 2018. The premise of the display was to not only highlight the pieces collected as part of the Award but create a discussion on the divergences and similarities in style and influence that arose during the post-war period within the Nordic States and Britain. But to also cultivate in our visitors an appreciation for the work of individual designers and makers in Modernist jewellery design, both in Britain and the Nordic states. Through interpretation panels, a synopsis of the research was discussed alongside visual representations, where possible, of the designers and makers taken during the period. The text looked to explain how experimentation with processes and materials, artistic influence, as well as the economic restrictions on luxury goods, changes in social conventions, and the emergence of a younger more economically independent generation, allowed for the creation of the pieces collected. And that all these factors played a part in challenging the perception and creation of jewellery in the post-war period.

In addition to the works collected, the display featured jewellery from across the wider collection, as well as significant loans from a private collector and the Scottish artist-jeweller Dorothy Hogg. The inclusion of the latter's neckpiece (Fig.12) with its aesthetic similarities to Nordic Modernist Jewellery, showcased the continuing influence of Modernist thought in jewellery design that persisted well into the late 1960s and early 1970s. In an interview with Hogg for the project, she described how the idea for the necklace grew out of a desire to create a jewel that reacted against the work of noted designers of the day like Grima and their textured naturalism. Harnessing the high reflectivity of silver together with an innovative

articulation system that responds to subtle body movements, the piece explores the body in a similar way to the work of Persson. Although Hogg was drawn to designers such as the Danish Nanna Ditzel whose own work had explored these ideas in silver in the late 1940s and 1950s for Georg Jensen, Hogg did not seek to mimic as did Blyth's commission. Instead, she was inspired by abstract expressionist art, the capturing of natural light and the ancient Egyptian cultural artefacts she had encountered in UK museums. By placing this jewel as a concluding feature in the exhibition, the project clearly demonstrated that the transference of ideas and influences which flowed between the Nordic states and Britain bound us together through our design principles.



Fig. 12: Articulated necklace, silver, labradorite, by Dorothy Hogg (b. 1945), 1969-70, London, England, (K.2019.68). © Prof. Dorothy Hogg, MBE; Image © National Museums Scotland. Presented by the Art Fund.

CONCLUSION

Writing in 1963, Graham Hughes considered that ‘the most distinguished of these (Modernist) jewels are very close to modern painting or sculpture’ (Hughes 1963). This statement, at a time when jewellery was subject to being viewed as mere tokens of wealth rather than an artistic endeavour, aimed to stimulate interest in the field. Over 50 years on, this project looked to reinvestigate the artistic developments in Nordic and British Modernist jewellery design. And through the acquisition of ‘distinguished jewels’, counteract the view that nothing of merit was created. Whilst also establishing contemporary recognition for those associated with this design movement in the field of jewellery. The success of this aim was beholden to the availability of jewels on the art market during the project. Opportunities arose through auctions, gallerists and private connections. Some could not be pursued due to prohibitive valuations, whereas others were gained through the generosity of the vendors. As such, the success of the project is not only measured in the 18 jewels, by 12 designers and makers that were acquired that has enriched the collection. But also, the subsequent acquisitions and donations of Modernist jewels that have followed, such as Dorothy Hogg’s Articulated necklace.

In turn, it was thanks to the Art Fund New Collecting Award finding value in this project, that I was, as a then assistant curator, given the opportunity to develop my own research profile and acquire works for the national collection. Something that isn’t often offered to those working at this level within the sector. And required the cultivation of a network of professionals to aid and

guide me, which included key dealers, curators, collectors and experts within the field of jewellery, not only within the UK but also the Nordic States. Developing this network was a rich and meaningful experience, that involved discussing, viewing and handling jewels from across this period. Allowing me to develop an aesthetic, tangible and tacit knowledge of the subject. And in turn, I learnt that through the building and maintenance of such relationships, networks can further promote a museum's collection to a wider audience of peers, potential future benefactors and donors than a physical exhibition or display rarely can. And it is through this network, the Museum continues to participate in international discussions, exhibitions and publications on the influence and development of British and Nordic Modernist jewellery design.

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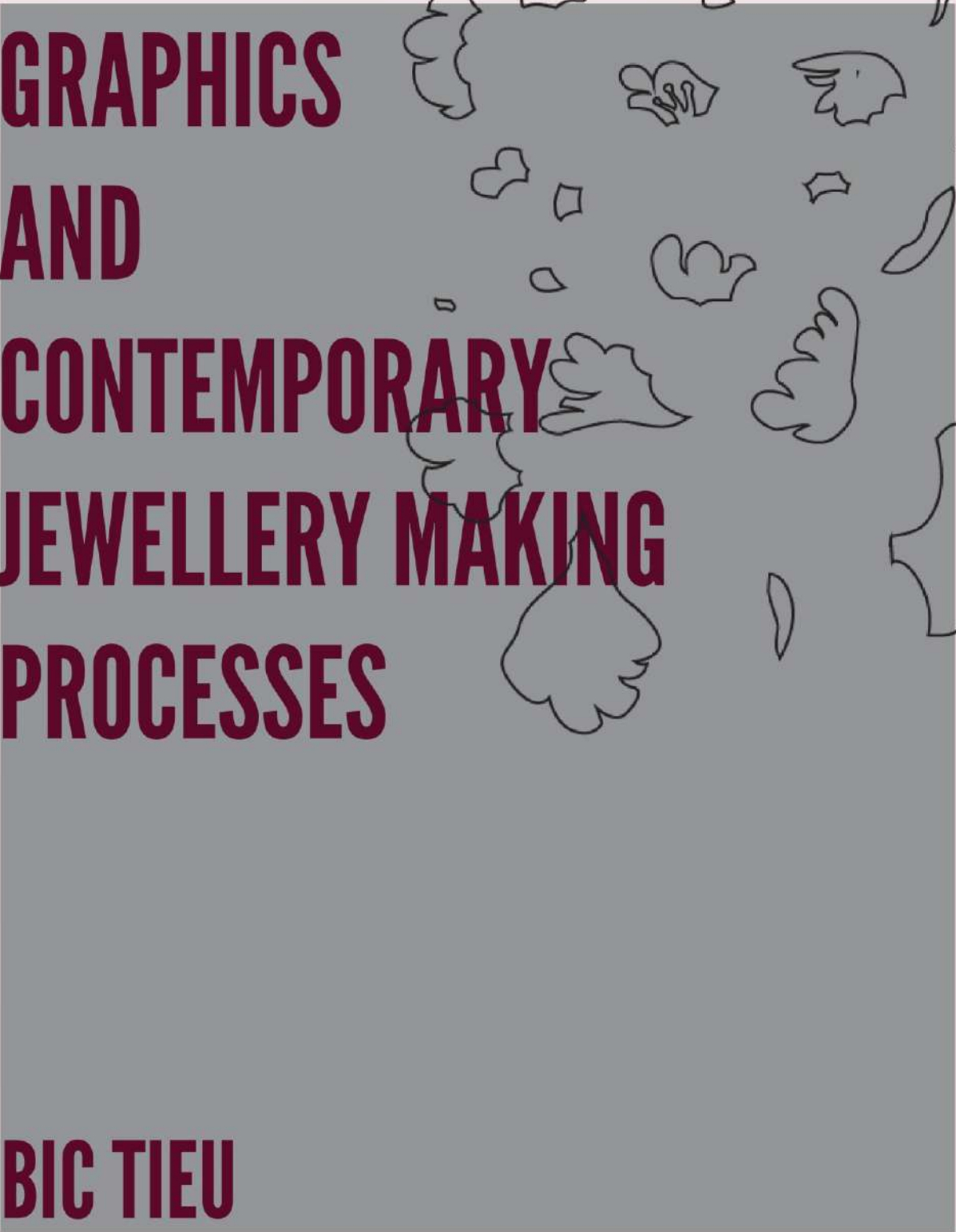
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Graphics and Contemporary Jewellery Making Processes

Author: *Bic Tieu*



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GRAPHICS AND CONTEMPORARY JEWELLERY MAKING PROCESSES

BIC TIEU

Abstract

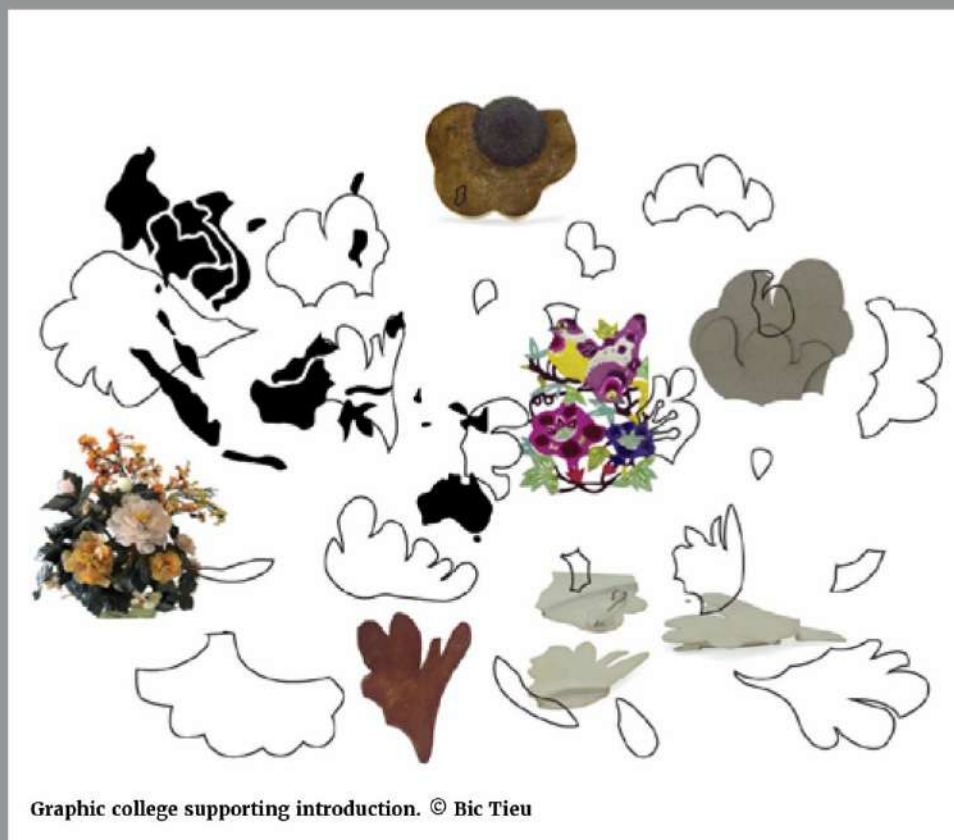
Graphics and Contemporary Jewellery Making Processes is presented as a visual textual paper that aims to show how the integration of graphics can speak about personal narratives of migration and identity in contemporary jewellery processes. This investigation begins by drawing on my personal narratives of living between the Eastern and Western spheres. I highlight the significance of floral symbolism by examining my cultural identity as a Southeast Asian-Australian and the visual culture practiced in the home. This background leads to the application of the peony flower as a graphic to critically engage with concepts of identity and migration. The memory of place, cultures and immigrational route are revealed through these assimilations. Merging graphic design processes to contemporary jewellery craft methods can lead to innovative approaches in design making and meanings.

Introduction

This visual textual paper will focus on applications of graphic as a visual tool to broaden themes on personal narratives, migration and identity in contemporary jewellery processes. These ideas are demonstrated through the intersections of the disciplines of using graphics to contemporary jewellery. Traditional art methods, gold and silversmithing techniques and digital technology are experimented by assimilating visual graphic approaches. By presenting this context visually, I can narrate perspective on thinking about migration within the parameters of contemporary jewellery and object practice through the development of three bodies of works.

1. Bi-Cultural Floras
2. Moonlight Sea Series
3. Floral Maps

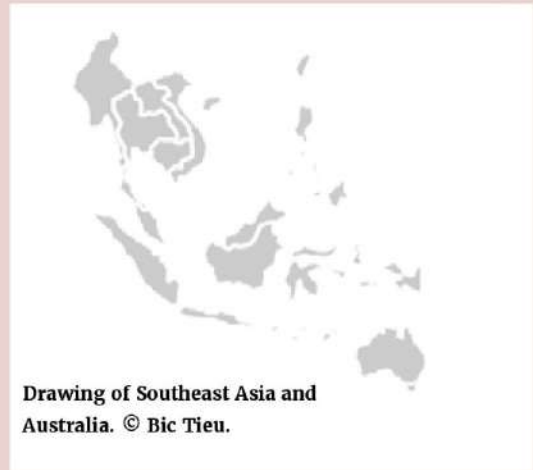
Engaging with graphics allow for alternate representations of ideas. By referring to personal objects and places, ideas of cultural hybridity and identity reveal synergies. Graphics can mediate memory connecting place, cultures and immigrational route. By integrating graphic applications, my research practice produces jewellery objects that serve as a conduit for thinking about cross-cultural references.



Graphic collage supporting introduction. © Bic Tieu

Personal Narratives

“Objects bought from the homeland can increase a sense of a continuous transnational self.”



My design practice is influenced by my personal experiences of living between the Eastern and Western cultural spheres, as a Southeast Asian-Australian women connecting to my Chinese, Vietnamese, and Australian identities. Living cross-culturally for me means speaking multiple languages, connecting to multiple customs, environments, and unconscious influences from the constant exchange of local and global visual culture. A significant confluence is my domestic environment, connecting with cultural artifacts in the home, craft objects, photographs and other tangible subjects that links me to my heritage.

The anthropologist, Maruška Svašek in her book, studies the impact of culture artifacts and migration. In her book, ‘Moving Subjects Moving Objects’, the author shows the importance of emotional value between the mobility of people, material culture and images. The studies in Svašek’s research shows how ‘objects

bought from the homeland can increase a sense of a continuous transnational self’. (Svašek 2012, p. 17) These ideas explored by Svašek mirrored my translation and material mediation of objects from my culture. I believe this is increasingly becoming more important to identities like my own as it opens different interpretations and representations in more complex communities.

The complexity of living in these spaces, within eastern archetypes superimposed with western concepts also produces an in-betweenness. This reference is informed by Homi Bhabha, who is known for his critical theory of third space identity. Third space identity is neither relating to the original space or the occupied space but a hybrid of both, Bhabha explains in an interview ‘it bears the traces of those feelings and practices which inform it, just like a translation’. (Rutherford n.d., p. 211)

In addition to this, I also connect with cultural historian, Nikos Papastergiadis scholarship on art representations and identity. Papastergiadis argues,

The boundaries of an authentic cultural identity are no longer framed according to neat and exclusive territorial coordinates. Nor can we assume that cultural identities are locked in rigid time-frames. Cultural identities are also formed by the ambivalent desires for mobility and attachment and shaped by the contradictory forces of local traditions and global culture. (Papastergiadis 2006, p. 6)

Living in the home of a migrant family, my earliest memories were of disparate foreign objects. These included lacquer ware, stoneware, paper cuttings and paper text amulets.



Personal Collection: Chinese Paper Cutting, watercolour on tissue paper.

The visual language of these objects represented the time and place of another culture. Papastergiadis offers strategies on how to think about these issues. He states,

Everyone who enters the context of contemporary art is already part of the complex process of intervention and feedback that now cuts across the world. This duality is neither experienced as an irreconcilable opposition nor as a loss of authenticity. However, the key task is not to simply parade more signs of difference but to introduce different ways of being in the world. (Papastergiadis 2006, pp. 6–7)

Observing Papastergiadis point, on how I represent my 'being in the world' is through developing a visual language using graphics as a strategy to converse with my cultural identity.



Personal Objects: Vietnamese lacquer ornaments, stoneware containers, Chinese paper cutting and text amulets. © Bic Tieu.

Graphic and Floral Synergies

Assimilating graphic into the practice of contemporary craft processes, creates innovative opportunities and approaches to making and meaning. In its most basic foundation, graphic design is a visual tool to communicate ideas. However as a disciplinary field in the context of research, practice and epistemic, academic and graphic designer Dr Rebecca Green in her thesis argues that the graphic design domain in the academic field is relatively new. (Green 2015, p. 26) I apply graphics to nuance themes of migration and further provide a design language for jewellery making.

It is also important to note that my contemporary jewellery practice is informed by a western framework. Authors Damien Skinner and Kevin Murray in their book, *Place and Adornment, A History of Contemporary Jewellery in Australia and New Zealand* outlines this history in context between the period of colonisation and European impact. Their final chapter gives a sense of the contemporary jewellery scene in Australia in where I locate my practice and this is well captured by Skinner and Murray,

It is striking that at a time of greater global interconnection we see in Australasia a revival of jewellery as a language to express where one is in the world. But given the critique of provincialism, which has been especially articulated in Australia, jewellers seeking an expression of place have to confront many challenges on both sides of the Tasman. How might Australian jewellers develop a local identity that is not prey to stereotypes? What is a sense of place without the prefabricated images of flora or tourist emblems?

(Skinner & Murray 2014, p. 198)

Contemporary Australian jewellers whose practice are strongly connected with place and nature have continuously inspired my early practice for their use of endemic botanical interpretations. These artists include Julie Blyfield and Marian Hosking. Their practice have inspired the use of floral imagery in my work.



Season Series (brooch), sterling silver, veneer timber, stainless steel, 2003. © Bic Tieu.

A significant component of the project is drawing upon my own multiple cultural identities. I was drawn to the visual cultural motifs around me and they serve as ways of connecting to my cultural identity. Growing up, I was exposed to various cultural events through community and participation in traditional festivals, visiting Buddhist temples and the weekly shop to Cabramatta with my parents.

Cabramatta is a city in the south-western suburb of Sydney. It has one of the largest enclaves of Asian communities in New South Wales. Based on the Australian government 2016 census, the most common ancestry of Cabramatta is 35% Vietnamese, 24.5% Chinese and 8.2% Cambodian.

My favourite moments were when my mentor would share beautiful ornamental craft pieces from his collection. These works demonstrated the significance of floral and animal motifs in Asian cultures. In time I learnt that the floral and plant motifs are revered (Welch 2008), popular, highly charged and expressed in many art forms in China.



My mentor's Mid-20th century Chinese hard-stone flowering bonsai arrangement of peonies, Japanese quince and Himalayan evergreen magnolia. Collection of Chan and Donovan, Sydney, Australia.



Graphic image of The Chinese Three Star Gods of Luck in my parent's home altar, 2021.
© Bic Tieu.



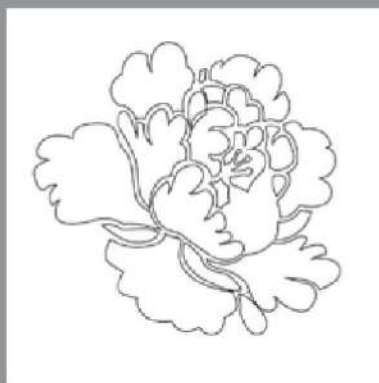
Graphic image of food offerings on my Grandparent's tombstone, Day of the dead festival, 2021.
© Bic Tieu.

The Peony Graphic

The three series of jewellery works discussed in this article are based on the floral illustration of the peony flower. I chose the peony flower because it is a ubiquitous image in the arts of Asia, depicted across a range of surface materials, including ceramics, metals, lacquer ware and textiles. The peony flower has been regarded as a noble emblem in the imperial gardens of China dating as far back to 4000 years.

By experimenting with the peony structure for graphic interpretations, I was testing for innovative translations and meanings. James Thrilling wrote about ornamental design and cultural exchange and describes the constant change in creation and renewal. This development resulted from 'the interaction and transformation of cultures through migration, trade, conquest and the spread of religions'. (Thrilling 2001, p. 104) More recently, craft scholar, Glenn Adamson, whose practice intersects design, craft and art brought together sixteen essays in a book co-edited with Victoria Kelly to explore the surface structure and its meanings to objects. They wrote, 'contemporary design increasingly challenges the surface/depth binary, partly through technological means, as new materials and digital processes allow designers to conceive and produce more complex objects and buildings'. (Adamson & Kelly 2013, p. 1)

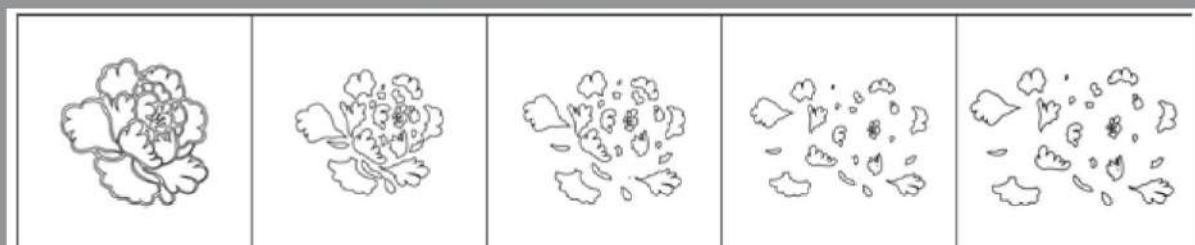
By deconstructing the image of the peony flower, I was able to experiment between 2D drawings and 3D forms. The simple act of pulling apart the flower using a digital platform manifested in animation. This instantly created opportunity and a visual method to explore notions around migration, identity and in-betweenness.



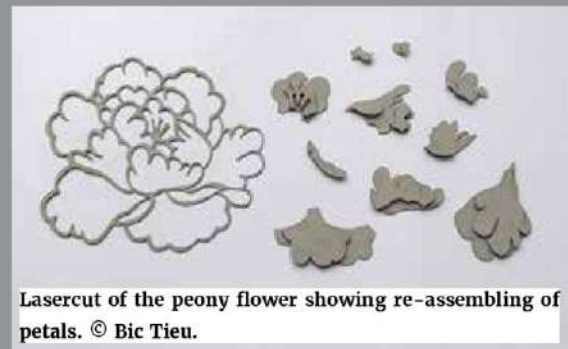
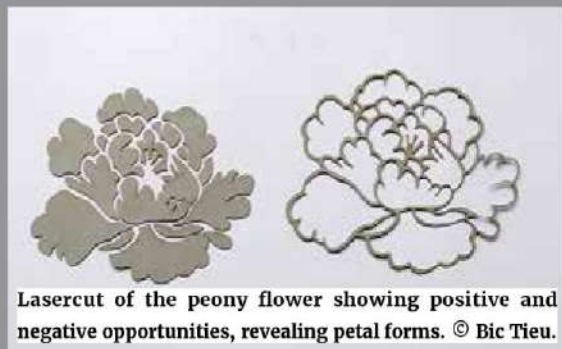
Vector illustrations of the peony flower (left) whole and (right) apart. © Bic Tieu

Still frames from animation showing the petals moving apart. © Bic Tieu.

To watch the animation >> [Peony Flower Explosion on Vimeo](#)



Deconstructing the drawing of the peony flower creates new forms and possibilities. As a vector the botanical species is recognisable. When reconfigured, its identity is reinterpreted. Experimentation between the static and moving imagery also informed ideas pertaining to identity. New formations are constantly negotiated. The cultural scholar, Ien Ang, explores what it means to live between the east and west within the multicultural context of Australia. Her critique on issues around the Chinese diaspora and identity is explored in her book, *On Not Speaking Chinese: Living Between Asia and the West*. Ang devises the term 'Chineseness' to argue that it is 'not fixed and pregiven, but constantly renegotiated and rearticulated, both inside and outside China'. (Ang 2001, p. 25) Similar to Ang, I am of Chinese descent and my connection to my identity has been reformulated through migration and place. Ang quotes, 'Diasporas are transnational, spatially and temporally sprawling sociocultural formations of people, creating imagined communities whose blurred and fluctuating boundaries are sustained by real and/or symbolic ties to some original 'homeland''. (Ang 2001, p. 25) The peony as a graphic forms part of the visual inquiry. Furthermore it provides as visual resource for translating into jewellery making.



Moving between the graphic, animation, laser cutting enabled a visual platform for exploring themes of migration and change. Nikos Papastergiadis describes migration in contemporary society as in 'a state of flux and turbulence.' (Papastergiadis 2000, p. 1) When the lines move away, overlapped, and intersected, this offered great synergy in metal to jewellery. Floral forms as moving graphic to inform the politics of change further annotates my understanding of migration.

01 Bi-Cultural Floras silver, stainless steel, 2017

In this collection of 9 brooches, notions of identity and change are explored through a complex constructed layering process which combines traditional Eastern floral patterns etched into the surface design. There is a multiplicity of technical processes of deconstruction, reconstruction, tracing, copying and layering to build the final nine brooches. The making metaphorically echoes the complex experiences of identity. The final nine brooches transform through the hand making and no longer resembles the original floral emblem. In re-building the image, it no longer has the original form. The remaining circular border remains but the image has altered into new shapes. These hidden technical processes echoes some of the ideas explored by literary theorist Trinh T. Minh-ha. An immigrant herself, Minh-ha gives a description of what it is like to live between cultures,

'boundaries of identity and difference are continually repositioned in relation to varying points of reference. The meanings of here and there, home and abroad, third and first, margin and centre keep on being displaced according to how one positions oneself'. (Minh-ha 2011, p. 39)

These brooches, each shape both ambiguous and familiar speaks of authenticity, change and place. The brooches can be arranged in various compositions. These speaks to the movement, flow and flux that occupies cross-cultural experiences.



These nine brooches (Bi-Cultural Floras) are arranged revealing traces of the floral pattern from the original etched silver plate - photo on the left. © Bic Tieu.



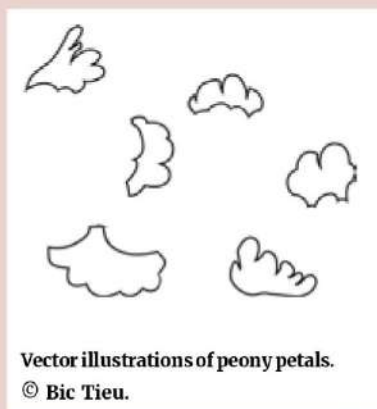
These nine brooches (Bi-Cultural Floras) are presented with a different arrangement. © Bic Tieu.



Four brooches from (Bi-Cultural Floras) are worn on a model. © Bic Tieu.

02 Moonlight Sea Series copper, lacquer, silver, stainless steel, 2018

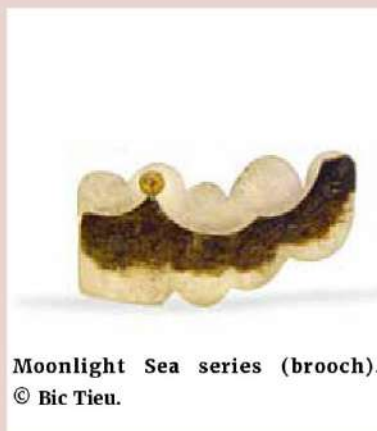
This work is also developed through reconfiguring the peony's graphic to explore family history and migration. The ambiguous petal forms when overlaid evoked imagery of waves, sea, vessels and astronomy.



I saw the potential translation and material meaning to discover cross-cultural concepts through the flower's abstraction. I looked to New Zealand jeweller Warwick Freeman to reflect on how jewellery can deliver meanings around identity and place. Freeman works with themes addressing national identity and place through his making. For example, Freeman has translated the Tiki image. The tiki is an ornamental pendant carved from nephrite and is a distinctive cultural expression of Maori tradition. Here Freeman says 'the version I did was pulling in the image, but it's pulled it right into a totally European framework that's the tiki is set in claws'. (Museum of New Zealand Te Papa Tongarewa 2011) He is mixing western tradition onto a traditional material. Like Freeman, I am juxta positioning images together in the context of jewellery to think about my cross-cultural identity.

Layered in this construction is the inclusion of materials to create meanings. Using a combination of Asian lacquer with fragmented bits of shell inlay over the metal's surface identifies with specific geographic regions. Asian lacquer is an ancient medium which originates from China and through trade and exchange have dispersed throughout neighbouring countries. I see lacquer as a medium to speak about movement, migration and identity. Freeman's practice is also material focus and how they imbue meanings, he says in an interview, 'materials are my words'. (Museum of New Zealand Te Papa Tongarewa 2011)

Moonlight Sea series, reflects on the story of my Parent's 1978 exodus of Vietnam. They left by boat on sea. The work explores migration and diaspora through the visual language of the forms and materials. The forms are suggestive of water, the sea, vessels and the moon.



03 Floral Maps copper, gold-powder, lacquer, silver, stainless steel, 2018

These pendants on a cable drew the work's attention to cartographic possibilities. Worn on a body, the visual imagery alludes to native Australian floras such as the Kangaroo Paw flower. The line and loop also suggestive of movement. By fragmenting the identity of the peony, I was able to construct by merging different forms using the flower's petals. By adding traditional lacquer to the design, I was able to extend the material's dialogue. The resulting works is suggestive of hybrid forms conveying relatable expressions around movement and cross-culture.



Floral Maps:
top: series of 3 pendants,
bottom: pendant on body.
© Bic Tieu.

Conclusion

Moving from the two-dimensional to three-dimensional design works can reveal parallel configurations in the context of jewellery. Breaking down the peony graphics can highlight a myriad of ideas both conceptually and material based. This interdisciplinary approach to design and making of works follows a graphic investigation which transforms the peony flower into a network of inter-related outcomes to expand cross-cultural ideas around identity and migration.

The translation from the layering of overlapping lines and anatomical presented new meanings reflecting cross-cultural references. The application of graphic to critically analyse ideas of migration and identity provided aesthetic and theoretical interpretation.

The works discussed shows how graphics is integrated to address and nuance themes associated with identity and place. I am interested in developing these ideas further as adapting graphics to jewellery has potential for thinking, making and writing. Whilst this paper uses graphics and cultural floral motifs to investigate a personal theme, I hope this visual textural paper can serve as inspiration for other contemporary jewellery makers intending on assigning graphics to unpack complex ideas in their practice.

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Design

Concept and Design by Bic Tieu

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Short Bio

Bic Tieu is a Sydney-based designer, maker in jewellery and objects. She is also an academic working and teaching in the School of Art & Design at the University of NSW. Bic's works draw on traditional and contemporary crafts methods and technology, inspired by her Asian sensibilities, to communicate narratives based on personal cross-cultural concepts. Her practice ranges from teaching, research, industry collaborations and curatorial exhibitions.

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Lines Drawn in the Sand: researching identity at the 20th & 40th latitudes of Australia through isolated shorelines & contemporary jewellery praxis

Author: *Wren Moore*

ABSTRACT

Contemporary jewellery has the potential to communicate a personal experience, become an identity signifier, contain memory of place and transfer those entities to the wearer through touch, form, material and hue (Skinner & Murray, 2014). The making process itself, can also communicate to the wearer and viewer a deeper understanding of the interiority of the maker and their inherent motivations to create wearable objects.

‘Lines Drawn in the Sand’ is a practice-led PhD Creative Arts research project investigating identity formation and artistic trajectory at two climatically diverse regional locations in Australia – North Queensland and Tasmania – through contemporary jewellery praxis.

In this visual paper, I share insight into a contemporary jewellers’ in-field creative process using mapping and natural materials within three locations at the 20th latitude of Australia. The research commenced in 2020 and is expected to conclude in 2023. Examining the method of bodily movement, or wayfaring (mindful walking) within geographically isolated shorelines, the artistic outcome aims to communicate this personal creative research experience through wearable art.

INTRODUCTION

Through a critical engagement with bodily adornment and Anthropologist Tim Ingold’s literature on wayfaring, this project investigates how landscapes, climate and place can impact identity, creative practice and the body. Ingold (2010, 2011, 2015) examines how our bodily movement of walking upon the ground through landscapes, climate and weather can impact upon our life trajectory and artistic practice. Ingold’s theoretical reflections on lines as being expressive of how we move, live our lives, tell stories and create art, align symbolically with my own creative practice that is embedded in an auto-ethnographical experience of internally migrating from one climate to another, at the 20th and 40th latitudinal lines of Northern and Southern Australia.

This is a PhD in progress, and aims to communicate and document clear steps that other artists may find useful in their own research journey. Currently at its half-way juncture, I am yet to undertake the second portion of fieldwork at the 40th latitude of Australia. The jewellery pieces are yet to be created; what pieces are shown within this visual paper relate to Honours Research at the University of Tasmania and offer an indication of where the research and final creative body of work is heading.

The culminating thesis and artistic outcome will formally document a process of patinating and manipulating copper in the field and studio which was experimented with through Honours Research in 2019. The research project will add to the body of knowledge and research literature that illustrates how contemporary jewellery artists can create research and methods that incorporate touch, liminality, identity, lines and landscape through an auto-ethnographical lens.



Moore, W 2019, 'The Illuminated Line' Honours Research, University of Tasmania, neckpiece collection, copper, brass, Tasmanian sand, silk thread. Photos: copyright Wren Moore.

Background

The genesis of Honours research came in 2018, after my thyroid gland was removed due to a cancer diagnosis. After some digging, I discovered Tasmania has a higher-than-average incidence of thyroid disease compared to the rest of Australia due to an iodine deficiency in the soil – a result of glacial leaching during the ice-age (Dwyer, T 2006, *Illnesses Specific to Tasmania*).

The symptoms of thyroid disease are an inability to regulate your body temperature, so my experience in the cold climate of Tasmania impacted my body significantly. This revelation, that the landscape had shaped not only my identity but also possibly impacted my physical body, led me to want to express this through my art practice. Scarpitti (2021) reasons that contemporary jewellery is characterised by an innovative approach oriented towards new aesthetics, meanings and processes. What better way to express themes around the body, scars, identity and the natural environment than through the medium of contemporary jewellery and bodily adornment.

Lines became a significant symbol of my experiences. I wore the lines of a scar on my physical body; on the neck, and the lines of the horizon became illuminated in the landscape as a physical boundary (Moore, W 2019). During my undergraduate degree, I was experimenting with interdisciplinary methods. I used photography as the basis for making small objects by laminating copper with native timbers to reflect the line of the horizon that became symbolic of feeling trapped on the island of Tasmania.

I saw each walk into the landscape as a line tracked across the ground. Lines represented direction or lack thereof and at times those repeated lines represented a restriction by the natural topography of the island's shorelines. This is illustrated in the constant return to round vessel forms intersected with straight lines within my undergraduate study. The repetitious nature of lines, metaphorically registered as significant to the circumstances I found myself in (Moore, W 2021).



Moore, W 2017, *Untitled*, vessel, wood, copper, ink, crushed graphite, beeswax. Photo: copyright Wren Moore.

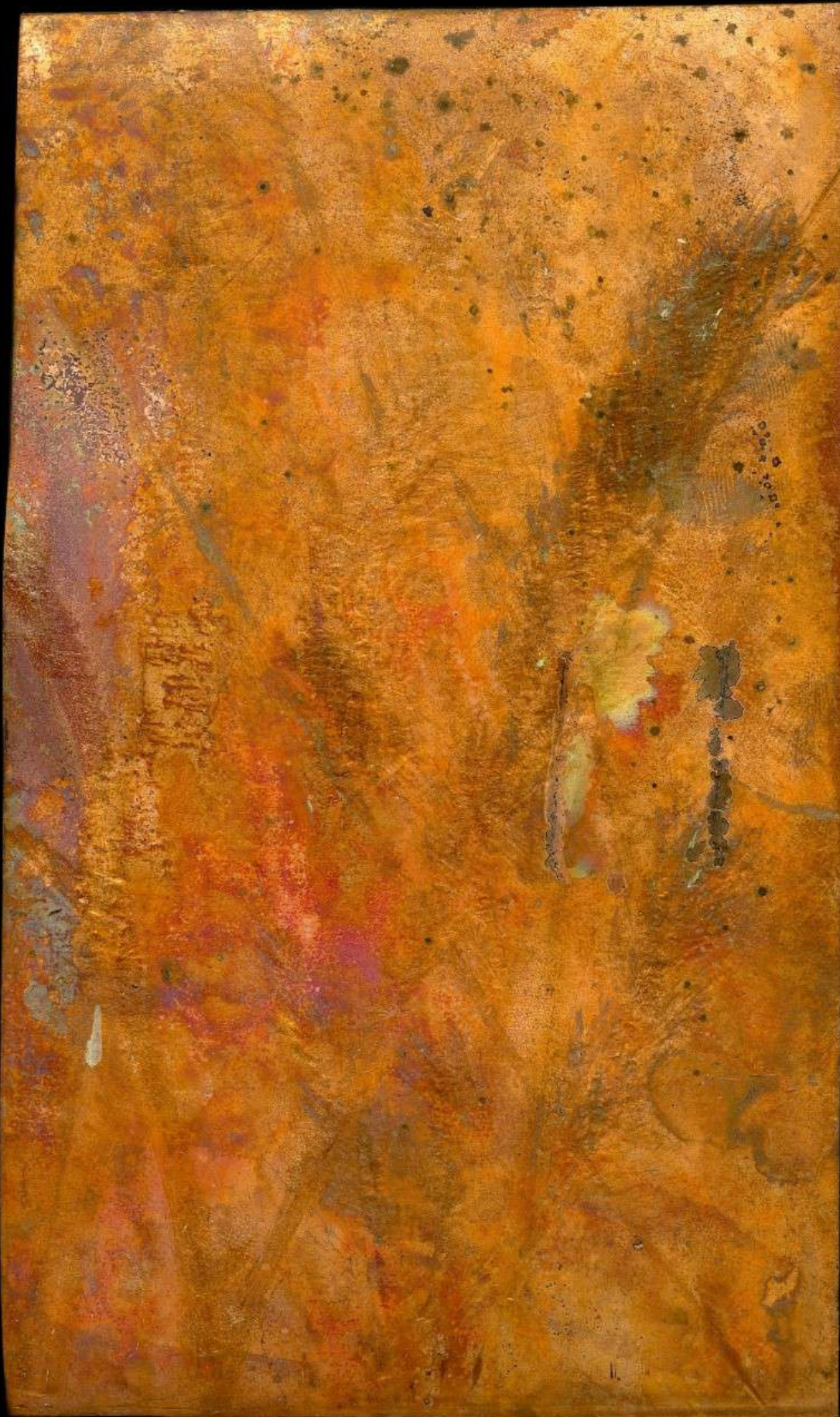


Moore, W 2017, *Untitled*, vessel, Tasmanian oak, copper, beeswax. Photo: copyright Wren Moore.

The Illuminated Line, (Moore, W 2019), conceptually expresses each adornment piece as a physical body in itself. Throughout the making process, using heat, pressure and natural materials, it aims to describe place and experience by using these elements to create form. The making process illustrates the ways in which a landscape and climate can impact the physical body through extremes of temperature and length of time endured by each piece in a kiln or immersed in water. These pieces become symbols of a metamorphosis journey, yet also visually describes new topographies.

After internally migrating between North Queensland and Tasmania and back again, I had developed a deep and evolving relationship with both regional locations. Having spent almost half my life in each location, I have used wayfaring - walking upon the ground as a way to make meaning - within geographically isolated landscapes. Northern Modernist Jewellery – A Museum Collecting Project

Climatically these landscapes are contrasting, however there are similarities at play that are worthy of deeper investigation. Fundamentally, my practice is a desire to communicate the transformative experiences of shaping an identity from the landscape and how this can impact upon the physical body.



“It [contemporary jewellery] is a sensorial exploration of materials and technologies that sets the reasons for its being, first of all, in a semantic investigation of the object, understood as a sensitive extension of one's interiority” (Scarpitti, C 2021).

My academic enquiry exists within the space of identity formation from two climatically diverse regional landscapes. I was curious as to what would happen to my identity, body and artistic trajectory, that had been forged and impacted in the dramatic landscape of Tasmania, when I internally migrated from one shore to another back to my place of birth.

I was now attuned to how landscape and climate can affect the body and identity in significant ways. I wanted to develop an artistic method to capture the experience of landscape-induced transformative life events and communicate these experiences materially.

Alchemy and metallurgy are a basis of my studio experimentation and it expresses psychologically and materially the liminal space of a metamorphosis of identity. These experiments include transforming copper and copper alloys such as brass using natural materials - leaf debris, water and sand to imprint and patinate these surfaces. Through this process, a microcosm emerges that is expressive of a topography of a landscape – embodying the landscape of place, body and self, both real and imagined.

I see the material copper object as symbolically representing the body and self. Scarpitti acknowledges “The relationship between materials and techniques in contemporary jewelry is emblematic since it consists of a relationship that challenges the usual compositional norms of a precious ornament” (2021). In my enquiry between materials and techniques, I take an experimental, alchemical approach by using natural catalysts to work upon the non-precious material surface. Scarpitti (2021) argues that understanding and engaging with meaning in contemporary jewellery is comparable to accepting the underlying system of signs and symbols which recognises human stories and ideals. If you can imagine the copper as being the body and self, you can visually see how elements of the landscape can shape, form and impact identity in both physical and metaphysical ways within a physical, wearable object.

I find copper fascinating, not only for its’ properties and reactivity to heat, water and other catalysts but also because it is so expressive of the way in which humans interact with the landscape. For Millenia, humans have been mining copper. It has become part of the social fabric and basis for prosperity in regional places such as Tasmania and North Queensland. As a natural mineral essential to humans for life, there is a long historical and interwoven narrative of people and place imbedded into this malleable, reactive material.

Moore, W 2019, ‘The Illuminated Line’ Honours Research, University of Tasmania. Copper, brass, Tasmanian sand, Tasmanian oak, silk thread.

Photos from right to left: Images 1, 2 & 4 copyright Tim Coad. Images 3, 5, 6 & 7 copyright Wren Moore.



LINES DRAWN IN THE SAND

Wayfaring isolated regional shorelines within the
20th & 40th Latitudes of Australia as a way to define
identity & place.



Moore, W 2021, 'Cardwell Spa Pool'. Photo: copyright Wren Moore.

WREN
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A PhD Research Project in Progress

"Almost four million years ago, our earliest ancestor, *Ardipithecus ramidus*, moved from four legs up onto two and began to walk. Immediately, the horizon was broadened. Distance lay ahead. It's a perfect metaphor for what walking does to our minds. It enables us to imagine and think ahead. It really does change the way we think – in more ways than one".
(Lineen, J 2021)

Development: During the research development phase, I chose to look at shorelines, as they can represent a liminal and in-between space or zone.

Shorelines are spaces where I think through a life problem, where time seems to hang suspended; a place I seek out to solve or resolve things, usually through the act of walking upon them. How I feel metaphysically during the act of walking a shoreline can be likened to an in-between state.

By meeting a series of theoretical concepts by Luc Levesque (2016) for determining an interstice, this research frames isolated shorelines as interstitial spaces. The research suggests that a number of factors can be applied to the shoreline as an interstitial space. Those being that the shoreline is “neither interior nor exterior, being neither land or sea, can be sites of contestation for arrival, departure, migration and invasion, are moments of transition between land and sea and are transformative in physicality and the phenomenon of human experience” (Levesque, pp. 21 - 63).

Physically, shorelines are the spaces that exist as a line between water and formed land. Water is a constantly moving catalyst – it wears away, it reshapes and resets in an ever-moving motion, a type of uncertain-certainty.

I am using the shoreline as a symbol of the liminal space I find myself in after migrating from one isolated region to another. There is a long historical narrative of shorelines being pivotal spaces in time and place.

Research: An exhibition essay written by Tracey Clement suggests that the neck is a liminal zone ‘fraught with ambiguity and brimming with symbolism’. Clement describes the zone as ‘being stranded between what we see as the symbolic seats of thinking and feeling: the head and the heart’ (n.d). This best describes why I am drawn to making neck pieces. The symbolism of a neck piece becomes a communication device for the maker and the wearer.

Liminality as a state of transition was developed in a book titled ‘Rites of Passage’ (1960) in the early 1900s by ethnographer, Arnold van Gennep. Liminality has been described as “any betwixt and between situation or object, any in-between place or moment, a state of suspense...it relates to change in a single personality as well as social change and transition in large-scale settings.

Methodology: auto-ethnography; auto meaning self and ethnography meaning the study of people and culture. Ethnography is a written observational science which can provide an account of society, community and cultural phenomena. It documents the researchers’ participation in events, their interactions, perspectives, thoughts and feelings as research, using a qualitative framework (Ellis et al, 2011).

Each fieldwork site has been impacted, or is due to be impacted by tourism. Historically, these regional zones have been impacted by copper mining as a means to support human life and the creation of culture and society. The researchers’ ability to enter into a liminal zone while geographically isolated yet cognisant and attuned to the impact of human existence is a central concept that will have an effect on data collection.

Method: One of the aims of this practice-led research is to not only express an auto-ethnographical experience but also a place that has been moved through by a human body.

One of the methods I am using to capture my movements is using GPS tracking apps such as Strava and GPS Data. These maps are then analysed in a journal and the maps will be generated into a wearable object to express this movement.

The data collected such as the duration of each walk will be used to determine how long each piece of metal will spend in an electric kiln with minute traces of each landscape to imprint the surface of each piece of copper. Copper specific and native to each region will be used in the making process.

Method: Singer in *Sea Change* (2014) references Henri Lefebvres’ *Production of Space* (1974) which describes how there is an infinite sense of using descriptive and geographical maps to describe space and decode meaning from those spaces somewhat resembling a Mondrian painting. Singer (2014) concludes that: “Cartography is a symbolic representation of hegemonic power in one of its oldest forms. Making maps is to align power and space” (p. 67). Rather than representing power or dominance over a place, GPS map-making may also be used to describe movement and trigger memory through a space by using that imagery to create tangible wearable objects.

GPS Mapmaking generated into wearable objects, is one of the methods that will be used to express geographical location, bodily movement through spaces and as a way to invoke meaning through memory into each piece.

I see these pieces of metal I hang around my neck as pieces of me. I see them as the duality of strength and fragility I have inside of me and rarely allow to be seen outwardly for fear of being too seen. I mine the earth with my hands to collect and gather these fragments of memories of where I have been that are significant in shaping me, and I conjure and create to reimagine and explain - this place has changed me.

I manipulate, press, heat, cool, destroy and rebuild – all the elements that happen within my body and mind I subject the metals’ surface to. I see it reshape, reform, I see it’s beauty and all it’s rough edges. I see the spaces in my mind and the colours in the landscape and I push these materials to become a representation of who I am and how I have been created, what I’ve seen and what I know to be true. I place my body in places that are uncomfortable to experience, to learn and to grow. I feel a great disquiet in my environment both inner and outer. I feel the presence of those that have come before me. I imagine their pain, their stories and feel the layering of their paths, their lines tracked in the earth. I walk in their shadows and their footprints. And I layer the material elements, both mineral and worn-down rock to represent them too.

I seek to show others my pain rather than tell them with words. Here is my heart and my soul, here are my experiences, my losses and my gains, here I hold them in my hand and place them around your neck so that you may feel it in your chest and in your being. With every breath you take, you feel the weight of it. With every movement you make you subconsciously but consciously know that you hold me close to you, close enough to gain some understanding, close enough to want to witness and prepare your body too for the seeing and knowing of yourself. Closer than I am ever comfortable enough to put my physical body within.

You feel it, it is right there on your body, you know it exists. Sometimes it makes a sound to remind you it is there; you touch it to feel it’s’ presence. You look in the mirror, you see a one-off, one-of-a-kind creation made by someone else’s hands, patinated by the sand and the soil and the rocks and the water, the warmth of the sun and the cold in the night. You see it, touch it and you know that it is real, it is now a tangible thing.

You don’t need to go to this place right at this moment, for you hold a piece of it close. Until such time your curiosity is so loud that you cannot ignore it, and then you seek it for yourself, because it is the right time for you to do so. It acts only as a reminder that it is there for you when you want to experience it. You can imagine the colours I’ve seen; you can imagine the ground beneath your feet, you can imagine the water lapping at your feet and know that it is quietly disquiet. And then you walk your own path, upon the ground and you take that piece of me with you and show me your world. It is an exchange of exquisite beauty yet exquisite pain. I take on your world and you take on mine. We share it, just as we share the landscape around us.

This is how I communicate when there are no words to express the wholeness of the journey, the hopes loved and lost and recreated again and again until I cannot walk anymore and I need to rest. This piece you wear around your neck carries on with my intention, long after my body is unable to. Jewellery is made to be worn, seen, touched, held, experienced, celebrated and carried along to wide audiences – out into the world, passed down between generations and made to inspire, wonder and awe at why it has come to be.

Contextual Research

“Just like pages from an autobiography, each piece stems from a different constructional arrangement like a continuous “metamorphosis””.

(Moongallery on Annamaria Zanella, n.d)

“The materials are my words”.

(Freeman, W 2013)

“For me jewellery means more than just create something with aesthetic value. Making jewellery I can find a lot of possibilities to research and try to understand life... I try to understand the meaning of life, my life and others life...

I want to create a personal, visual and artistical language my own way to share my thoughts.

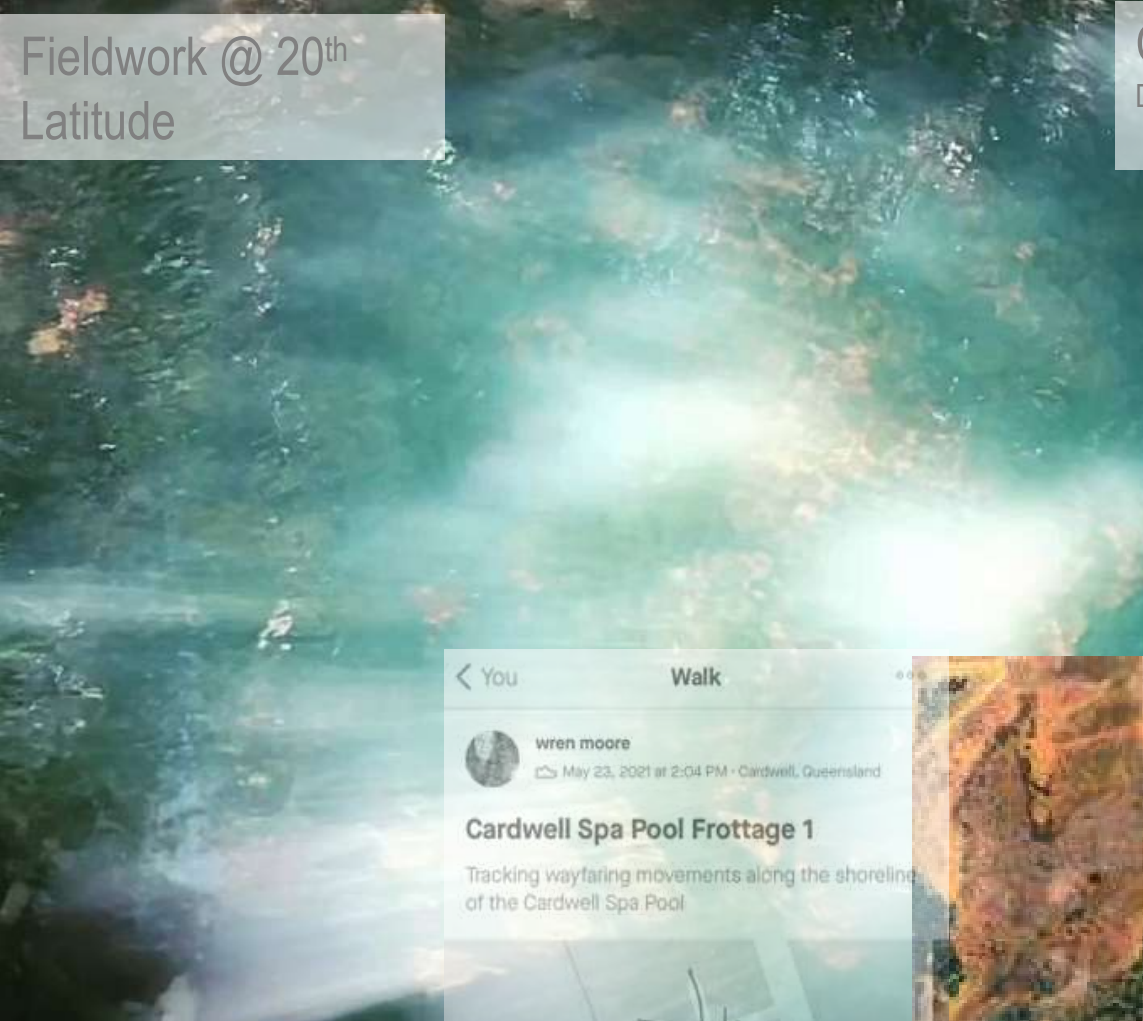
When viewing my work I invite the audience to go beyond the forms and experience the emotional content. To feel my work rather than perceive”.

(Manilla, J 2016)

Moore, W 2021, ‘Studio Experiment Cape Upstart’. Photo: copyright Wren Moore.

Moore, W 2021, ‘Cape Upstart’. Photo: copyright Wren Moore.

“I have a sensory sensibility for materials, materials which have a strong sense of temperature...a colour palette which have a certain temperature...I have developed a sensory apparatus within myself which is subconsciously drawn to certain materials because they are more meaningful and because they are meaningful to me, I am more able to convey more meaning with them. (Eichenberg, I, 2016).



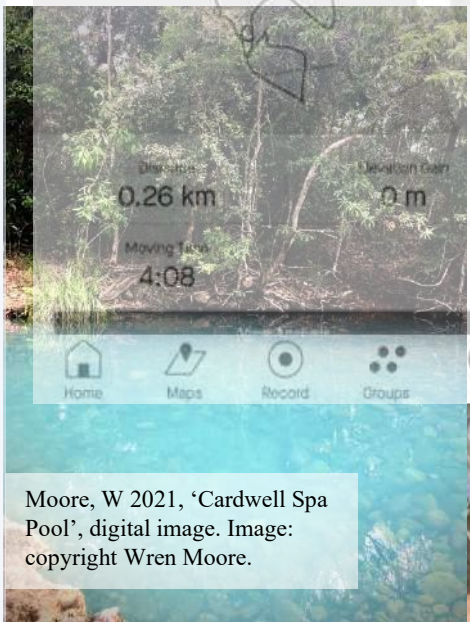
Moore, W 2021, 'Cardwell Spa Pool', still from video.
Image: copyright Wren Moore.

Seven hours was spent wayfaring at Cardwell Spa Pool in North Queensland over a seven-day period. The amount of time the copper will spend in the kiln will be seven hours – this part of the creative process is yet to be undertaken.

The data collection process begins with digital photographs and moving image. Other data collected during fieldwork included frottage, GPS mapping and sensory notations.

Copper plates were taken into each fieldwork site. On the first day of arrival, small traces of the landscape were captured in-situ to work upon the metal surface. During this process, photography and moving image are used to document the transformation from sheet metal to wearable art.

These outcomes were collated in journals in the studio setting to be formed into layered wayfaring maps digitally cut from copper sheet. Some cartography shapes will be polished while others will enter into an electric kiln with minute traces of the landscape to then be layered and worked into neckpieces.



Moore, W 2021, 'Cardwell Spa Pool', digital image. Image: copyright Wren Moore.



Moore, W 2021, 'Cardwell Spa Pool', copper plate, river sand, river water, leaf debris, human hair, vinegar.
Image: copyright Wren Moore.



Moore, W 2021, 'Cardwell Spa Pool', still from video.
Image: copyright Wren Moore.

Moore, W 2021, 'Whitehaven Beach', still from video.
Image: copyright Wren Moore.

Northern Modernist Jewellery – A Museum Collecting Project

Whitehaven Beach

Ngaro

Moore, W 2021, 'Whitehaven Beach', digital image.
Image: copyright Wren Moore.

0.069 km	
Distance	
01:05:22	7
Duration	Locations
5.26 km/h	9.40 km/h
Average Speed	Top Speed
22.58 m	17 m - 28 m
Average Altitude	Altitude
01:04:35	00:00:47
Idle Time	Travel Time

LAST LOCATION	
-18.264308	145.969864
Latitude	Longitude

5 m	SSE
Altitude	Heading



Moore, W 2021, In-situ experiments, Whitehaven Beach, digital image. Photo: copyright Wren Moore.

Moore, W 2021, 'Whitehaven Beach', digital image.
Photo: copyright Wren Moore.

Whitehaven Beach located at the 20th Latitude of Australia is a remote beach located on Whitsunday Island. The location is only accessible by boat or helicopter and sits within National Park. The sands of Whitehaven are some of the purest white silica sands in the world at 98% silica. Thought to be brought in on tidal shifts during volcanic action in the region, the sand is not native as there are no silica rock belts present in the area.

This incredible finite source of sand is said to be so pure and fine it can clean and polish gold and silver jewellery. The copper plate outcomes from each location have been scanned at a high resolution. Large format images can be made from each scan reminiscent of the colours in the photographic representations in each location. The aerial, and topographical aesthetic of the scanned images will assist to identify where each neckpiece belongs within the exhibition space.

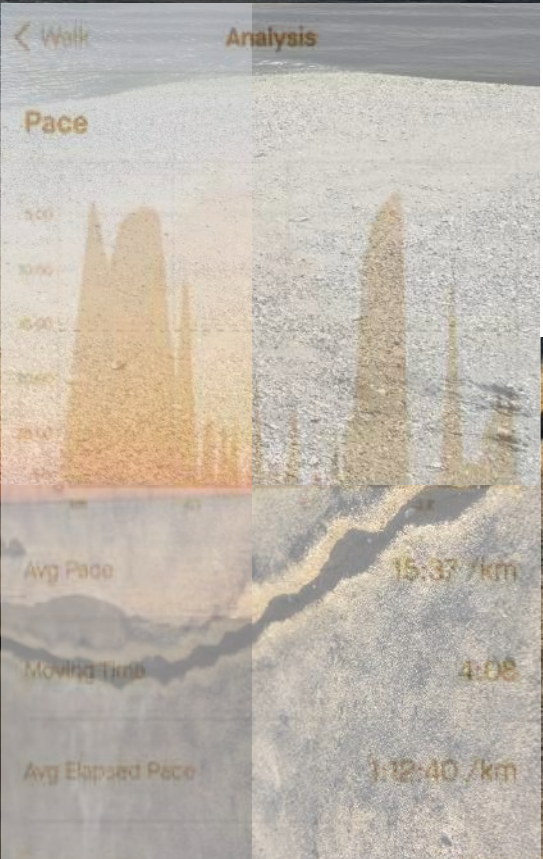
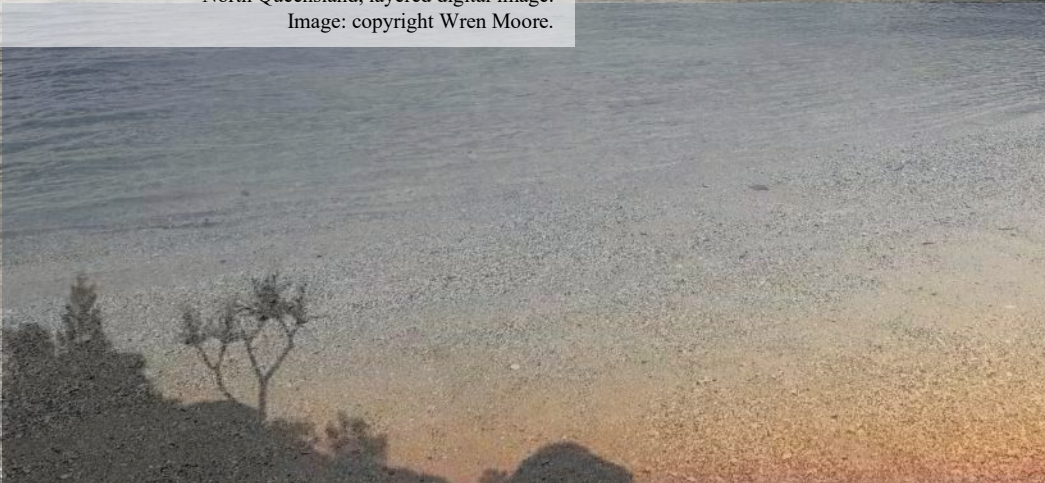
Moore, W 2021, Studio experimentation - Whitehaven, copper plate etched with leaf debris, sand, native water samples and vinegar. Image: copyright Wren Moore.

Cape Upstart

Juru Clan of the Birri-Gubba



Moore, W 2020, 'Landscapes of Isolation', Cape Upstart, North Queensland, layered digital image. Image: copyright Wren Moore.



Moore, W 2021, Cape Upstart GPS mapping, screenshot image. Image: copyright Wren Moore.

Moore, W 2021, Cape Upstart fieldwork, digital image. Image: copyright Wren Moore.

Cape Upstart is located within National Park and can only be reached by boat or helicopter. Large granite up-crops give this Cape its' name. This location is home to a popular shack community, mainly owned by sugar cane farming families in the district.

My parents bought a property in this location the same year I moved away to Tasmania and so represents a place of personal significance. Renowned for spectacular sunsets over the water, Cape Upstart is a place of contrasts. Ancient mangrove forests back onto shacks that have been constructed from all manner of materials. The inhabitants cling to the surface of this harsh and unforgiving landscape governed by the tides and the elements. It is a precarious existence through tropical weather and cyclonic seasons.

The National Park at Coconut Beach on the outer headland, once a location for graphite mining, now is a popular spot for camping. Cape Upstart proves to be a yachties haven from the stronger tropical winds and occasional cyclone storm.

Moore, W 2022, Studio experimentation – Cape Upstart, copper plate etched with leaf prints and native water samples and vinegar. Image: copyright Wren Moore.



Conclusion

As a narrative tool that has the ability to transfer ideas, experiences, identities and place, contemporary jewellery is a literal treasure trove for creatives to express and communicate their artistic selves. As you would rummage through a jewellery box to get a sense of who these objects belong to, you may find an eclectic mix of precious, non-precious, memory saving, memory inducing objects that give an overall depth to the identity and story of the individual.

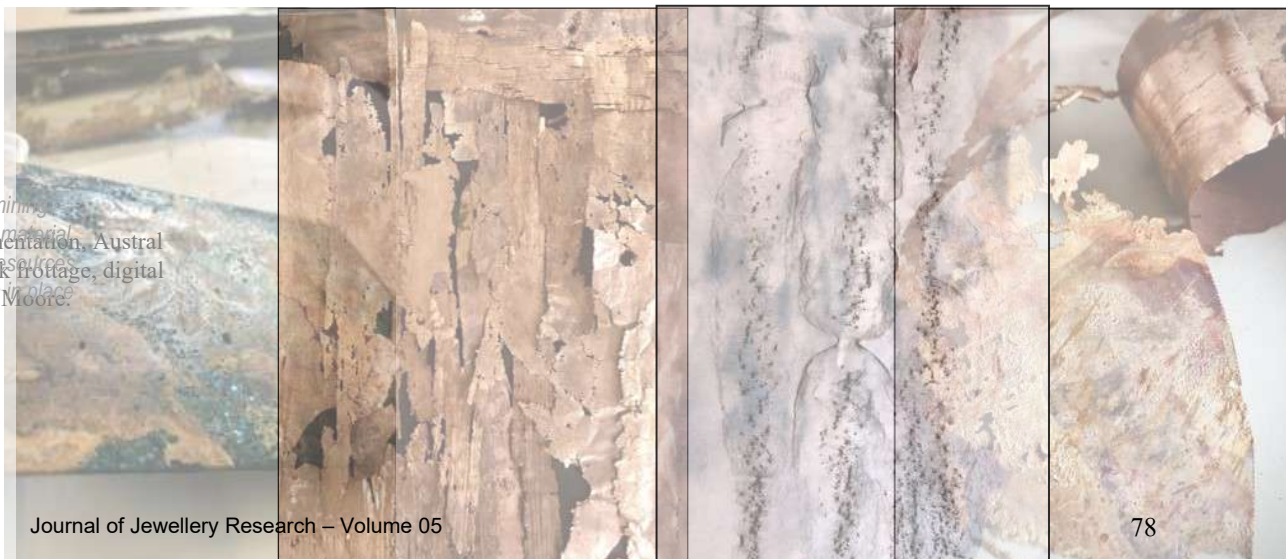
An unexpected outcome so far to the in-situ and studio experimentation is each copper plate seems to mimic the hues and forms found within the images I have captured. While this sort of synchronicity is always hoped for in artistic practice, it can never be guaranteed. The next step in the chronological journey is to undertake fieldwork using this in-situ process in Tasmania in early 2022. The creative making process in the studio will commence at the conclusion of fieldwork and data collation in mid-2022 with a culmination of the project due in late 2023.

Taking an interdisciplinary approach to contemporary jewellery, layering image-making, object-making, materials and auto-ethnography, the outcomes can be unexpected, rich and diverse. At the half-way point in the research journey, I find the deeper you mine into the psyche, the more profound the experience as an artist and in the physical outcome. There is the added complication of communicating steps in the creative process that sometimes seem intangible and unexplainable. Given that contemporary jewellery can offer so much in open-ended communication and interpretation, there is the risk that the final outcome of this research will be an over-explanation of a process and instead perhaps it should be an organic exploration for the viewer to consider how interpreting their own meaning and outcomes may be an important step to discovering their personal creative manifestations.

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es are a wholly owned Australian mining
ave donated the use of their waste material
ne Mine to this project. Austral
resources copper, and well bark footage, digital
operation that have a closure plan in place
illitate the landscape once mining
ceased.



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An emerging artist, designer and researcher taking a multi-disciplinary approach to image-making, object design and contemporary jewellery. Wren graduated with Honours in 2019 from the University of Tasmania and is currently undertaking a Doctorate in Philosophy - Creative Arts Research Degree at James Cook University in North Queensland, Australia.



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