

Welcome to the first issue of the **Journal of Jewellery Research**. This is a peer-reviewed online and open-access publication that focuses on the design, theory and praxis of contemporary jewellery studies. It promotes research into materials, techniques, technologies, methodologies, processes, concepts and aesthetics of contemporary work. JJR provides an interdisciplinary arena for the discussion and analysis of jewellery spanning the conceptual, practical, pedagogical and cultural. It also considers contemporary jewellery within a historical timeframe to evaluate its relevance within the wealth of creative methodologies at the intersections between jewellery and other disciplines.

JJR is not a sudden venture. It is an idea accrued during years of studying the field, and teaching Critical Historical Studies on Jewellery. In these years the idea has evolved, and in 2015 in identifying the absence of a specialized academic journal for contemporary jewellery, Roberta Bernabei instigated the journal.

JJR, hosted by Loughborough University, with support from Northumbria University and Duncan of Jordanstone College of Art & Design part of the University of Dundee hopes to establish one of the pillars necessary to further build the academic reputation of contemporary jewellery studies. The aspiration is that the journal can offer the creative scope to represent contemporary jewellery research in the creative format that it deserves and echoes the kind of work being carried out in the field.

The journal's first priority is the publication of original papers of high quality, directly relevant to the journal themes that have been identified by the full editorial and advisory team. Themes are meant

as stimuli for submissions of articles and detail areas of contemporary jewellery practice and context that we wish to support a discourse around.

We are very happy to be able to publish the 5 papers that comprise this first issue and that they come from a range of established makers as well as young researchers internationally. We received 15 papers for this initial issue and each went through a rigorous double blind peer review process supported by our advisory board of international experts in the field. Following an editorial review process and revisions by authors the final manuscripts were supported through proofreading stages and the development of the texts into the journal paper formats (both conventional and visual/textual). This has been a learning curve for us, which has opened up many ideas and opportunities for how the journal can develop and grow creatively.

Christoph Zellweger in his paper *Of Carats and Calories - An artistic exploration about bodies, rituals and norms* considers how our bodies have become matter that can be manipulated and shaped. An early version of this paper was presented verbally at *Body Alchemy. Hangzhou Contemporary International Jewellery & Metal Art Triennial*, China Academy of Art, Hangzhou, in November 2015 and we are pleased to have an opportunity to share a developed version with a wider audience. The body has always played a central role in jewellery and Zellweger's work approaches this subject in an interdisciplinary and conceptual as well as an artistic manner. His approach to practice raises many issues and questions about the politics and key drivers in this arena and how much control we actually have. This shifts contemporary jewellery from adornment or the conceptual into the realm of critical design and critical making and an interdisciplinary approach. The paper documents, in part, Zellweger's experiences as an observer in the operating theatre and brings an uncommon and at times uncomfortable perspective on the body and the gaze of the medical profession as well as of the jeweller.

In Why Should Jewellers care about the Digital?

Konstantia (Nantia) Koulidou presents a compelling discussion on Digital Jewellery Practice from a jeweller's perspective. She explores the 'more poetic qualities of interaction with digital technologies' and the 'self'. Koulidou's paper provides an intriguing critical overview in relation to both jewellery practice and material culture through the lens of the digital. This article fosters the discussion of digital jewellery considering how 'digital sensation' can extend the possibility of emotionally invested jewellery. Similarly to Zellweger, this paper questions what it means to be human when our bodies are extended through augmented means. Koulidou highlights an extended palette of materiality through digital technologies and is cautious to consider this from a stance of jeweller in relation to sensibilities towards the body, how we use artefacts to communicate with self and others and how we make things that are personally meaningful. Continuing the thread of new materiality Katharina Vones in *Materials Libraries: A Jeweller's Perspective* unpacks her engagement with a number of materials libraries in order to raise awareness for contemporary jewellers of their existence, scope and accessibility. Whilst full of potential for practitioners Vones details the rise of materials libraries but also the limitations of certain funding models that ultimately act as barriers to entry and use. The paper highlights contemporary discourse around perceptions of preciousness in both historical and emerging material culture and the rich potential for jewellers of new materials. Vones offers a clear polemic for greater access to the resource of materials libraries and greater awareness of their existence in the jewellery field.

Stephen Bottomley in his visual textual paper: *The Adorned Afterlife Research Network* details a multi and inter-disciplinary research network, comprising the fields of Design, Archaeology, Forensic Anthropology, History, Philosophy and Museology. This fascinating grouping of

disciplinary backgrounds and sensibilities was created in order to enable its members to share practices and methods of artefact interrogation and gain insights through adopting each other's techniques and ways of seeing. Based in the knowledge that museums around the world contain a wealth of artefacts that relate to adornment, but that may be out of reach or hidden out of sight within an artefact the group's aim was to consider new approaches to re-examining objects of adornment held in our national collections. The paper details existing methods and new technologies for the non-invasive examining of artefacts and paintings in museums by computerised tomography (CT) and magnetic resonance imaging (MRI) scanning. Bottomley's paper takes us through a pilot project focused on the Rhind Mummy housed in the National Museum of Scotland. The paper details how the group worked together and what their different disciplinary perspectives meant in relation to identifying artefacts as jewellery or not. Bottomley proceeds by discussing the advantages of the inter-disciplinary group, future potential of working together from these specific disparate disciplinary groupings and nuanced differences in how jewellery was described and perceived that were highlighted by the pilot study.

The final paper in the issue is by Gitte Nygaard and Josephine Winther: *Makers Move - Jewellery as a medium of exchange*. Echoing the sentiment at the heart of Zellweger's, Koulidou's and Bottomley's papers of seeking to view the context of jewellery from an uncommon perspective Nygaard and Winther uprooted their workshop situated view, by taking their workbench out into the public street. This paper digs down into the Makers Move project beyond previously published work to discuss the project as a dialogue between 2 jewellers and people met randomly in the street around objects that hold meaning to them. More than this, however, the paper poses making as a dialogue between not only person and themselves, but also person and the

world. The paper situates making as a form of unending, unfinished dialogue and both authors consider implications of the 'intelligent hand'. One perspective presented is that we have the opportunity to re-tune into this form of intelligence through making with our hands and that this fundamental human ability is worth championing in a capitalist culture. By engaging with people in the street through making the authors detail a simple method of casting objects that people carry and wear as a means to engage in dialogue around personal meaning and, like in Bottomley's paper, a means to unearth stories of significance. Nygaard and Winther draw this first issue to a close and it is a pleasure to end with a grounding in well established jewellery making techniques to compliment other papers' focus on the digital, the augmented body and new material cultures.

Four of the five papers are critically reflective explorations of practice and it is this focus that we wish to encourage and continue to support in future issues of the journal. Two of the papers consider the relationship between emerging digital technologies and contemporary jewellery that perhaps hints at another potential shift in practice specially a blurring of flesh and the digital and a move towards a biological approach to wearable technologies. Two of our submissions are also from PhD researchers and it is perhaps no coincidence that they are also separately supervised by the journals two co-editors Prof Jayne Wallace and Dr Sandra Wilson who were part of the vanguard of PhD graduates at the turn of the 21st Century. This growth in PhD students within Academia is also fostering an exciting robust research culture and we welcome future submissions from both current PhD students and early career researchers.

Whatever future direction contemporary jewellery takes it is clearly an exciting time to be a maker and a practitioner. The field is divergent and its value is being recognized and welcomed by a broad range of disciplines. We firmly believe that contemporary jewellers have a distinct take

on the world and offer particular, uncommon, perspectives on understanding our relationship to other objects, people, disciplines and larger social and societal issues. Whether part of multidisciplinary teams or working alone there are particularities to being a jeweller that bring unique ways of seeing, doing and finding insight. The papers in this issue offer the first contribution from JJR to this dialogue that is already alive in the wider field and we look forward to supporting and championing the voices of jewellers as this journal matures.

Editors: Roberta Bernabei, Jayne Wallace & Sandra Wilson.

With thanks to both Nantia Koulidou and Hazel Macdonald for their support in proofreading and template design.

OF CARATS AND CALORIES. AN ARTISTIC EXPLORATION ABOUT BODIES, RITUALS AND NORMS.

AUTHOR

Christoph Zellweger

ABSTRACT

The body has become a luxury item, a malleable precious matter, which can be sculpted, sucked, lifted and invested into. These emerging practices of self-optimisation are offering aesthetic possibilities that have irreversibly changed the way we deal with our bodies and indirectly have challenged our understanding of jewellery and objects to wear. This paper establishes an analogy between the aesthetic promises made by plastic surgeons and the medical industries and the cultural functioning of jewellery as identity and community building artefact. The basis of this analogy will be constructed by means of a conceptual journey that will transit from the realm of carats (jewellery) towards the realm of calories (the body).

The arguments will be developed against the background of research into the public discussions on health, beauty canons and the mediated body that are particularly taking place in social media, scientific and pseudo-scientific internet platforms. Reports from field research conducted as a participant observer in operation theatres will be also presented as a crucial experience that has given valuable insights to move further the artistic exploration of the topic and place it in an interdisciplinary context. Finally, the paper will introduce Zellweger's artworks created during and after the investigation, including art jewellery, fictional products, installations and photography that pose questions on body norms, social pressure and freedom of choice.

This paper has previously been presented at Body Alchemy. Hangzhou Contemporary International Jewellery & Metal Art Triennial, China Academy of Art, Hangzhou, November 2015

INTRODUCTION

“Once people had an interest in how their souls appeared to God; today they have an interest in how their bodies appear to their political surroundings ... The techniques and practices of self-design are questions no one can escape anymore.” (Groys, 2010:36)

Starting from the theses that the human body is unspecialised, not particularly well adapted to any ecological niche and for this reason rather vulnerable, humans unavoidably have transformed themselves into ‘prosthetic animals’ (Catton, 1980). As lacking beings, a term coined by the philosopher Arnold Gehlen in the 1940’s, they use tools to increase their physical and mental abilities and beyond securing the most essential survival needs, they invent artefacts distinctive to communicate their social belonging or define and sharpen their identities. Much of the artefacts made to be worn on the body, like clothes and jewellery, are in addition powerful means of non-verbal communication

Much of the artefacts made to be worn on the body, like clothes and jewellery, are in addition powerful means of non-verbal communication.

The practices of customising and enhancing the body, through technological modifications and replacements has revolutionised the thinking about the human body in the age of the prosthetic impulse (Smith and Morra, 2005). According to political theorist Pietro Morandi ‘Yesterday, the lacking

beings invented wheels and metal wings, in order to increase their mobility. Today, thanks to medical advancements and plastic surgery, they enlarge their breasts or genitals in order to increase their attractiveness, or they modify their facial features and body contours in order to compete with members of the same species for jobs in an increasingly competitive environment' (Morandi, 2007:46). Within the arts, the phenomena gained momentum in the beginning of the 1990's around the 'Post human' exhibition, which explored the implications of genetic engineering, plastic surgery, artificial intelligence, and other forms of body alteration, questioning what it means to be a human being (Deitch, 1992).

As a traditionally trained goldsmith, artist and researcher in a university, I interpret these new realities as an invitation to redefine what body adornment may mean in the 21st Century. It seems that the pertinence of placing objects ONTO the body in order to enhance people's identity and to reflect their social and cultural standing coexists with practices INTO the body itself, as if this were a precious material, a site for design interventions.

Back in the 1980's, after having completed a goldsmith apprenticeship, I got my first job in the luxury jewellery trade in Geneva, Switzerland, where I worked with the most precious materials, 22 carat gold and platinum, as well as weighty gems and where I learned how to compose with their colours and shapes. At that time, I would have never thought that someone would prefer to have their breasts enlarged as a present instead of desiring a fancy necklace from the top-end jeweller I was working for. After an artistic re-orientation in the early 1990's and completing an MA in the metal department at the Royal College of Art in London, I started to deal with the subject of value as a conceptual territory, leaving behind the narrow understanding of preciousness that the realm of pure carats had offered me until then. The carats of my jewellery were not manifested through gems anymore but through material research, aesthetic innovation and social

comment. Despite the use of unconventional materials like polystyrene and medical steel, my enquiry was very much about exploring the notion of value through the creation of jewellery FOR the body, during a period of around 15 years. In that phase, I specifically looked at jewellery, as cultural prostheses and as a poetic extension of the self (Zellweger, 2008 and 2011). After 2009, the aspect of wearing jewellery was gradually losing centrality in my work and I started to capture environments and practices, enlarged dimensions and adopted the language of installation and object art. I found myself creating work that was less FOR the body than ABOUT the body in order to explore the phenomena of body customisation from the perspective of a jewellery maker without explicitly making jewellery. I left the realm of carats to step into the territory of calories. The background of 'jewellery knowledge' informed my questions on how people aesthetically optimise their bodies through surgical interventions for as many reasons as there has been jewellery produced in the past.

I will describe in greater detail the creative journey from carats to calories through four sections in this paper:

Firstly, I will lay out the context for my investigation, developed against the background of the public discussions on health, beauty canons and the mediated body, which are particularly taking place in social media, scientific and pseudo- scientific internet platforms.

Secondly, I will report on field research conducted as a participant observer in operation theatres that has given me valuable insights to move further in this artistic exploration.

Thirdly, I will describe several artworks created during and after the investigation, including art jewellery, fictional products, installations and photography that pose questions on body norms, social pressure and freedom of choice.

And *finally*, I will construct theses on why jewellery offers a valuable perspective that informs a view on

the cultured body as a modifiable artefact, and how an interdisciplinary approach within artistic research can move the discussion further.

CONTEXT OF INVESTIGATION

“Over the past thirty years the new grammar of visual culture, the notion of the consumer as empowered, the workings of the diet, pharmaceutical, food, cosmetic surgery and style industry, and the democratisation of aspiration have made us view the body we live in as a body we can, must and should perfect.” Orbach, 2009 p.135

Through her work as a therapist and author, social critic and psychologist Susie Orbach raises awareness of the problematic relationship that many people, especially women, develop to their bodies. She points out that nowadays nobody takes for granted their bodies anymore and that the imperative of self-improvement has spread amongst neo-liberal post-industrial societies.

Take as an example plastic surgery, which started out as a medical necessity to reconstruct the body parts of heavily injured soldiers after World War I: today it has turned into a flourishing industry concerned with normative aspects of aestheticizing the body on an inter-cultural scale. One can integrate plastic surgery into a much longer and ancient lineage, if you consider that tattoos, scarifications, (de)forming skulls and feet are interventions probably as old as creating sophisticated objects attached to garments, which is currently dominating our understanding of body adornment. Our bodies are increasingly being experienced as objects themselves to be improved and worked on. In the quest for an optimised body that incarnates beauty, wealth, health and success, larger parts of society on all continents and beyond social classes are engaging in various fat managing



Figure 1. Ritual object III. Ironing board, leather, steel. Exhibition view Rituals of Self Design. Photo: C.Zellweger

activities. Beyond calculating calories or burning fat on workout equipment, modifying and adorning the body now takes place in operating theatres, which, besides irreversibly changing peoples' perception about their body-image can be potentially addictive (Pitts-Taylor, 2007). The human body and the personal objects that we wear on and below our skin are shaped by social and cultural forces, which are in constant definition and negotiation. The body has become a discursive battle ground, where actors coming from such diverse fields as fashion, health and nutrition industry, social media or marketing, all of them have a say. From these stake holders, I am going to focus on the mediatisation of the body in the context of Internet platforms as an influential context of discussion. (Figure 1)

The visual culture of the internet provides not only a flow of real and manipulated images but also brand new beauty canons, body ideals and fantasy features

that contribute to the discussion on reshaping the body. Artists have reflected on and reacted to these rising issues through “carnal art” (Orlan), “technological enhancement” (Stelarc) and disquieting images of branded bodies through photography (Buetti). The media broadcast a reality, where skin imperfections, double chins or a hairy belly simply do not exist. Especially for young people it is difficult to not feel excluded if the hegemony of perfect images becomes the standard. It needs some confidence, life experience or wit to stand up and reclaim territory against the uniformisation of the body discourse. For example, internet platforms where fat women discuss strategies to contest the gendered anti-fat discourses perpetuated by the media, governments and institutions of public health (Afful & Ricciardelli, 2015). There are bloggers who retouch the images of celebrities in order to ridicule them by making them look just ‘normal’, as a way to inspire some kind of collective catharsis against the pressure to look always perfect. Making people feel inadequate in their skins, insecure about their weight, their diet, their look and therefore in need of professional support, are strategies that are promoted by the food, fashion, pharmaceutical and medical industry. A superficial web research provides an immense amount of results when health, beauty and business are at stake. The food industry finances research studies that both inform and dis-inform the population.

Scientists seem to permanently find new evidence and later on prove last year’s insights either incomplete or even wrong. A wave of critical documentaries have dealt with such contradictions, like ‘That Sugar Film’ (Damon Gameau, 2014) on the scandals of the sugar industry, and ‘Fed Up’ (Stephanie Soechtig, 2014), which also addresses the large quantities of sugar contained in processed foods and the on-going attitude of the sugar lobby to blocking any attempts to enact policies to address the issue. In 2013 researchers at the New University of Virginia (UVA, 2013)

gathered and analysed data from more than 10.000 American children between ages 2 and 4. They found that children drinking skimmed milk were actually more likely to become overweight. If ‘fat free’ was once a successful mantra to attract weight watchers, now it has to co-exist with slogans like ‘Eat Fat, Lose Fat’ (Fallon and Enig, 2005), which is validated by experts, but against the interest of the industries and their commercially highly successful free-fat product ranges. Organisations like the Yale Rudd Centre for Food Policy and Obesity, are non-profit research and public policy institutions devoted to improving the world’s diet, preventing obesity, and reducing weight stigma. This centre raises awareness about the dangers of, for example, energy drinks that will provide you with wings and that zero calories are better for you. Reports (Rudd Report, 2012) have shown that these drinks are likely to confuse the body metabolism and that added sugar is one of the main causes of health problems beyond obesity, but also for learning disorders and depression.

The centre has engaged in the controversy about the decision of the American Medical Association to make Obesity a disease. This step could be seen as a way to undermine the integrity of individuals with over-weight, by defining them as ‘to be treated’. Many times, scientific evidence is instrumentally produced with the intention to serve political or economic advantages, while perpetuating the marginalisation of certain social groups.

The web research on the topic has shown that the discourse on body norms is ubiquitous and of global relevance, while at the same time the information is scattered amongst fragmentary reports, poorly referenced, treated in a sensationalist way and the authorship of pretend scientific reports is often quite opaque. Counting calories, measuring waistlines, stepping on a scale, or calculating BMI index came across as contemporary rituals of self-control and self-evaluation, further encouraged by new software technologies

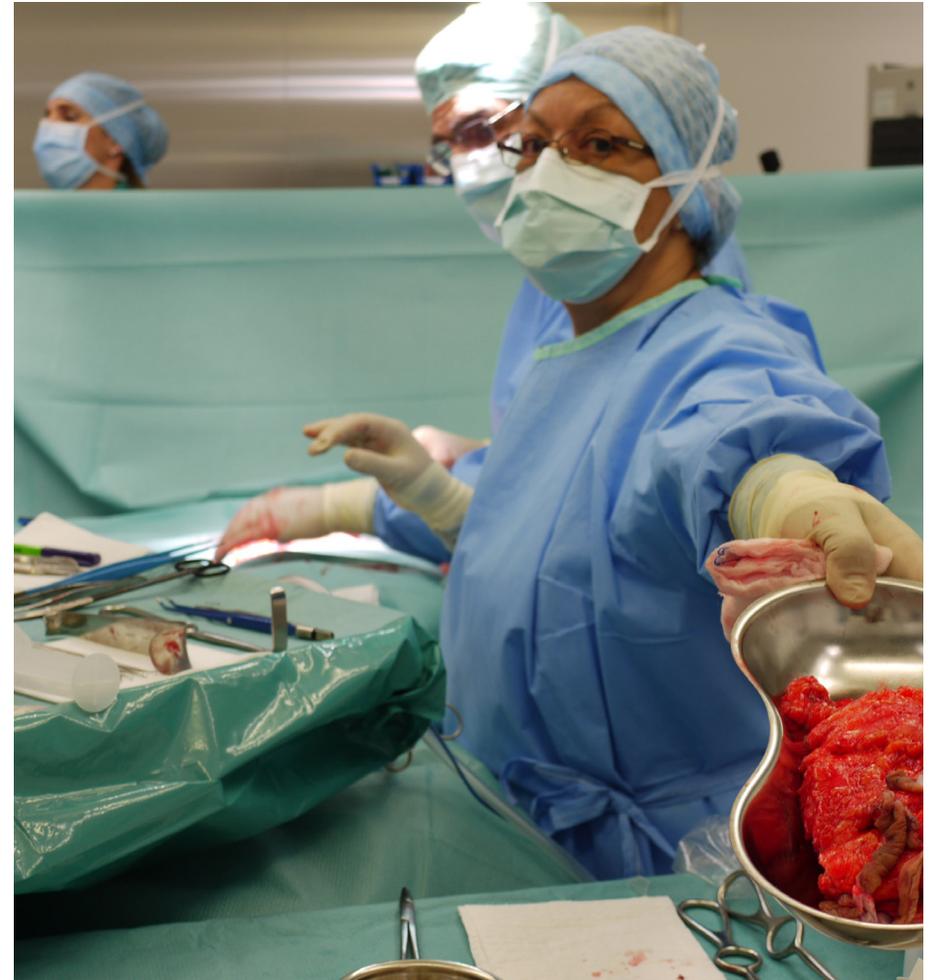
(Apps) that have turned the phenomena of the ‘quantified self’ into a trend. Irritated by how the media narrow perceptions about the right body, the right weight, or the right way of living to simple governance of numbers, I decided to change my strategy.

GOING IN: AN ETHNOGRAPHY OF THE OPERATION THEATRE

Around 2008, I reached a point where citing the above-mentioned literature and books publically available was not enough anymore. The deeper I got into the topic, the less I trusted the second-hand data I had acquired. The conclusion of the above presented web research was that the widespread acceptance of practices of body improvement had a massive effect on people’s imagination about how to improve their appearance and re-shape both their physical and psychical identities. Amongst several contemporary body modification practices I decided to focus on the phenomena of plastic surgery, since it is an invasive strategy that explicitly involves aesthetic claims. At first, the idea to enter an operation theatre and spend time alongside surgeons at work felt a bit odd for a visual artist and object maker.

Nevertheless, I sensed that extending my enquiry into an interdisciplinary territory would not only challenge my view of the human body, it would offer me new insights and move forward my artistic practice (Figure 2, Figure 3).

The opportunity to enter an operation theatre and observe surgical operations came when I was lucky enough to be introduced to an experienced female plastic surgeon from the French-part of Switzerland who invited me to watch her operate in a private clinic. Interested in art and philosophy herself, we found common ground. Talking to her and ultimately also to her colleagues, assistants and patients opened further doors, so that more questions and ideas continued to evolve through watching and listening.



From 2009 until 2015 I could attend various operations as an observer. I saw breast reconstructions after mastectomy, breast enlargements and reductions, tumour removals, but most of all sessions of liposuction and lipofilling in diverse regions of the body (abdomen, thighs, hips, face). From a methodological point of view, it is important to note that I did

Figure 2. Photography, Excess Fat, 2011. Photo: C.Zellweger



Figure 3. Christoph Zellweger, Excess Fluid, 2012. Pendant, glass, vacuum deposition. Photo: C.Zellweger

not and still do not enter the operation theatre with a specific plan. I go in with an open mind and curiosity and follow what happens in front of me. My camera is usually on my side but not always needed or useful. I watch and listen, I smell, look at tools and processes, I try to predict what the surgeon will do next, I learn and contemplate, I ask questions, I listen

to the on-going conversations of the team at work. I have been astounded by the clinical procedures, initially confused by the forces which are needed to cut and stitch lumps of human flesh. The body appears to be first of all 'material' in the surgeon's hands. Under narcosis, the 'individual', the 'character' attached to the body, as the surgeon said, 'has to move out of my sight'. The surgeon has to deal with the physical body 'safely, effectively, professionally and without delay', to quote the surgeons explanation. It is sometimes hard to understand the reasons that move healthy patients to undergo such heavy and sometimes draining and risky interventions, so I also talked to the patients to broaden my view.

During one operation, I found myself feeling highly empathic with the patient, another time not. I wondered about the anaesthetist's state of mind and what concerns her when she is looking bored while keeping the body she is responsible for alive. I quickly learned that my presence in the operation theatre is a welcome challenge to the otherwise monotonous routines. I talked with surgeons and assistants and continued to be impressed by their manual skills and focus. Witnessing plastic surgery operations has made me become further aware of the body's fragility and vulnerability but more so its tremendous malleability and capability to recover. (Figure 4)

Witnessing plastic surgery operations has made me become further aware of the body's fragility and vulnerability but more so its tremendous malleability and capability to recover.

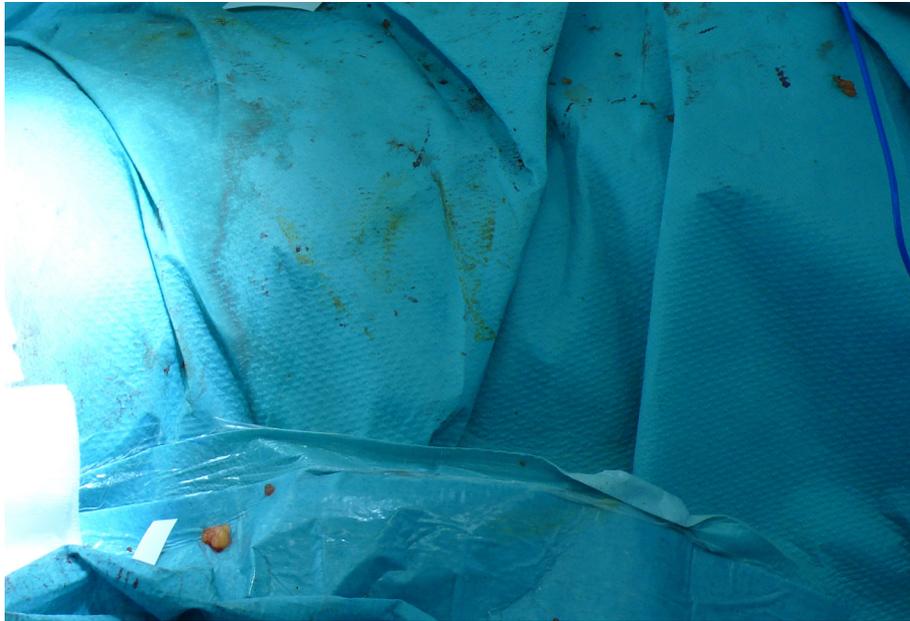


Figure 4. Photography. covered body after surgery, 2011. Photo: C.Zellweger

During one of the operations, I noticed a tiny piece of fat that was left, a bit hidden, but still in the limelight on the large blue tissue that covered the patient after going through some major fat removal from her abdomen. I wondered how exactly this piece got there, I also got a little sentimental, thinking about displacement and the fate of that little piece of flesh in the coming hours. It had once been part of that human laying in front of me. What will happen to that physical token of biographical moments of pleasure and indulgence, which later on caused the patient so much personal discomfort and pain? The question about the fate of fat turned out to become a philosophical one: the displacement of embodied memories, a part of one's identity left unattended on top of a blue blanket. Nevertheless, on my question put to the surgeon about what happens to the removed fat, once it has been weighed on a kitchen scale, there was no convincing answer but I also did not need one. I kept thinking about

I also got a little sentimental, thinking about displacement and the fate of that little piece of flesh in the coming hours.

tons of migrating human excess fat being wasted every year. I recalled the artist Stelarc making a dystopian statement about 'a future of organs without bodies and bodies without organs', which has gained an uncanny currency, considering the latest developments in 3D printing of organs in the laboratory. Body parts become commodities, even luxury items in the age of the post-human condition.

BODIES OF WORK: 'EXCESSORIES' AND 'RITUALS OF SELF DESIGN'

The experiences and insights gained during the participant observation conducted in the operating room led to the development of body-related objects and jewellery responding to factual, fictional and ethical dimensions of the subject. The 'Excess' series (2012) in glass and the more complex body of work 'Rituals of Self Design' (2013/14) were the subject of major solo exhibitions. Through these works I addressed the issues I wish to understand in depth and took my findings into the public domain in hope for emotional and intellectual responses. Both exhibitions offered multiple readings of a contemporary phenomenon, that borders issues on health and wealth, on dignity and obsession.

I have seen a lot of liposuction, lipoaspiration and lipofilling, which made me realise that a lot of plastic surgery is actually about the re-distribution of bodily fat or the faking of fat through implants. I asked the surgeons if there was data about that fat and what happened to it. I gained access to some operation protocols, where the surgical interventions were described and the amount of removed, added, swapped



Figure 5. Christoph Zellweger, Excess 2550, 2012. blown glass, laser-print on glass. Photo: C.Zellweger

or shifted fat was registered in cubic centilitres. When studying these data sources, I saw the pertinence of following the diverse fates of fat and how we deal with it in today's society through the creation of artistic work.

'Excessories- let's talk about FAT' became the visceral title of the solo exhibition I presented at the Gallery Louise Smit in Amsterdam. I chose the title EXCESSORIES since it played with the affinity to the word 'accessory', common in the jewellery and fashion context, and also introduced the idea of 'excess', which best defines today's social habits of consumption. 'Excess' is also contained in the etymological origin of the word 'luxury'. What exceeds, what overflows, is the most exuberant side of nature and this is often manifested in the form of fat. These works were made up of empty, translucent volumes of blown glass with an organic pouches-like quality (Figure 5 and Figure 6). I used laboratory glass and picked up the glass blowing techniques



Figure 6. Christoph Zellweger, Excess 329, 2012. blown glass, laser-print on glass. operation protocol. Photo: C. Zellweger

from a professional to afterwards produce the glass elements one by one in my own studio. I sand-blasted some of the pieces and vapour-coated others, in order to achieve a perfect mirroring surface on a form that resembled a fluid substance. The idea of the excess of fat becoming something precious, where you can reflect yourself in and that invites you to indulge in vanity made a perfect jewel (Figure 11).

Each of the glass objects, mostly pendants, was marked with a weight reference coming from operation protocols. The figures reported on the diverse fates of fat of past operations to become metaphors for absence, gain and loss. The aspect of loss was important in these works, as a way to critique the intense social pressure for breast reconstructions that women undergo, as if they were forced to forget entirely the experience of loss, leaving them with no room to come to terms with their new appearance. My jewellery aimed to objectify the loss into something precious and turn it into

My jewellery aimed to objectify the loss into something precious and turn it into a talisman with a potential to re-empower a woman.

a talisman with a potential to re-empower a woman. In the exhibition, these works would hang from a steel coat rack with a clinical look, against a backlit shower curtain. Behind that curtain the exhibition continued with more related works (Figure 7). Closest to the entrance a single photograph provided a conceptual and visual link to the surgical practices that related to the objects on display. The opening was busy and the discussions lively with many visitors talking to the invited plastic surgeon I worked with, with the gallerist and myself about their own relationship with surgery and the conceptual link with contemporary jewellery. One highlight of that evening was when a collector felt like sharing her personal story. I was asked if I would consider creating a piece for her after she had undergone surgery to reduce the size of her breasts, a long term wish she had after the birth of her two children. She suggested that to complete the story I should be witnessing the operation to come up with an original artwork. In a check-up in preparation for the operation the doctor found out that there were medical reasons why this operation should not take place, so our project stayed on hold. I felt privileged for having been asked to make an artwork for capturing a major moment in someone's life. This is one of the most fascinating qualities a piece of jewellery can offer: its ability to mark rituals of passage, as physical landmarks of enhanced biographical intensity.

Under the title 'Rituals of Self Design' I brought together work developed between 2012 and 2013 that was



presented in a solo exhibition at the art pavilion of the Overbeck Art Society in Luebeck (Germany). The three rooms of 140 m2 in total offered me the opportunity to test how a temporary exhibition can be used as an artistic media in itself as much as an important discursive element in artistic research. This attitude accompanies me since

Figure 7. Exhibition view from Excessories, let's talk about FAT. Galerie Louise Smit, Amsterdam, 2012. Photo: C.Zellweger



Figure 8. Exhibition view
Rituals of Self Design,
curtain. Overbeck
Gesellschaft, Luebeck,
2014.
Photo: C.Zellweger



Figure 9. Ritual Object II,
scale, glass, sugar. 2013.
Photo: C.Zellweger

2005 and I consciously have left aside the conventional circuit of contemporary jewellery galleries in order to explore alternative venues where to communicate my work. The authors Den Besten (2011) and Bernabei (2015) have respectively analysed this aspect of my practice.

The exhibition *Rituals of Self Design* was articulated through the following analogy: Home improvement as the activity of decorating domestic interiors and body improvement, as the optimization of one's own body, which is also home of the self. Between design fictions and object-based art installations the show set up to investigate the merging between medical techniques of self-design and the everydayness of domestic interiors. I wanted to expose the domestication of the operation theatre as a result of the increasing popularity of plastic surgery, which has become an accessible consuming habit to large parts of society that consider the body as a design matter. Some of the works had indeed a furniture-like character. Other works were more sculptural, simulating devices to measure the body (Figure 9) and that visitors were allowed to interact with, like a scale that didn't register any weight but confronted the viewer with two glass spheres, half filled with sugar that seemed to remind that "the body is a site of corporate inscription" (Jain, 1999). By utilising chrome, leather and glass amongst other well established and understood materials, I appropriated in a critical manner the grammar of modern design. Regardless of the size of the works, my approach remained the one of a precious jewellery maker, which means that each object was made well and subject to the symbolism of the chosen materials. The exhibition composed a conceptual environment, where both aesthetic contemplation and interaction were encouraged. The artworks had an affinity to *Critical Design* (Dunne and Raby, 2014), in the way that I confronted the audiences with future scenarios and fictional products through a rigorous merging of artistic, social and medical approaches. The show turned out to attract



Figure 10. Wall of Ovals, leather, steel. 2013. Photo: Christoph Zellweger

an unusual high amount of public, over a thousand counted visitors saw the exhibition, which was extended for two additional weeks.

CONCLUSION

In this paper, I have established a link between the aesthetic promises made by plastic surgeons and the medical industries and the commercial and cultural functioning of jewellery as identity building artefact. In order to do so, I have followed two strategies.

The methodological shift from a studio-based individual practice to an interdisciplinary collaboration with plastic surgeons, which offered me first-hand insights and original data. I have learned and adapted surgical techniques into my work and established aesthetic and conceptual links with a medical iconography.



Figure 11. Christoph Zellweger, Excess Fluid, 2012. Pendant, glass, metallised (vacuum deposition). Photo: C Zellweger

Secondly, expanding the traditional understanding of jewellery has allowed me to unleash its embedded knowledge, i.e. jewellery's ability to deal with perceptions of identity, meaning and distinction.

In the contemporary quest of self-improvement, adorning the body means re-designing and re-imagining

it. Much like what happens in the art-world with its value creating mechanisms around the artist's signature, operated people recognise each other, mingle or avoid each other, create subtle or obvious communities by identifying the surgeons', the designers', the artists' hand. My research has confirmed that both, jewellery and plastic surgery, articulate acts of identification and community building in a similar way. The engagement in designing the body towards our ideals and desires, means objectifying and commodify it and turning it into something, that can be sculpted, polished and invested into.

Witnessing plastic surgery operations has made me become further aware of the body's vulnerability as much as of its resilience. The making of artistic work informed by these insights has proved effective to generate public debate, where jewellery simultaneously enables, accompanies and denounces rituals of self-design. In particular, jewellery's ability to objectify loss and attachment in the tradition of sentimental and mourning objects, adopted in this context an unexpected new currency.

From the interdisciplinary collaborations, I learned about the surgeons' pride as 'designer-makers' and that their reflections in action, to use Donald Schön's terminology, were involving several aesthetic and intuitive decisions, that are not being addressed in the public discussion I have described in the first part of the paper. Therefore, the two introduced bodies of work (Excessories and Rituals of Self Design) confronted the medical community with a possible 'blind spot': on the one hand, there seems to not be much awareness about how normative their aesthetic decision-making is; on the other, that there is little debate on aesthetic visions in relation to mental and physical health. As a surgeon said at a conference on ethics and the integrity of the body, (University of Zurich, 2013) my work was contributing to visualise a necessary discourse. From the incursions in the fields of medical and social sciences it became clear,

that there is a valuable transferable knowledge embedded in jewellery.

From the incursions in the fields of medical and social sciences it became clear, that there is a valuable transferable knowledge embedded in jewellery.

This research has shown that carats and calories are in fact both sides of the same coin. In the face of the new directions of social rituals, alternative socio-political scenarios and technological departures, jewellery continues to provide a valuable perspective that informs a view on the cultured body as modifiable artefact. Through a jewellery perspective it is possible to create engaging work, meaningful body images and generate a critique 'from within'. Blurring the borders between design and ethics, medicine and art, responding to the current phenomena of de-territorialisation and de-hierarchisation of aesthetic practices, is where the interdisciplinary work presented in this paper proved to be most promising and where further research could be carried out.

REFERENCES

1. AFFUL, A. A. and RICCIARDELLI, R., 2015. Shaping the online fat acceptance movement: talking about body image and beauty standards. In: *Journal of Gender Studies*, 24(4), pp.453-472.
2. BERNABEI, R., 2017. Jewellery can be worn too. In: MYZELEV, A., (ed). In: *Exhibiting Craft and Design in the 20th century: Tchotchkes in the white cube*, London: Routledge, p. 107-125.
3. BERNABEI, R., 2011. *Contemporary Jewellers: Interviews with European Artists*. Oxford, New York: Berg. In: *Interview Christoph Zellweger*. pp. 226-232.
4. CATTON, W. Jr., 1980. *Overshoot: The Ecological Basis of Revolutionary Change*. University of Illinois Press: 1980.
5. DEITCH, J., 1992. *Posthuman*. New York: Art Publishers.
6. DEN BESTEN, L., 2011. *On Jewellery, A Compendium of International Contemporary Art Jewellery*. Stuttgart: Arnoldsche. pp. 134, 135.
7. DUNNE & RABY, 2013. *Speculative Everything. Design, Fiction and Social Dreaming*. MIT FALLON, S. and ENIG, M., 2005. *Eat Fat, Lose Fat*. New York: Hudson Street Press
8. GEHLEN, A., 1940. *Der Mensch, seine Natur und seine Stellung in der Welt*. Berlin: Junker und Dünnhaupt.
9. GROYS, B., 2010. *Going Public*. Berlin: Sternberg Press.
10. JAIN, S. S., 1999. The Prosthetic Imagination: Enabling and Disabling the Prosthesis Trope, in *Science, Technology, & Human Values*. Winter, 24(1), pp. 31-54.
11. MORANDI, P., 2007. Jewellery as prostheses. Body design in bio-political discourse. In: Gaspar, M., ed., 2007. *Christoph Zellweger. Foreign Bodies*. Barcelona: Actar.

12. ORBACH, S., 2009. *Bodies*. London: Profile Books.
13. PITTS-TAYLOR, V., 2007. *Surgery Junkies, Wellness and Pathology in Cosmetic Culture*. London: Rutgers University Press.
14. PUHL, R. M. and HEUER, C. A., 2009. The Stigma of Obesity. A Review and Update. In:
15. *Reviews on Epidemiology*. Nature Publishing Group. *Obesity*, 17(5) May 2009, pp. 941-964.
16. RUDD REPORT, May 2012. In: *Trends in Television Fod Advertising To young people*. Viewed 12 Nov 2017. Available from: http://www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReport_TVFoodAdvertising_5.12.pdf
17. SMITH, M. and MORRA, J., eds., 2005. *The Prosthetic Impulse. From a Posthuman Present to a Biocultural Future*. Cambridge: The MIT Press.
18. UNIVERSITY OF ZURICH, 2013. *Integrity of the body*. In: *Conference program*, Viewed 12 Nov 2017. Available from: www.bioethics.ch/dms/sgbe/agenda/Integrite_SSEB_programme_2013
19. ZELLWEGER, C., 2008. *Foreign Bodies. Jewellery as Prosthesis*. In: *Design Research Society Quarterly*, 3(4) October 2008.
20. ZELLWEGER, C., 2010. *Upgrade. Perspectives in Corporeal Design. Workshop*. in WIEDMER, M., ed. 2010, *Negotiating Futures: Design Fiction*. Papers of the 6th Swiss Design Network Conference. Basel: FHNW. p. 213.
21. ZELLWEGER, C., 2011. *Jewellery as Prosthesis. Extending the Definition of Body Adornment*, pp. 190-199. In: ATKINSON, P. and WHANG, Z. eds., *Designing Impact! Approaches to Applied Research*. Sheffield Hallam University and China Central Academy of Fine Arts. Printed by Northern Creative Print Solutions.
22. ZELLWEGER, C., 2011. *26 stitches. Extending the definition of body adornment today*. In: *Portrait section of Journal of Craft Research*, Vol. 2 Issue 1, April 2011. pp. 151 -160.
23. ZELLWEGER, C., 2012. *Incredibles: An artistic Perspective on Corporeal Design*. In: Yoxall, A., ed. *Proceedings of the 1st European Conference on Design 4 Health 2011 (Sheffield, 13-15th July 2011)*. Sheffield Hallam University, 2012. pp. 390 – 402.

ABOUT THE AUTHOR

Christoph Zellweger
Professor of Art & Design
Sheffield Hallam University Faculty of Arts, Computing,
Engineering & Sciences Cantor Building / R 9104 153
Arundel Street Sheffield S1 2NU
edu@christophzellweger.com

Christoph Zellweger is a Swiss craftsman, a goldsmith and model-maker, who turned towards an interdisciplinary, critical and experimental practice, when expanding and challenging his own tradition and the field at the Royal College of Art. He exhibits internationally and holds a part-time professorial post at Sheffield Hallam University since 2003.

JJR journal of
jewellery
research

Journal of Jewellery Research
<http://www.journalofjewelleryresearch.org>

ISSN 2516-337X

Loughborough University,
Northumbria University &
University of Dundee.
First published in February 2018, UK.
Copyright © Journal of Jewellery
Research and the author.
All rights reserved. Apart from fair
dealing for the purposes of study,
research, criticism or review, as
permitted under the applicable
copyright legislation, no part of
this work may be reproduced by any
process without written permission
from the publisher or author.
For permissions and other inquiries,
please contact the editors:
<editorsjor@gmail.com>
Journal of Jewellery Research is a
double blind peer-reviewed research
journal supported by an International
Editorial Advisory Group.

WHY SHOULD JEWELLERS CARE ABOUT THE DIGITAL?

AUTHOR

Nantia Koulidou

ABSTRACT

The widespread development of technological components that could be miniaturised and worn on the body has opened new possibilities for jewellers to explore the intersection of jewellery practices and the capabilities of digital technologies. Increasingly jewellery can play a role in valuing the body, understanding, amplifying and highlighting the body. However, this area remains under-explored within the contemporary jewellery practice.

This paper provides a critical review of digital jewellery practice from a jeweller's perspective and offers the grounding for a framework for understanding digital jewellery that reveals its potential within people's lives. The research seeks to explore the more poetic qualities of interaction with digital technologies that can enrich intimacy with other people, places and ultimately the self.

For clarity, digital jewellery refers to jewellery objects which contain electronic components. Similar terms are in use by practitioners across disciplines, such as smart jewellery, computational jewellery, tech jewellery and the interpretation of the terms may vary from one discipline to the other. I have chosen the term digital jewellery, not as a limitation, but as a starting point of the discussion around the potential role of digital worn objects in our lives.

INTRODUCTION

The potential of synthesising digital technologies into jewellery practices has been presented widely by big corporates and to a lesser extent by jewellers. Additionally, research that focuses on the personal meaningful digital objects is limited and not often not within the jewellery practice. More specific, jewellers seem to lack an understanding of the potential of digital as a material in their existing practices and technologists seem to lack the

knowledge on the history and role of jewellery in peoples' lives. The functions of jewellery pieces are often rooted in rituals and ceremonial activities, in personal values and adornment, the supernatural power of jewellery to connect people with others in different spaces and time and the close relationship between jewellery and body (Besten, 2011; Cheung, 2006; Dormer, 1994). These aspects have often been neglected by big corporates. Either for sports, medical purposes or high-tech special effects in the catwalk, the body is often understood as data that can be tracked and manipulated and jewellery as a convenient place to host electronics.

Busch (2015) highlights that *"it is hard to argue against the efficiency of all this self-improvement, but it is equally hard not to wonder at what point self-awareness evolves into narcissism"*. How much do we want to monitor ourselves? How much information is too much?" Jewellers

Jewellers can contribute more to the conversation of what it means for humans to be wearing wearable devices. Raising their concerns, issues of privacy and intimacy.

can contribute more to the conversation of what it means for humans to be wearing these devices raising their concerns, issues of privacy and intimacy. Such concerns are more fundamental to the practice of making jewellery rather

than the practice of fashion or product design (Busch, 2015). Gaspar (2013) highlights that jewellers have a deep understanding of how personal objects “vehiculate” and materialise identity and [jewellers have the expertise] in creating and transmitting value, an aware of the political, societal and cultural implications of their designs. Therefore, if we are to assert the relevance of our discipline within our current culture and the future of our field, we need to engage with the challenges of these questions:

*How can the digital help us understand the self?
What is the value of a new way of imaging the body
through the digital? Can we as jewellers add value to
this process?*

Digital jewellery as part of Wearable Technology

Today an increasing number of devices are considered intimately linked to the body. Many such devices are used to track body fitness, manage phone calls and messages or notifications from social-media. As communication devices, they have some of the functionalities of a mobile phone; receive calls, send reminders and notifications. As objects worn on the human body, they are small in size and typically have limited functionality, with minimal interfaces - compact displays and lower computing power. A characteristic of these devices is that they are connected to faster computing devices. They are often supported by an application that can be accessed via an Android or iOS phone, while the device works in the background.

In the digital age jewellery gained interest as objects already worn on the body. The digital information conveyed in rings, bracelets, necklaces, and wristbands is a generation of devices worn on the body, widely known as wearable technology (Ryan, 2014). Even though wearable technology has been around for decades, it had gained

acceptance when it was introduced as aesthetic, appealing jewellery objects and then as functional devices (Miner et al., 2001). The term “digital jewellery” was first introduced as wearable technology for every day, when traditional forms of adornment are involved with wearable and digital technologies (ibid).

One of the early examples of digital jewellery is the IBM set, a digital jewellery prototype of a cell phone that consists of several jewellery pieces that work together wirelessly. Speakers embedded into these earrings will be the phone’s receiver, a necklace with an embedded microphone, a “magic decoder ring” equipped with LED to indicate an incoming call and a bracelet equipped with a video graphics array (VGA) display which could be used as a caller identifier that flashed the name and the phone number of the caller. The main intention of IBM’s Almaden designLab was to make technology part of our daily life with the help of jewellery pieces connected with wireless networking system.

“Worn throughout the day, digital jewellery could connect the user anytime, anywhere to information, business, and communication services. Within its known placement on the body, jewellery forms can be used as an intuitive interface” Cameron Miner, 2001

In the more recent Human-Computer Interaction (HCI) literature, Jain (2015) defines digital jewellery as “ fashion jewellery that allow you to communicate by ways of e-mail, voicemail, and voice communication or “wearable ID devices that contain personal information like passwords, identification, and account information” . Activity monitors for fitness purposes provide the wearers with detailed information on their everyday practices; count steps, measure heartbeat and record biosensory data in real time. Since the first digital jewellery to embed functions of digital devices in existing worn objects, jewellery continues to gain interest

Why should jewellers care about the Digital?

Figure 1. (left) Flex 2 Fitbit accessories (to encase Fitbit Flex tracker) (right) A picture of an iOS phone with the Fitbit application.

Silver, gold, electronic components.

Source: Press Kit. Image courtesy of Fitbit



Figure 2. The Smart Heart cardiac monitor necklace by Leah Heiss, 2016 in collaboration with St. Vincent's Hospital Melbourne, RMIT University, and the Nossal Institute for Global Health,

3d printed parts, conductive threads, sensors

Source: Leah Heiss © 2016 all rights reserved. Image courtesy of the artist.



with more recent examples presented as luxurious smart accessories. Companies such as Nike, Fitbit or Jawbone collaborated with jewellery designers, for example, Tory Burch for Fitbit and Yves Behar for Jawbone UP3 Wristbands to produce luxurious cases for the fitness trackers (see Figure 1).

The functions of the human body, within the wearable technology era, are observed analytically with a view of curing, correcting and enhancing performance. Arguably, wearable technology often relies on technological solutions that focus on functionality and efficiency. It often takes a diagnostic approach such as sensing and displaying the wearers' emotions and assumes a view of the body as data (Ryan, 2014) as something that can be controlled (Höök, 2013). I agree with Wallace (2007) that most of the existing examples of wearable technology offer a limited interpretation of what digital jewellery could be, limiting the integration of digital technologies and jewellery to the aesthetics of the archetypes of jewellery and its use as a case for digital components.

Digital jewellery as part of wearable health devices

There is a long history of medical devices being worn on the body, but were scarcely considered as pieces of jewellery rather the opposite; as devices that stigmatize the wearer and affect their sense of self in a negative way. With the miniaturisation of the electronic components and the advances in digital technology sensors become tiny and affordable and new ways of fabrication has started the conversation on how these devices can be made as beautiful objects. In the recent years some examples of medical devices are presented as pieces of digital jewellery that people would like to wear and cherish. Examples from the research field the *Diabetes Necklace* (Heiss, 2008), *Smart Heart* (Heiss et al., 2016) (see Figure 2) or the pre-order product *Olive Next-Gen*

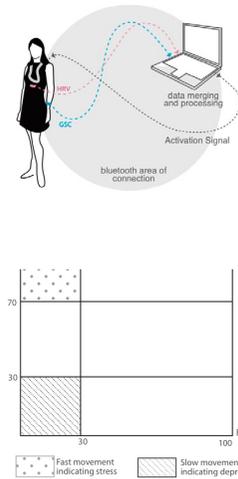


Figure 3 Skin-Bone by Sesil Ugur, 2011. Soft material, sensors, electrical motor wireless network

Seçil Ugur Yavuz © 2013 all rights reserved. Photographer Masha Ru. Image courtesy of the artist.

Figure 4 Detail on how the Skin&Bone prototype works. Code patterns for stress levels.

Seçil Ugur Yavuz © 2013 all rights reserved. Image courtesy of the artist.

(2017) present a range of discreet and beautifully designed housings for therapeutics. These examples of wearable health devices start with the intended function. From a social perspective, such objects have the potential to make people feel better about themselves and their condition, and this is really valuable. However, the synthesis of jewellery and digital technologies is often limited to the requirements imposed by the health condition and often jewellery, in this context, serves as “a nice box” to host the technological equipment. Moreover, the functionality of a wearable health device limits the form of the piece and its relationship with the body.

Digital jewellery: Visualising Emotions The expressions of the body are at the core of many research projects in the field of fashion. Computationally controlled garments and accessories detect changes of temperatures, moisture and transmit messages in the form of light, visual

graphics and movement making visible bodily states. Vein 2 (Fusakul, 2002) and Skin-Bone (Ugur et al., 2011) (see Figure 3,4) are examples of digital jewellery that detect changes on emotional status of the wearer and respond with movement (Skin-Bone) and light (Vein2). Vein2 changes colour as the wearer’s heartbeat increased and Skin-Bone interprets the wearer’s inner state through the movement of the prototype. When the wearer reaches a stress level, the necklace starts moving up to the neck. By pulling the necklace down the wearer can be aware of her/his emotional state. Both Fusakul and Ugur, have created objects that display emotional changes in the wearer. However, Ugur’s object also displayed emotions in a social and discursive way in order to better understand the limitations of this type of interactive object. But to what extent and in which setting do we want to visualise our emotions?

DIGITAL JEWELLERY AND SENSE OF SELF

Over the last two decades, the discussion around the significant role of digital worn objects and the experiential qualities of wearable technology has been opened up and new perspectives and methods from researchers suggested new ways of integrating digital worn objects in peoples’ lives. Artists and designers fascinated with technology explored not just “*what it is that we can do with technology, but what technology tells us about ourselves*” (Ryan, 2014:7).

This is an era in which jewellers can contribute with an understanding of what it means for humans to be wearing these devices (White and Steel, 2007, Busch, 2015). This discussion is about where digital jewellery finds its role and significance.

Researchers with a contemporary jewellery background, such as Jayne Wallace (2008, 2010, 2017), Leah Heiss (2016) and Hazel White (2008) and more recently Maarten Versteeg (2017) show a great interest to explore how

“We associate jewellery objects easily to a person, real or imagined. Jewellery is not for something; it is for and of someone”
Lin Cheung, 2013

“Jewellery becomes more than objects; They are connectors” Petra Ahde-Deal, 2013

“Jewellery often functions as a symbol of self, as a signifier of aspects of identity, as a conduit to transport us to other times, places and people, and as a receptacle for our feelings of that associated other”
Jayne Wallace, 2007



the combination of jewellery and technology could engender interactions with emotional significance for the wearer. In their explorations “the digital” becomes another material to incorporate into their practice and not the ultimate goal. By revisiting the role jewellery could play in peoples’ lives, they explored how digital jewellery could expand its social role to act as a symbol of self and become a mediator to connect with others through the integration of digital technologies.

Digital Jewellery and Personal Memories

Pieces of digital jewellery can act as enablers to access visual and audio data, helping the wearer to connect with their own narratives. In addition, the materials support this connection between the wearer and the piece.

An example of this exploration is the piece *Lens* (2007) by Hazel White (see Figure 5). The piece is a pendant which looks and feels like a smooth piece of glass that has

Figure 5. *Lens* by Hazel White 2008, a) The piece b) Detail on the pendant’s reflection in the mirror.

glass, electronic components.

Source: Hazel White © 2008 all rights reserved. Image courtesy of the artist.



Figure 6. A digital locket, Purple by Purple Technologies, LLC 2014. Concept prototype

Purple Technologies, LLC © 2014 all rights reserved. Image courtesy of Purple Technologies, LLC

been washed up by the sea, and serves as a memento of the wearer's family holiday on the Isle of Skye. When the viewer holds the piece up to a mirror in his/her house, an image of skimming stones across the water appears against the landscape of Skye (White and Steel, 2007). *Lens* invites the wearer for an intriguing and site-specific interaction. It is intriguing because only a part of the picture is revealed from the pendant's reflection on the mirror, inviting the wearer to move the pendant and explore the landscape of the Isle of Skye only in glimpses. The interaction is site-specific because it can happen in a specific location.

Another example is the piece *Purple Locket* (2015) (see Figure 6) by Purple Technologies, LLC. The piece is a concept prototype of a digital locket that stores digital pictures, which takes into consideration the long history of lockets to commemorate the memory of a beloved one or become a token for affection (Luthi, 2001). Similarly, digital



Figure 7. Digital lockets Remember, Forget, Daguerre and Orpheus by Jayne Wallace 2010 The prototype was made in collaboration with James Thomas and Derek Anderson.

Silver, electronic components

Jayne Wallace © 2010 all rights reserved. Image courtesy of the artist

pictures are hidden inside the digital locket. The piece does not have a USB charger; rather it charges when it is placed in the accompanying box and the symbolic shape of the locket indicates its sentimental value and its intimate connection. However, the interaction with the piece relies heavily on familiar interaction with mobile phones. In comparison, the digital lockets *Remember, Forget, Daguerre and Orpheus* (2010) by Jayne Wallace (see Figure 7) explores "different framings of what a digital locket implies by unpicking assumed qualities of digital technologies and considering alternatives" (Olivier and Wallace, 2009), staying faithful to the historical use of the lockets. What if we could take only one digital picture? And what if that picture slowly fades out? The pieces suggest interactions with digital technology that are unique and intriguing, staying faithful to the historical use of the lockets.

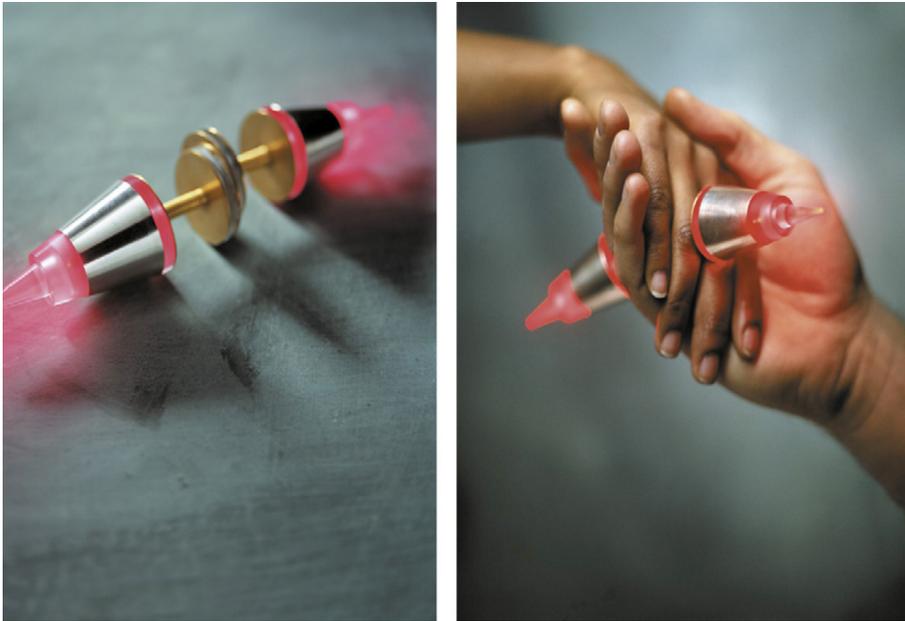


Figure 8. For two rings by Nicole Gratiot Stöber © 2004 all rights reserved. Photographer Christoph Grünig. Image courtesy of Daniel Gratiot

magnets, stainless steel, perspex, LEDs with electronic components

Nicole Gratiot Stöber © 2004 all rights reserved. Photographer Christoph Grünig. Image courtesy of Daniel Gratiot

Digital Jewellery and Intimate Connections in Real Time

A small number of jewellers explored ways of using digital technology to connect individuals over distances or in close proximity in an intimate and personal way. *For two rings* (1994) (see Figure 8) by Gratiot Stöber (reference in Wallace and Dearden, 2005) are two rings which can be physically activated in response to the physical interaction between people. Sensors detect when the two pieces are connected and light sources illuminate when the shapes are touched. The gesture of holding hands is amplified by the illumination of the pieces and the light fades gradually when the contact is broken. This project is an example of digital jewellery focused on the experiential qualities of human touch where the body responds to the jewellery and the jewellery responds to the body. The piece has been criticised for its limited digital functionality (Silina and Haddadi, 2015).

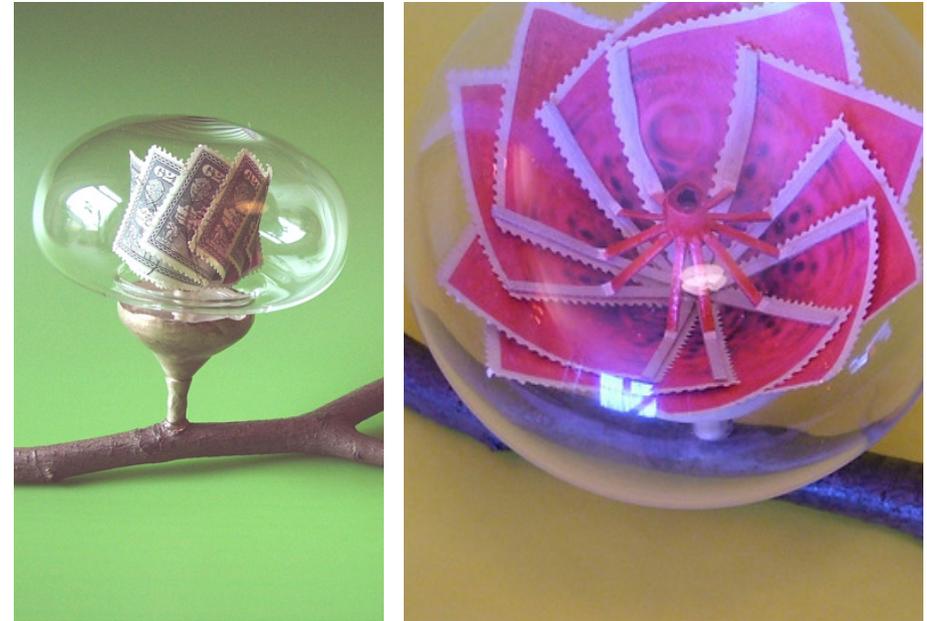


Figure 9. Blossom by Jayne Wallace 2004

Wood, glass, silver, vintage postage stamps, printed images.

Jayne Wallace © 2004 all rights reserved. Image courtesy of the artist

However, if makers understand digital technology as another material for design with its qualities and limitations such as those limitations associated with wood or silver, then they have the freedom to choose the digital functionality they find relevant to their concept.

Blossom (2007) by Jayne Wallace (see Figure 9) is a digital jewellery visual prototype that explores new ways of communication over distance between a grandmother and her grandchild. *“The piece is connected to a rain sensor, planted on the participant’s family land in Cyprus. Inside the dome the old Cypriot postage stamps are closed like a flower, attached to a mechanism, waiting to receive a signal sent from the rain sensor. Once the rain sensor has registered a predetermined quantity of rain in Cyprus, which may take months or even years, a signal is sent to the jewellery object and the mechanism is activated, slowly opening the petals like a flower blossoming.”* (Olivier & Wallace 2009 :212)

Why should jewellers care about the Digital?

In addition to the emotional connection with a family member, the piece connects the wearer with an intimate place. The piece acted as a memory trigger for a particular place and connection with another person at a particular time. The piece will be activated only once introducing a unique and anticipated interaction.

In comparison with IBM's set of digital jewellery prototypes, the piece *For two rings* and *Blossom* are examples of digital jewellery that suggest interactions with significant others beyond the verbal and direct forms of communication and question our expectation of the "digital" as that of being instant and repetitive.

Address (2007) (see Figure 10) by Mouna Andraos & Sonali Sridhar and *Vanity Ring* (2007) (see Figure 11) by Markus Kison are pieces of digital jewellery that connects the wearer with geographical and personal data. *Vanity Ring* does not have a jewel. Instead, it shows the number of "hits" one gets when one searches Google for the name of the person who wears it and displays it. The ring is personalised and updated overnight. In its essence, the piece is provocative and raises issues of identity. What is the value we attribute to our online identity?

Address is an electronic necklace with an embedded GPS which calculates the distance between the wearer's place and an intimate place, chosen by the wearer. The use of data in the piece *Address* differs from *Vanity Ring* as it updates constantly. A little display on the necklace measures the distance in kilometers. The piece is not indicating how to reach a place, as normal GPS technologies would do, rather it communicates a bond with a space. The piece has a poetic quality to connect with a place in an experiential way, suggesting an interaction that is imaginative and intriguing.

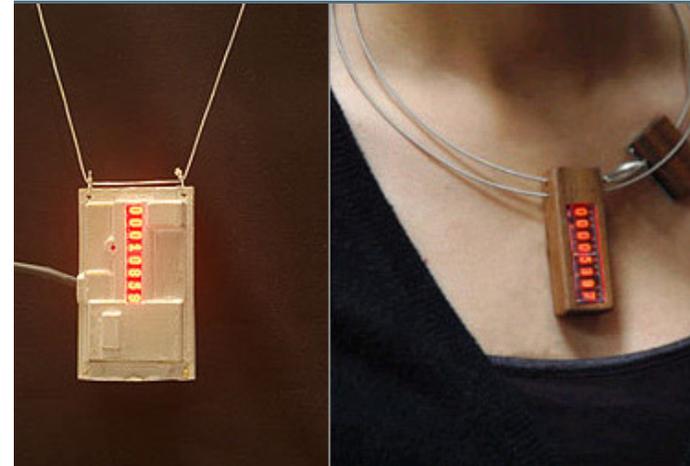


Figure 10. *Address* by Mouna Andraos and Sonali Sridhar 2007

Electronic components, wood

Mouna Andraos and Sonali Sridhar © 2007 all rights reserved. Image courtesy of Sonali Sridhar



Figure 11. *Vanity Ring* by Markus Kison 2007

Electronic components, plexiglass.

Markus Kison © 2007 all rights reserved. Image courtesy of the artist



Figure 12. Inner by Leah Heiss 2007

Silver, electronic components.

Leah Heiss © 2007 all rights reserved
Image courtesy of the artist.

Digital Jewellery and Bodily Awareness

Pieces of digital jewellery have the ability to make people be more aware of their body and what is happening to them in moments of tension, joy, frustration or stress. *Inner* (2007) (see Figure 12) by Leah Heiss is a piece of digital jewellery prototype that deals with issues of intrapersonal understanding and allows for an awareness of our non-conscious behaviours. It focuses on foibles, oddities, idiosyncrasies and eccentricities that may allude to emotional state. The brooch at the neck of the jewellery senses a nervous habit, in this case touching the sternum. This information is transmuted into an internal output, softly activating solenoids which tap against the ribcage and an external output; a subtle pulsating optic fibre along the stomach. The focus is on one's idiosyncrasies and the embodied reaction to it (here touching the stern) and not on patterns generated from biometric data. In comparison

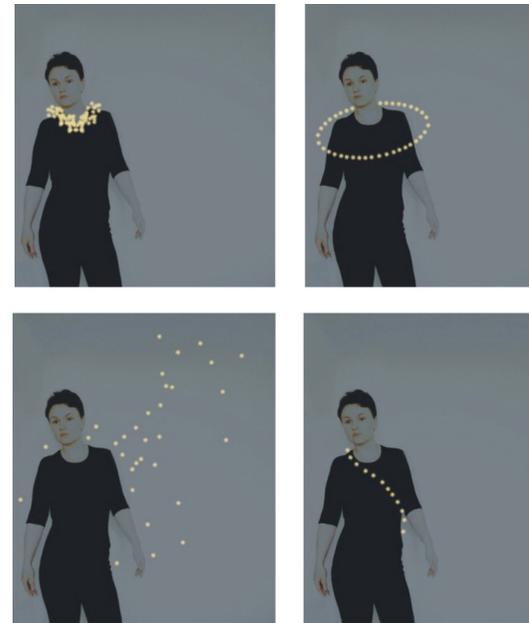


Figure 13. Prototype modular jewellery by Hazel White & Ewan Steel 2005. Details from the screen based visual element of the work.

Silver chain, animation

Hazel White © 2005 all rights reserved. Image courtesy of the artist.

with examples of wearable technology that detect changes of temperatures, moisture and transmit messages (see *Vein2* or *Skin-Bone*), the piece *Inner* offers the space for self-awareness in personal and intimate way.

Digital Jewellery and Digital Sensation

The piece *Swarms* (2008) (see Figure 13) by Hazel White and *Light Jewellery* (see Figure 14) (2014) by panGenerator invite people to experience a piece of digital jewellery as a sensation by creating a sensorial and imaginative experience for the wearer through on-screen animations or light projections. *Swarm* is made of a silver chain and has an extended digital life. As the wearer moves the chain, the computer code reacts to the movement of the chain by the wearer and creates animations of swarms to fly away. Although participants of the user study could not relate to the necklace they were wearing, they documented that the

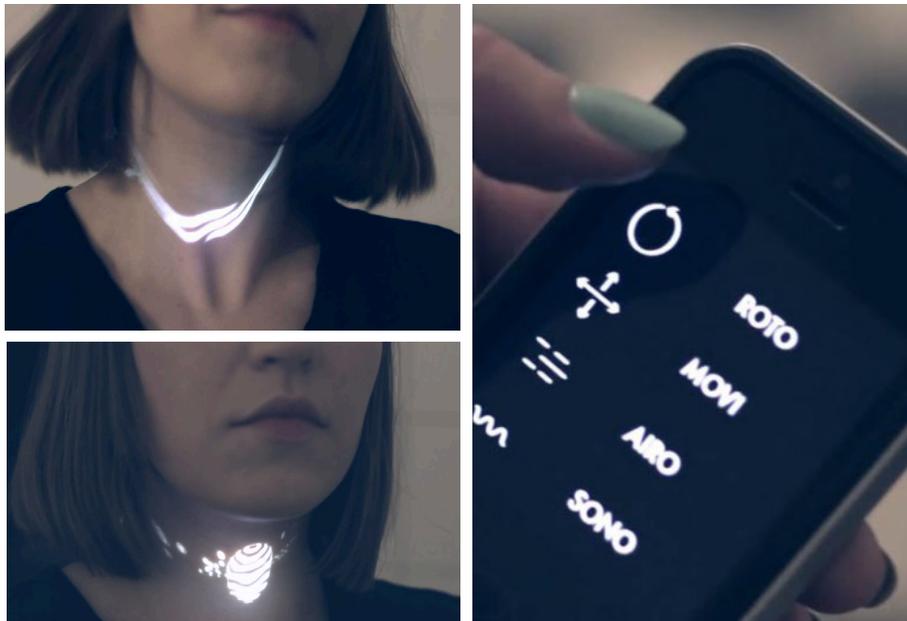


Figure 14. NECLUMI - a probable future of jewellery? By Collective panGenerator 2014 left: Light projections right: Control the projections via the phone application (Still from the panGenerator's Video <https://vimeo.com/110207736>)

Light, mobile phone, gyroscope

PanGenerator © 2014 all rights reserved. Video courtesy of the artist.

extended life of the piece on the screen as a playful and intriguing interaction (White and Steel, 2007). Similar to *Light Projections* (1994) by Susan Heron, *Light Jewellery* triggers sensational experiences for the wearer. More specifically, the light is produced by a projection controlled by a phone application and four dynamic options respond to different inputs measured by the phone's built-in features and gyroscope projection-based jewellery pieces.

These pieces expand our understanding of what digital jewellery can be through "digital sensations" by suggesting interactions that highlight the sensorial and the imaginative aspects of digital jewellery.

A FRAMEWORK FOR DIGITAL JEWELLERY

Previously, I presented examples of digital jewellery that focus on the personal and emotional significance for the

wearer and examples that open ways of discussing issues of personal values and identity. I also referred to examples that suggested alternative ways of connecting with one's bodily state and idiosyncrasies and I introduced the term digital sensation to refer to examples that create sensorial and imaginative experiences for the wearer. This review of existing examples of digital jewellery provides the grounding for a framework for understanding digital jewellery.

Figure 15 illustrates the layers of the framework for digital jewellery. The outside layer represents an easily identifiable part of the piece, its materiality and its form. This layer highlights the maker's sensitivity in working with materials and it raises the question of the narrative in the form of the digital jewellery piece. The second layer represents the poetic qualities of the interaction with digital jewellery. This refers primarily to the function of the piece and the wearers interaction with the object. The third layer represents the personal and intimate engagement which differentiates digital jewellery from other wearable technologies. This supports meaningful connections between the wearer and the object that can ground and support one's sense of self. I will now describe each of these layers in more detail.

1. Materials and forms. The narrative of the piece

It is widely acknowledged that jewellery pieces tell stories (Ahde 2013, 2017; Rana, 2014; Potter, 2007). Among the social, cultural and political stories, jewellery pieces often carry a personal story and a connection with the wearer. Contemporary art jewellery makes people position themselves in a personal, societal and cultural context (Besten, 2011; Urger, 2013). Significantly, this jewellery leaves space for the wearers to reflect on who they are, what they stand for or what they want to be (Broadhead, 2005; Veiteberg, 2013). From this perspective, the variation of materials and new techniques are tools for jewellers to create



Figure 15. Framework of understanding and designing digital jewellery.

Nantia Koulidou@2017 all rights reserved.

pieces that stimulate and provoke emotional responses. The narratives that accompany the piece add value to it. They are often embedded in the form and can trigger memories that are significant for the wearer and/or the maker.

The narratives relating to the materials in digital jewellery are also an important issue. Reflecting on existing methodologies of designing pieces of digital jewellery, materials and forms that are important for the wearer can inform the design. For example, Wallace gets her inspiration from particular individuals and fragments of the lives and experiences of the people she works with. With sensitivity to the materials (traditional and digital), she designed objects that have a close relationship to the wearer's life and memories. Similarly, White makes pieces that connect the wearer with their own narratives. For example, the form of Lens supports the connection between the wearer and an intimate place. Examples such as Address or Vanity Ring

suggest a rich interaction between the piece and a person, but they seem to lack an important characteristic of digital jewellery; they lack a narrative element connected to their form and materiality.

I have presented that wearable technology often relies on technological solutions that focus on functionality and efficiency, offering a limited interpretation of what digital jewellery could be (Wallace 2007, Versteeg, 2017). This limitation extends to the narrative associated with the pieces. In his critique of digital jewellery, Versteeg (2017) argues for poetic interactions between the analogue and digital layer of digital jewellery. I add to this that, in digital jewellery, there is an inseparable connection between the function of the piece and its form and materials. The synthesis of form, material (traditional and digital) and interaction is what differentiates pieces of digital jewellery from other wearable technology.

2. Poetic Qualities of Interaction with Digital Jewellery for Intimate and Personal Engagement

Digital jewellery challenges our expectations of digital connectivity and allows our new expectations and experiences to be realised. Building on Wallace and Olivier's (2011) premise of open and varied design interpretations of the digital, I will summarise the qualities of the "digital" in digital jewellery by focusing on atypical personal interactions with technology. I refer to these qualities as poetic qualities of interaction. They refer primarily to the function of the piece and the wearers interaction with the object.

Digital jewellery challenges our expectations of digital connectivity and allows our new expectations to be realised.

EXPECTATIONS OF THE DIGITAL WITHIN DIGITAL JEWELLERY PRACTICE

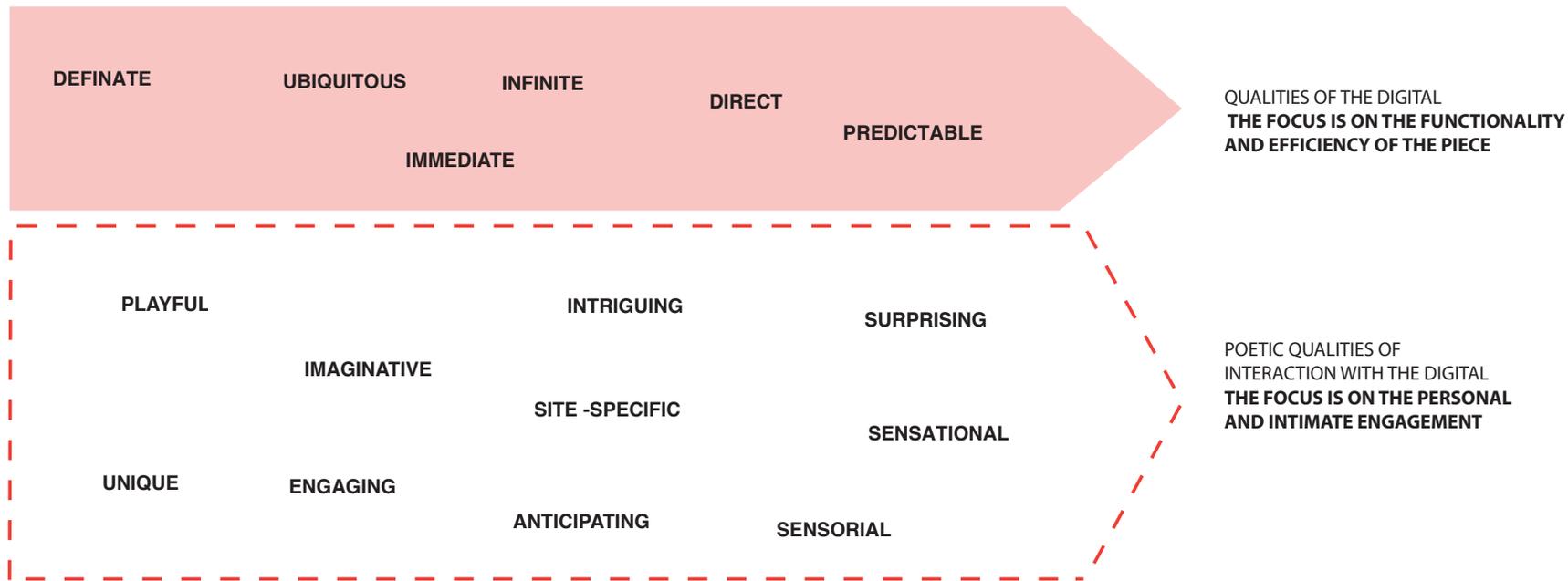


Figure 16. Poetic qualities of interaction with the digital as a material within digital jewellery practice.

Nantia Koulidou@2017 all rights reserved.

Unique: a quality that suggests that a part of the process occurs only once, the process is not reversible or repeatable. This quality can add personal value to the interaction with a piece, as described in *Blossom and Locketts*.

Anticipation: a quality that questions the pace of an interaction with the digital. The wearer anticipates the interaction and thus can reflect on the significance of the piece, as described in *Blossom*.

Site-specific: a quality that addresses the location in which the interaction occurs. By having a unique location to connect with the piece and its content, a wearer can connect with a place or/and the piece in an intimate way, as described in the piece *Lens*.

Intriguing: a quality that arouses the curiosity of the wearer to explore the interaction with the piece in short turns.

In *Lens*, the picture is revealed through the interaction only in glimpses and in *Swarms*, the on-screen interaction is different each time.

Sensorial: a quality that relates to the senses or the power of the digital sensation. *Two Rings, Light Jewellery, Swarms and Inner* offer ways of connecting with one's body, focusing on the experiential qualities of the interaction between the piece and the body.

Imaginative: a quality that leave the space for open interpretation or creative response to the digital, as described in the pieces *Address and Swarms*.

Provocative: a quality that raises social, cultural or political issues in our digital culture, such as identity as described in the piece *Vanity Ring*.

Digital jewellery creates emotional triggers by enabling interactions with a piece based on seven qualities. Some of these qualities have been presented in HCI (Olivier and Wallace, 2009), but not within the jewellery field. These qualities are important because they can open new possibilities for designing for personal and intimate engagement, acting as propositions for research on how digital experiences can present more poetic interactions and not definite answers.

3. Personal Anchor Points

Digital jewellery is objects concerned with one's sense of self and emotional significance and is situated principally in the field of contemporary art jewellery (Dormer, 1994; Besten, 2011). It is objects that take advantage of existing advances in wearable and digital technology, but stays faithful to the values behind the piece and the social role of jewellery in peoples' lives. Its main function is to offer the space for personal significance and the link to one's anchor points is fundamental. With anchor points, I refer to a person's meaningful connections that can ground and support one's sense of self. In this space, digital technology is a material that offers the possibility to explore new ways of connectedness with the self, significant others and intimate places.

Within digital jewellery practice, the relationship between the piece and the body is important. Similar to jewellery, digital jewellery gains intimacy as objects relate to our personal narratives and as objects are placed within the personal space of the wearer. When designing digital jewellery for rich and meaningful experiences, makers need to understand what is important for the people they are designing for, not just monitoring and tracking the wearer's body. The makers should acknowledge the tight relationship between what people do and how they feel about, give value to, and to give meaning to what they do and what

happened to them (Wright at el. 2008, Wright and McCarthy, 2010). When the body is explored as data limits the design possibilities of digital jewellery. Emotions, feelings, fears, dreams or desires cannot be measured in numbers; rather they must be shared through a dialogue between the designer and the wearer. The emphasis should be placed on the lived experience (ibid), where the body is explored from a range of perspectives. Rather than figures and graphs, resulting for example from a Fitbit, the body should be explored from an experiential perspective, as well as its physical dimensions, such as body temperature and heart rate.

CONCLUSION

Most of the digital devices that we live with come with a set of expectations such as: What does it do? How long does the battery last? How cutting edge is the technology? By contrast, this paper explores how we can open up our expectations of the digital by focusing on atypical personal interactions with technology.

In this paper, I explored the context and implications of digital jewellery within contemporary art jewellery practice through selected pieces of jewellery, considering the object's materiality and the poetic qualities of the interaction revealing a rich conceptual design space. I presented examples that open alternative ways of connecting with one's personal memories, significant others and intimate places and creating the space for bodily awareness. This critical review of digital jewellery defines a need for a better understanding of the digital experiences with contemporary art jewellery. To this end, a framework for understanding digital jewellery is presented that aims to open up the discussion around how craft practices and digital technologies can create poetic and emotionally rich interactions.

REFERENCES

1. AHDE-DEAL, P. 2013. Women and jewelry: a social approach to wearing and possessing jewelry. Aalto University.
2. AHDE-DEAL, P., PAAVILAINEN, H. & KOSKINEN, I. 2017. 'It's From My Grandma. 'How Jewellery Becomes Singular. *The Design Journal*, 20, 29-43.
3. BROADHEAD, C. 2005. A part/apart. In: GRANT, C. (ed.) *New directions in jewellery*. London: Black Dog Publishing., 25-35.
4. BUSCH, A. 2015. Interrogating Smart Jewelry. In *Metalsmith*, Vol. 35 Issue 5, 52-57.
5. CHEUNG, L. 2006. Wear, wearing, worn; the transition of jewels to jewellery. . In: CHEUNG, L., CLARKE, B. & CLARKE, I. (eds.) *New directions in jewellery II*. London: Black Dog Publishing., 12-23.
6. CHEUNG, L. 2013. *Averagely Unique* [Online]. Available: <http://www.current-obsession.com/averagely-unique-with-lin-cheung/> [Accessed Jan 25th, 2018]
7. DORMER, P. & TURNER, R. 1994. *The New Jewellery: trends + traditions*. London: Thames and Hudson.
8. FUSAKUL, S. M. 2002. *Interactive Ornaments*. PhD, Royal Collage of Arts.
9. GASPAR, M. 2013. Craft Knowledge. In: SKINNER, D. (ed.) *Contemporary jewelry in perspective*. Asheville, NC: Lark Crafts in association with Art Jewelry Forum, 78.
10. HEISS, L., BECKETT, P. & CARR-BOTTOMLEY, A. 2016. Redesigning the Trans-disciplinary: Working Across Design, Craft and Technological Boundaries to Deliver an Integrated Wearable for Cardiac Monitoring. *Proceedings of the 2016 ACM Conference on Designing Interactive Systems*. Brisbane, QLD, Australia: ACM.
11. HÖÖK, K. 2013. Affect and experiential Approaches. *The SAGE Handbook of Digital Technology Research*, 174.
12. JAIN, A. Digital Jewelry-a 'fashionable' leap in the field of wireless networking. *Computing for Sustainable Global Development (INDIACom), 2015 2nd International Conference on, 2015*. IEEE, 388-392.
13. KISON, M. 2007. *Google Vanity Ring* [Online]. Available: <http://saracoutinho.com/blog/?p=16>. [Accessed May 25th, 2017]
14. LUTHI, A. L. 2001. *Sentimental jewellery, Princes Risborough, Buckinghamshire*, Shire Publications.
15. MINER, C. S., CHAN, D. M. & CAMPBELL, C. 2001. Digital jewelry: wearable technology for everyday life. *CHI '01 Extended Abstracts on Human Factors in Computing Systems*. Seattle, Washington: ACM.
16. OLIVIER, P. & WALLACE, J. 2009. Digital technologies and the emotional family. *International Journal of Human-Computer Studies*, 67, 204-214.

17. PANGENERATOR. 2014. NECLUMI - a probable future of jewellery? [Online]. Available: <http://www.neclumi.com/> [Accessed 05 May 2017].
18. POTTER, L. 2007. My life in a sock drawer. Unworn jewellery and the construction and preservation of identity. Goldsmiths College. Design Department.
19. RANA, M. 2014. We are our stories - Mah Rana: Meanings and Attachments [Online]. Available: <https://klimt02.net/forum/interviews/we-are-our-stories-meanings-and-attachments-mah-rana> [Accessed May 20th, 2017]
20. RYAN, S. E. 2014. Garments of paradise: wearable discourse in the digital age, Cambridge, Massachusetts, The MIT Press
21. SILINA, Y. & HADDADI, H. 2015. New directions in jewelry: a close look at emerging trends & developments in jewelry-like wearable devices. In Proceedings of the 2015 ACM International Symposium on Wearable Computers. ACM., 49-56
22. UGUR, S., MANGIAROTTI, R., BORDEGONI, M., CARULLI, M., WENSVEEN, S. & DUNCKER, I. 2011. An experimental research project: wearable technology for embodiment of emotions. In Proceedings of the 2011 Conference on Designing Pleasurable Products and Interfaces (p. 32). ACM.
23. UNGER, M. 2011. Temptations. In: LINDEMANN, W., FH TRIER/IDAR-OBERSTEIN (ed.) Thinking jewellery: On the Way Towards a Theory of Jewellery/Schmuckdenken: Unterwegs Zu Einer Theorie des Schmucks. Stuttgart: Arnoldsche Art Publishers. 303-320
24. VEITEBERG, J. 2013. Between Common craft and uncommon art - on wood in jewellery. In: HALÉN, W. (ed.) From the coolest corner : Nordic jewellery. Stuttgart: Arnoldsche Verlagsanstalt. 23-29.
25. VERSTEEG, M. & KINT, J. 2017. Exploring aesthetics through digital jewellery. The Design Journal, 20, S184-S195.
26. WALLACE, J. 2007. Emotionally charged: A practice-centred enquiry of digital jewellery and personal emotional significance. PhD., Sheffield Hallam University.
27. WALLACE, J. & DEARDEN, A. 2005. Digital jewellery as experience. In Future Interaction Design. Springer, London. 193-216
28. WALLACE, J. & OLIVIER, P. 2011. Momentum: Antje Illner, Beate Gegenwart, Cathy Teadaway, Geoffrey Mann, Jayne Wallace, Jenny Smith, Justin Marshall, Vanessa Cutler. In: GEGENWART, B. (ed.). Cardiff: s.n.
29. WHITE, H. & STEEL, E. 2007. Agents of Change: from Collection to Connection. The Design Journal, 10, 22-34.
30. WRIGHT, P. & MCCARTHY, J. 2010. Experience-centered design: designers, users, and communities in dialogue. Synthesis Lectures on Human-Centered Informatics, 3, 1-123.
31. WRIGHT, P., WALLACE, J. & MCCARTHY, J. 2008. Aesthetics and experience-centered design. ACM Transactions on Computer-Human Interaction, 15, 1-21.

ABOUT THE AUTHOR

Nantia Koulidou
Northumbria Univerisity
School of Design
konstantia.koulidou@northumbria.ac.uk
www.nantiakoulidou.com

Nantia is a doctoral student at Northumbria Univerisity. Her research investigates the potential of digital jewellery to suggest poetic and emotionally rich interactions for people. Her current interest is concerned with understanding and supporting the micro-transitions of identity in the context of living in/between two countries. She has previous training in silversmithing and holds an MSc degree in IT Product Design and a full degree in architecture.



Journal of Jewellery Research
<http://www.journalofjewelleryresearch.org>

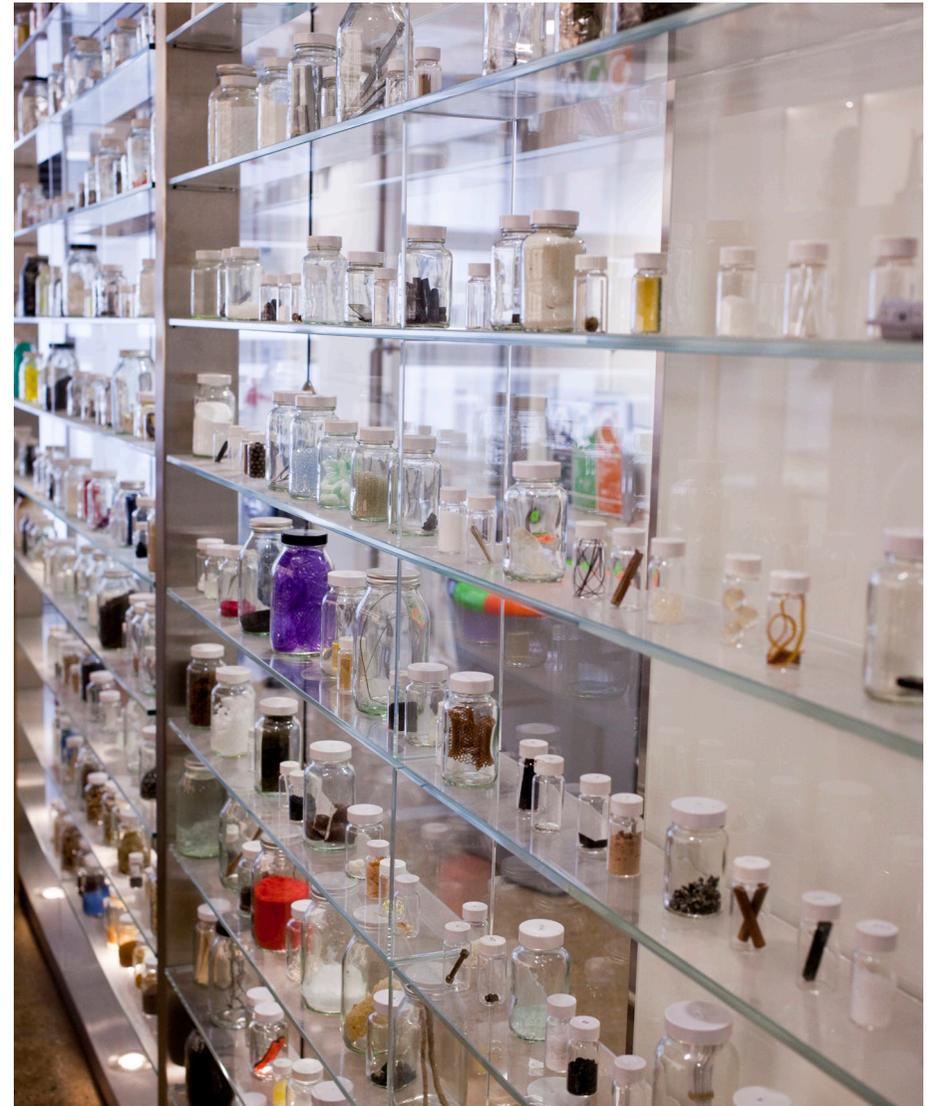
ISSN 2516-337X

Loughborough University,
Northumbria University &
University of Dundee.
First published in February 2018, UK.
Copyright © Journal of Jewellery
Research and the author.
All rights reserved. Apart from fair
dealing for the purposes of study,
research, criticism or review, as
permitted under the applicable
copyright legislation, no part of
this work may be reproduced by any
process without written permission
from the publisher or author.
For permissions and other inquiries,
please contact the editors:
<editorsjoj@gmail.com>
Journal of Jewellery Research is a
double blind peer-reviewed research
journal supported by an International
Editorial Advisory Group.

MATERIALS LIBRARIES - A JEWELLER'S PERSPECTIVE

AUTHOR

Katharina Vones



JR journal of
jewellery
research





Figure 3. Sulphuric Acid-Sugar Growths made during a public engagement workshop at the Institute of Making
Photo credit: Katharina Vones

a period of four years between 2012 and 2016, consisting of extensive site visits to a number of locations. For the purpose of this paper, I have selected images from those materials libraries situated in London to provide an overview of the diverse spaces and types of materials that are available to contemporary jewellery practitioners within one geographical location.

TOWARDS A NOVEL MATERIALITY

Since the first institutional materials library in the UK opened at the Royal College of Art in 1974 (Wilkes, 2011), the increasing desire by designers, visual artists, researchers and materials enthusiasts to explore a wide range of both commercially available and highly experimental materials in an open, collaborative environment has given rise to

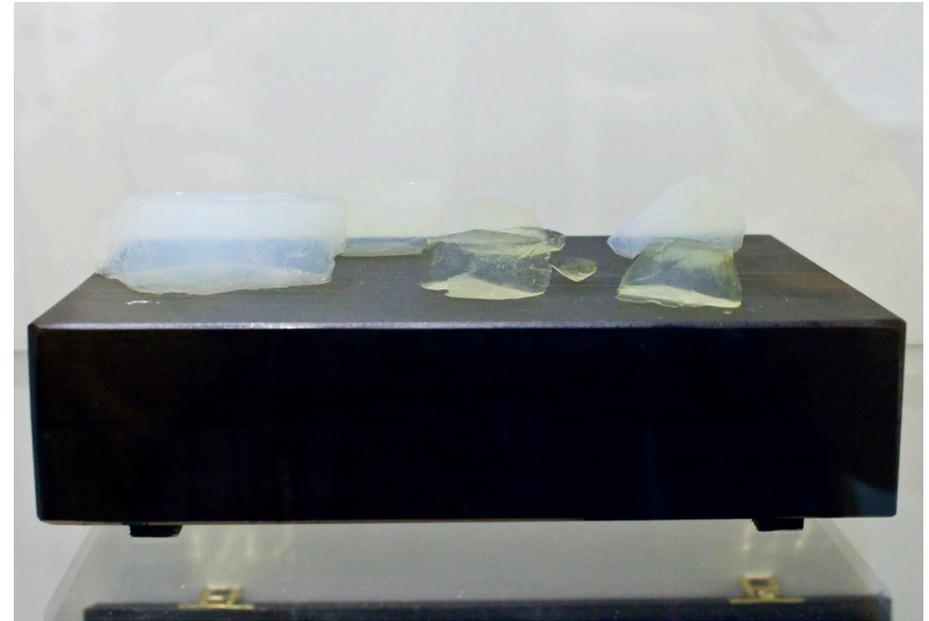


Figure 4. Rare 'lump' samples of Aerogel kept at the Institute of Making. Developed by NASA as the lightest solid available, the yellow discolouration is a result of repeated handling by visitors.
Photo credit: Katharina Vones

significant growth in the number of materials libraries operating globally over the last decade. Within the UK alone, nine materials libraries are currently operating, each with a different focus and access parameters, ranging from those based at academic institutions, to fee-paying commercial consultancy ventures. While some libraries select materials by focusing on a particular discipline, such as architecture, interior design or the construction industries, others specialise in rare, laboratory-grade materials. Most commercial materials libraries also have extensive searchable online databases, whilst others exist only online or as pop-up venues and have no physical site to examine materials first hand.

However, while the agenda of sharing knowledge and creating connections between materials scientists, the materials industry, and the creative community is a worthwhile agenda that should be encouraged, particularly at a time when collaborations between the arts and sciences



Figure 5. Scin Gallery
London, 2014
Photo credit: Katharina
Vones

are essential for the development of new cross-disciplinary approaches, there are still significant barriers in place when it comes to creating such exchanges. Advocates of materials libraries, such as Mark Miodownik of the Institute of Making in London, praise the ability to encourage scientists to think about the sensoaesthetic properties of materials rather than their functionality by consulting creative practitioners and

researchers, whose main focus arguably lies in identifying how users connect with materials on a more intuitive level:

“Characteristics such as smell and feel are almost impossible to capture in simple numbers, [Miodownik] noted, and many modern products show evidence of the fact that these properties were ignored during their design. The only way that people can gain an understanding of these other material properties, suggested Miodownik, was by experiencing the materials directly – touching them, manipulating and interacting with them in different ways.” (Ward, 2008)

Miodownik’s appeal applies to material scientists and creative practitioners and researchers alike – with one group needing to explore ways of designing materials that contain optimum functionality while also taking into account sensoaesthetic properties, and the other engaging with how such materials could be used sensitively in designing an object with maximum functionality whose tactile and

However, the constraints currently faced by materials libraries in building a culture of interdisciplinary knowledge exchange are still significant.

aesthetic qualities capture the imagination of the end user. However, the constraints currently faced by materials libraries in building a culture of interdisciplinary knowledge exchange are still significant. While the idea of the materials library as a collection of unusual materials to be made

available to creative practitioners, researchers, and scientists alike may have existed for decades, the serious progression of a strategic agenda in terms of building such collections and making them available to a larger audience is a development that has gained momentum only fairly recently. Even those materials libraries that have been established over the last ten years, both in academic institutions and as commercial ventures, are limited in the scope of their expertise. As Miodownik points out:

"[...] they serve very specific design communities, their materials collections are extremely limited, they only deal with commercial materials, but most importantly, they are almost completely dissociated from the materials-science community."
(Miodownik, 2009)

Additionally, the ties between industrial suppliers of materials and materials libraries are tentative at best, with many suppliers reluctant to provide experimental materials in quantities small or large enough to be useful to creative practitioners in their research and development, or indeed at all. In her conversations with material librarians, Sarah Wilkes extrapolates that:

"[...] in the eyes of many involved in materials education, concerns over corporate secrecy and ownership on the part of materials producers are a hindrance to both creativity and technological progress." (Wilkes, 2011)

The questions of intellectual property and pending patent applications loom large during such exchanges between supplier and creative practitioner, and frequently a satisfactory conclusion cannot be reached. While some of the most interesting materials represented in materials libraries



Figure 6.7. A selection of material samples submitted to the SCIN Gallery Materials Library by artists and designers from all over the world. Photo credit: Katharina Vones

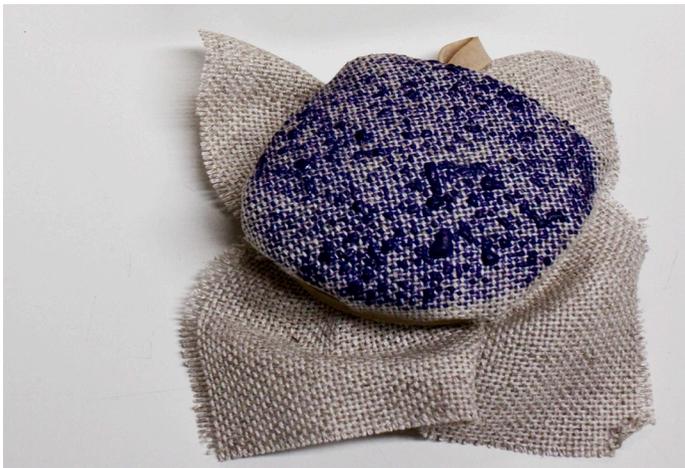


Figure 8,9. A selection of material samples submitted to the SCIN Gallery Materials Library by artists and designers from all over the world. Photo credit: Katharina Vones

are often in a pre-commercial stage of development, suppliers are worried about providing such materials to creative practitioners and researchers before potential revenue-generating avenues have been exploited. This quickly turns into a catch twenty-two situation, with many materials never reaching financial viability at all due to their lack of practical applications and thus commercial demand. Often such demand might have been created if creative practitioners and researchers had been encouraged to experiment with these materials and had thus discovered novel and previously unanticipated ways of using them. To recognise the potential of such mutually beneficial relationships, a liaison between industrial suppliers, creative practitioners and researchers, experienced in dealing with the concerns of either party would be necessary – something a lot of materials libraries are struggling to provide as of yet.

ENCOURAGING EXPERIENTIAL MATERIALITY

As an essential part of my research into the field of smart materials, I conducted an extensive range of site visits to various European materials libraries over a four-year period, from 2012 to 2016. While initially my aim was to use the holdings of these libraries to find samples of innovative smart materials, I quickly realised that this would most likely not be the case, as most of the materials libraries currently operating focus on exhibiting samples of materials that are already commercially available. Because of this, some materials libraries that are sponsored either directly by material manufacturers, such as the Material Lab in London (Johnson Tiles, 2011), or indirectly through sample donations or the selling of prime exhibition space, such as the Materia Inspiration Centre in Amsterdam (Vones, 2014), present a more biased offering than those not linked to industry. This does not necessarily diminish their value to an individual

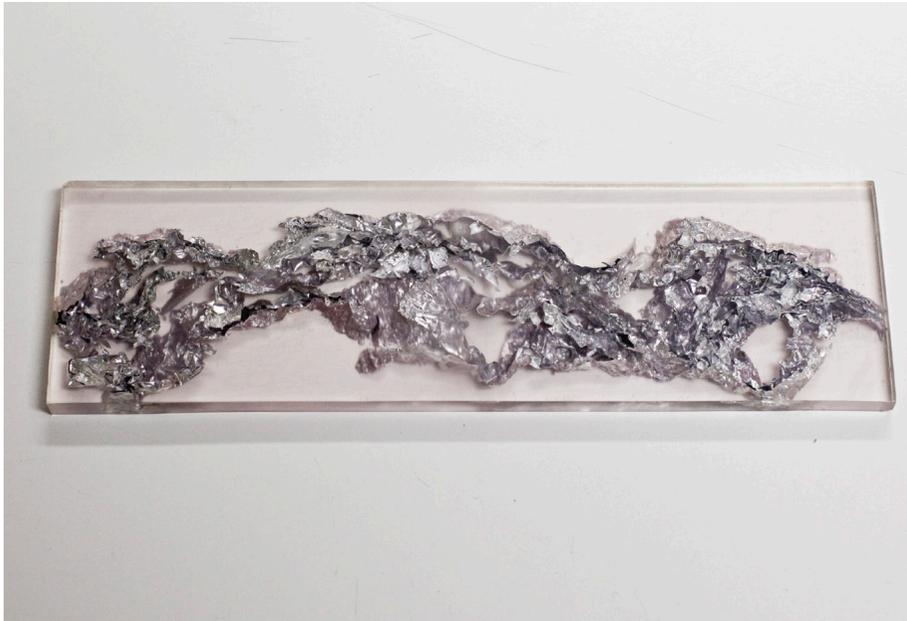


Figure 10. An artist's sample of aluminium foil embedded within clear resin
Photo credit: Katharina Vones

creative practitioner searching for a novel material to enhance their practice – indeed, this could be of benefit, as the frustrating leg-work of finding supplier information has already been done, and the certainty exists that the material is commercially available. Unfortunately most smart materials, bar a few exceptions, are not as yet widely commercially available, and thus are represented sparingly in such materials libraries.

One of the greatest challenges I encountered when arranging my site visits was that of access. Some manufacturer-sponsored and open-access libraries such as Material Lab and the SCIN Gallery in London are freely accessible during weekday business hours on a walk-in basis and do not require an appointment. This is the ideal scenario for creative practitioners and researchers, who can visit in accordance with their own project schedules, and need not incur any further financial outlay. As can be seen in

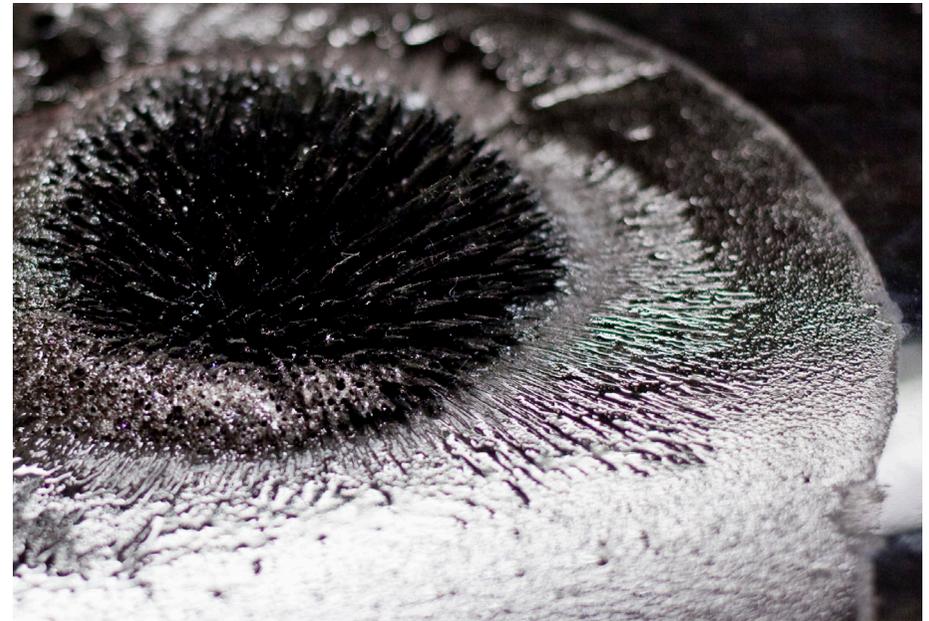


Figure 11. An artist's sample of Ferroresin submitted to the SCIN Gallery Materials Library.
Photo credit: Katharina Vones

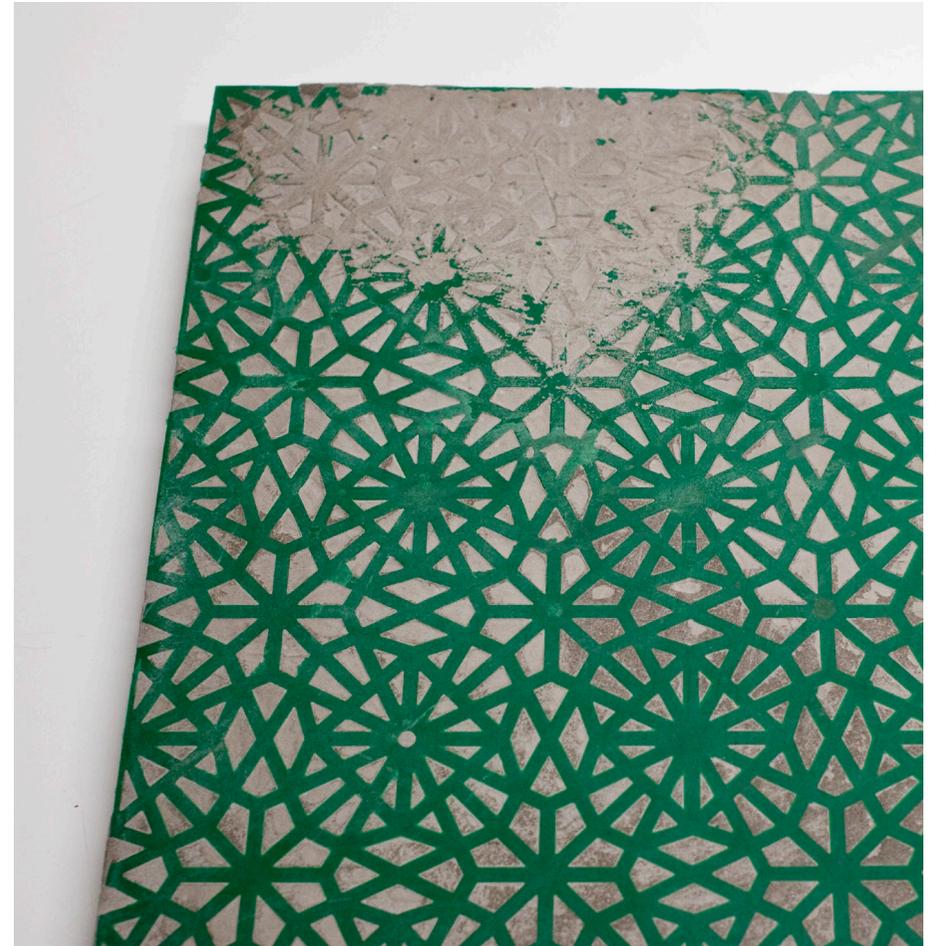
the case of the Materia Inspiration Centre, the sponsorship model is highly dependent on sustaining support from materials manufacturers as well as commercial and industrial clients, who in turn, follow the dictates of wider economic circumstances. For instance, a recent downturn in the construction industry and its associated branches has meant that demand for the services of Materia and thus its financial support waned (Materia, 2013), and therefore the decision was taken to close the physical site in Amsterdam. Materia's collections are still available for viewing through travelling exhibitions at trade shows, and the online database remains fully operational, but for the individual creative practitioner or researcher seeking tactile access to materials this is still a grave loss.

However, the sponsorship model is a rare arrangement, and currently most materials libraries are either located within an academic institution or operate a subscription-based

financial model. Each type comes with its own particular drawbacks and challenges. Materials libraries based within academic institutions are often organised on a departmental level and overseen by a small team of researchers, who may be unavailable during busy teaching periods or throughout scheduled university vacation times. While these libraries often successfully serve their own student community, it can be tricky to arrange an appointment as a visiting creative practitioner or researcher. Indeed, during these times of increasing financial pressures levied on universities, there may be a vested interest for institutions in keeping their facilities exclusively for the use of their staff and student populations as a selling point to attract fee-paying students. Some academic materials libraries, such as the Institute of Making, seek solutions for individual creative practitioners and researchers to have improved access to their collections by arranging public engagement events such as open-days and occasional focused 'materials festivals'. These are very recent developments and the masterclasses and MakerSpace facilities offered by the Institute of Making are currently only open to staff, students and researchers based at the hosting institution.

While these libraries often successfully serve their own student community, it can be tricky to arrange an appointment as a visiting creative practitioner or researcher.

In contrast, the subscription-based model is applied by the majority of materials libraries I encountered. The relatively expensive annual subscription packages offered



by these materials libraries, often only affordable to commercial clients and governmental bodies, are financially overwhelming for individual creative practitioners and researchers and as a result only very few have access to these resources. Some libraries offer discounts in the form of special student and small business memberships, online database access-only packages and even daily and hourly

Figure 12. Material Samples found at the SCIN Gallery Materials Library. textile and concrete tile
Photo credit: Katharina Vones



Figure 13. Material Samples found at the SCIN Gallery Materials Library. paper made from snail excrements
Photo credit: Katharina Vones

access rates, but these are still pricey, and of limited use to creative practitioners and researchers. This model poses a serious barrier of entry for most, and I was often only able to gain access to their facilities by explaining my research project in depth and mostly focusing on documenting the facility itself rather than delving into a more extensive materials search through their archives.

Many of the subscription-based libraries pride themselves on offering a bespoke consultation service, with each library visit accompanied by an individually assigned consultant. In an interview I conducted during my visit to the Materiatheque at the Innovatheque FCBA in Paris, with materials consultant Brice Tual, I discovered that one of the main motivations for using this model is to enable a more critical and independent criteria-based selection system for the inclusion of new materials (Vones, 2014). Tual states that the Materiatheque selection committee, consisting of



Figure 14. Material Samples found at the SCIN Gallery Materials Library. self-healing concrete
Photo credit: Katharina Vones

up to six members from a variety of backgrounds, meets four times a year to whittle a pre-selection of over 2000 materials down to a maximum of 250 for inclusion in the library per year. Selection criteria are stringent and immediately exclude any materials without safety data and technical information, effectively shutting the door on materials that are still at a lab-stage of development. While this is entirely understandable for a commercial venture aimed mainly at sectors such as product design, fashion design, architecture, furniture design and ecological design who use these libraries as a time-saving shortcut in their product development cycle, the scope of the materials on offer is immediately curtailed. Furthermore, the library's role as mediator between creative practitioner and supplier ends after the first introductory phone call – all negotiations that follow are to be conducted entirely by the clients themselves.

There is also no established and standardised system



Figure 15. Materials are kept in labelled boxes at the SCIN Gallery Materials library. Photo credit: Katharina Vones

of classification for the materials kept in materials libraries, and with each library having devised its own way of displaying, storing and cataloguing their collections it is virtually impossible to tell whether any particular library might be of use to the individual creative practitioner and researcher without extended visits to the physical sites or online databases. The increasingly rapid development of new materials often renders holdings obsolete and the issue of shelf space means that legacy materials are frequently discarded or consigned to inaccessible storage indefinitely. Some libraries allow visitors to take away a limited number of free samples from their legacy and duplicate stores to experiment with, which is a helpful way to gain access to some materials, but this process can be very hit-or-miss. It seems that for the adventurous creative practitioner or researcher without an academic or commercial connection it would be more beneficial to engage in the initial research process themselves by visiting materials expositions, conducting internet research and contacting suppliers directly for samples of interest to their particular field. In my own creative practice as a contemporary jewellery artist and researcher, who focuses on the practical application of smart materials, I have found materials libraries to be of limited value. While some of the materials I used in my practice, such as colour-changing photochromic, thermochromic and nano pigments (Figs. 16 & 17), were on display in some of the materials libraries I visited, multiple attempts to contact manufacturers directly to request samples often yielded few tangible results. In most cases, a personal introduction by another creative practitioner or researcher already familiar with the company was required to stimulate a meaningful interaction.

While the emphasis of the materials libraries I visited was mainly on providing information on the commercial availability and physical characteristics of any given material on display, very little information was generally provided

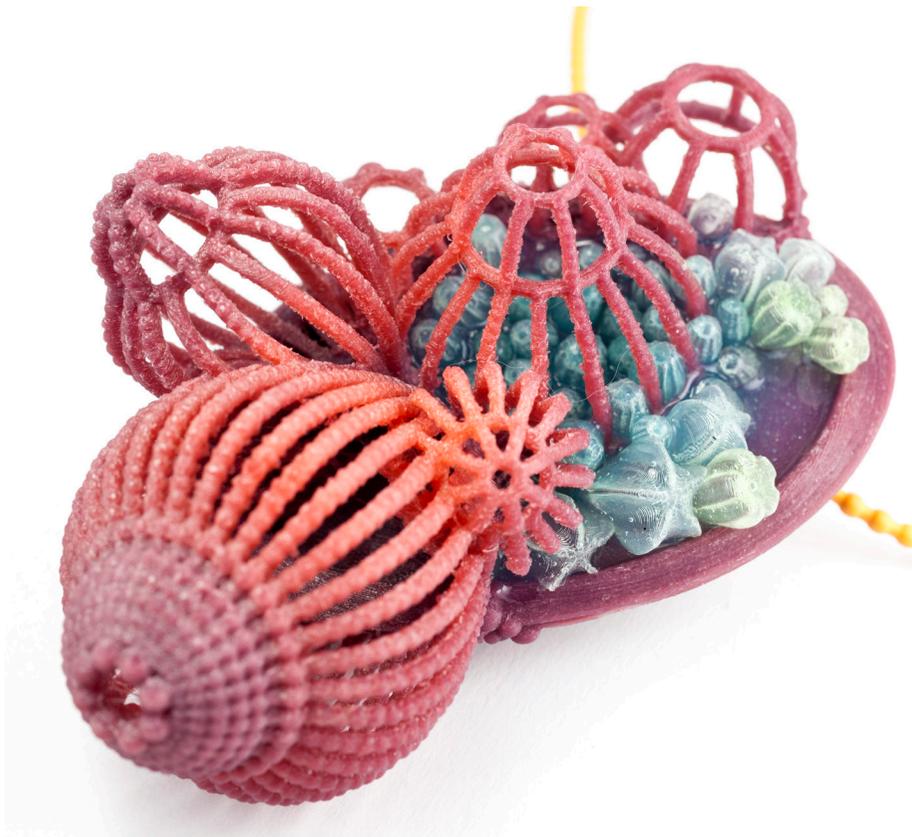


Figure 16. Necklace from the Radiolaria series, 2017. Materials: Thermo-chromic PLA, Photochromic Silicone, Steel Chain, Plastic Coating. Photo credit: Katherina Vones

on how to work with them. Clearly aimed at a specialist audience, an in-depth knowledge of advanced manufacturing and material-specific processes was often assumed on the part of the visitor. While more familiar materials such as plastics, wood, stone and composites could easily be explored in the workshop through the lens of the contemporary

jeweller's practical skillset, this is not the case for more experimental materials. Working with smart materials, for instance, requires detailed process knowledge that is highly specific and experiential in quality, and has often not been formalised through practice-led research. A case in point can be found in the increasing interest by the jewellery community in shape-memory metals. Practitioners such as Sompit Moi Fusakul (Fusakul, 2002) and Leah Heiss (Heiss, 2009), have contributed to the very small amount of practical instruction that is currently available on how to work with this challenging material that cannot be joined or shaped by utilising traditional metalworking techniques. However, most of the other research on offer relating to this material is from STEM-related disciplines such as physics, engineering and materials science and is mainly concerned with its physical characteristics in a laboratory context. If materials libraries were incentivised to close this gap by providing practical process knowledge for each material on display, this would enable creative practitioners and researchers to participate in a deeper engagement with novel materiality, which would open a pathway for innovation that could encourage product development, commercialisation and novel material uses.

CONCLUSION:

On the Value of Materials Libraries

As my research has spanned a period of over four years, some parts of it have inadvertently taken on the characteristics of a historical account. Observing the phenomenon of the materials library over a prolonged period of time has highlighted both its strengths and its weaknesses. For instance, most of the libraries based on the open-access model have now been forced to close down their sprawling physical locations, mostly due to financial shortfalls (see Table A). Two of these libraries (including the SCIN Gallery) have converted their operations to a pop-up exhibition-based



Figure 17. Pendant from the Radiolaria series, 2017.
Materials: SLA Acrylic (dyed), Photochromic Silicone, Chameleon Nano Pigment, Sterling Silver Chain.
Photo credit: Katharina Vones

“roadshow model”. While this is a much more economically efficient model, it also comes with several significant restrictions. For one, creative practitioners and researchers who are interested in viewing particular materials might find it difficult to do so, as the material selection taken to each pop-up exhibition is tailored to the particular event it is hosted by. As such events are often trade fairs related to a particular industry, this severely limits the scope for serendipitous discovery offered by the ability to browse the material collection in its entirety. Furthermore, trade fairs are largely attended by a specialist audience, and often restrict members of the general public from entering freely. While some creative practitioners and researchers might be well-connected or determined enough to circumvent such barriers to entry, for the average creative practitioner it might prove to be an insurmountable hurdle.

The only two materials libraries I visited that remain



Figure 18. Material lab, 2015
Photo credit: Katharina Vones

completely committed to the open-access model are the Material Considerations Materials Library in Glasgow and the Material Lab in London. This is primarily achieved through full corporate sponsorship, which creates an operational model with a different, but no less significant, set of challenges to the roadshow model. Corporate sponsorship can lead to a bias in material selection towards the industry in which the sponsor is operating, leaving little room for showcasing materials in an unbiased, commercially detached fashion and curtailing the breadth of the collection on offer.

While the sponsorship model is a perfectly valid and still very valuable approach, it is not suited for disseminating knowledge of more experimental and unusual materials. For this, the institutional model would appear to be the most suitable, such as in the case of the Institute of Making. Gathering researchers from a varied range of disciplines as well as core staff members who are practitioners in the fields



Figure 19. A display of tile and wallpaper samples at Material Lab, London
Photo credit: Katharina Vones

of art, design, engineering and material science in one place might seem like an ideal incubator for significant material exploration. However, the closed-access policy imposed by the host institution, means that this resource can only ever benefit a very small pool of select initiates. The ideal situation would be to establish a network of such materials libraries at numerous educational institutions throughout the UK, sharing knowledge and skills with each other and with the wider education, creative and maker communities on an open-access basis. However this will in all likelihood remain a theoretical scenario, as currently the merely nascent interest of the creative community and educational institutions to foster an innovative material culture translates into a dearth of available funding.

Finally, materials libraries utilising the subscription-based model appear to thrive. With new branches opening every year, there seems to be an appetite for the professional

services and exclusive spaces provided by those branded experiences. The locations of newly established libraries (for example: Shanghai, Daegu, Bangkok) point to a drive, particularly in Asia, to expand expertise in this area and for educational institutions to be seen to take out memberships as an outward indicator of prestige. This is a trend already observed in North America, where universities often justify their considerable tuition fees by providing students with the most expensive resources. Some commercially-run materials libraries have monetised this trend further by operating a franchise model, which enables individual universities, governmental bodies and companies to establish their own, scaled-back versions of the brand's main materials libraries with relative ease. For example, the Material Connexion brand has so far established seven 'satellite libraries', and fourteen 'educational libraries', most of which are concentrated in North America, Asia and the Middle East.



Figure 20. A display of surface finish samples at the Material Lab, London.
Photo credit: Katharina Vones

While the general drive towards a more inquisitive material culture in education, corporate, and public life is to be applauded, the subscription-based model is by definition exclusive, and does not aid creative practitioners and researchers who operate outside of these contexts.

It is these latter groups, who, without institutional or corporate access to materials libraries and little direct contact with materials scientists, developers and suppliers, depend on open-access materials libraries to remain operational. The development of personal, customised materials libraries through creating unique material samples that combine readily available materials, as evidenced by some samples kept in the SCIN Gallery, could offer an alternative for those not able to access a materials library. The creation of sets of isomorphic prototypes, as recently suggested by Wilkes et al. (2016), for individuals and collaborative research groups in order to establish a common language for experiential material properties, is another promising possibility. For the average contemporary jewellery practitioner, without academic or commercial affiliations, materials libraries thus remain a fascinating proposition of limited practical value.

REFERENCES

1. COHN, S. 2012. A brief Contemporary Jewellery History. In: COHN, S. (ed.) *Unexpected Pleasures - The Art and Design of Contemporary Jewellery*. Melbourne and London: Skira Rizzoli and Design Museum.
2. DOORDAN, D. P. 2003. On materials. *Design Issues*, 19(4), 3-8.
3. FUSAKUL, S. M. 2002. *Interactive Ornaments*. Doctor of Philosophy, Royal College of Art, London.
4. HEISS, L. 2009. *Material Poetic* [Online]. Available: <http://www.leahheiss.com/#/polarise/>
5. JOHNSON TILES. 2011. *Material Lab Homepage* [Online]. Available: <http://www.material-lab.co.uk/> [Accessed February 10th, 2016].
6. KARANA, E., HEKKERT, P. & KANDACHAR, P. 2009. Meanings of materials through sensorial properties and manufacturing processes. *Materials & Design*, 30(7), 2778-2784.
7. KARANA, E., HEKKERT, P. & KANDACHAR, P. 2010. A tool for meaning driven materials selection. *Materials & Design*, 31(6), 2932-2941.
8. KARANA, E., PEDGLEY, O. & ROGNOLI, V. 2015. On materials experience. *Design Issues*, 31(3), 16-27.
9. MATERIA. 2013. *Materia to Close Amsterdam Inspiration Centre* [Online]. Available: <http://materia.nl/article/materia-to-close-amsterdam-inspiration-centre/> [Accessed October 29th, 2013].
10. MIODOWNIK, M. 2009. *Materials in the Creative Industries* [Online]. Materials UK. Available: <http://www.matuk.co.uk/docs/MaterialsUK-CreativeIndustries.pdf> [Accessed May 25th, 2012].
11. PIQUERAS-FISZMAN, B., LAUGHLIN, Z., MIODOWNIK, M. & SPENCE, C. 2012. Tasting Spoons: Assessing how the Material of a Spoon affects the Taste of the Food. *Food Quality and Preference*, 24, 24-29.
12. SKINNER, D. 2013. *The Critique of Preciousness*. In: SKINNER, D. (ed.) *Contemporary Jewellery in*

- Perspective. New York: Lark Jewellery & Beading.
13. VONES, K. 2014. Transcript of Interview with Brice Tual at the Innovathèque FCBA, 31st of July 2014.
 14. VONES, K. 2017. Towards the Uncanny Object: Creating Interactive Craft with Smart Materials. Doctor of Philosophy, Duncan of Jordanstone College of Art, University of Dundee.
 15. WARD, J. 2008. Materials in Art and Design Education [Online]. Available: www.iom3.org/fileproxy/37527 [Accessed February 10th, 2013].
 16. WILKES, S. 2011. Materials Libraries as Vehicles for Knowledge Transfer. *Anthropology Matters Journal*, 13 (1), 1-12.
 17. WILKES, S., WONGSRIRUKSA, S., HOWES, P., GAMESTER, R., WITCHEL, H., CONREEN, M., LAUGHLIN, Z. & MIODOWNIK, M. 2016. Design tools for interdisciplinary translation of material experiences. *Materials & Design*, 90, 1228-1237.

ABOUT THE AUTHOR

Dr Katharina Vones
Napier University
k.vones@napier.ac.uk
www.smart-jewellery.com
www.kvones.com

Katharina has been a practicing Contemporary Jewellery artist since 2006 and currently works as a Research Fellow in Digital Craft and Novel Materiality at Edinburgh Napier University. She has exhibited her work widely both nationally and internationally and actively blogs about her research and material explorations as a way to encourage craft practitioners to learn about and get involved in digital technologies: www.smart-jewellery.com and www.kvones.com



Journal of Jewellery Research
<http://www.journalofjewelleryresearch.org>

ISSN 2516-337X

Loughborough University,
Northumbria University &
University of Dundee.
First published in February 2018, UK.
Copyright © Journal of Jewellery
Research and the author.
All rights reserved. Apart from fair
dealing for the purposes of study,
research, criticism or review, as
permitted under the applicable
copyright legislation, no part of
this work may be reproduced by any
process without written permission
from the publisher or author.
For permissions and other inquiries,
please contact the editors:
<editorsjor@gmail.com>
Journal of Jewellery Research is a
double blind peer-reviewed research
journal supported by an International
Editorial Advisory Group.

THE ADORNED AFTERLIFE RESEARCH NETWORK

AUTHOR

Stephen Bottomley

JJR journal of
jewellery
research



Figure 01. Lightning
talks Ben Russel.
Network Meeting 310316
Photos Diego Zamora
2016



ABSTRACT

The Adorned Afterlife network' is a positional report following the formation (2015) of a multi and inter-disciplinary research network. The shared aims and objectives of this emerging network are to re-examine the less familiar or recognisable objects of adornment in our national collections through the lens of each others disciplines and practices in order to gain new insights and understandings.

This report documents through text and image the formation of the group up until its first full meeting in Edinburgh 31st March 2016. The report sets the context for further collaborative projects between its existing members as well as the potential for future work with practitioners, researchers and museums.

INTRODUCTION

Museums around the world contain many hidden or out of reach treasures from our past that relate directly, or indirectly, to the body as adornment. These objects may be unfamiliar, unwearable, intangible or simply unknown to contemporary eyes.

Artefacts may potentially include physical objects in plain view, non-corporeal ones represented in paintings and carvings, or items excavated from tombs and burials or remaining undisturbed beneath the layers of ancient funereal wrappings. These items placed long ago, out of sight and reach, but now made visible by non-invasive technological advances within research and analysis. These fascinating objects can have a deep symbolic significance, relating to life and death or an afterlife.

The Adorned Afterlife network (est. 2015) was supported by the University of Edinburgh's Challenge Investment Award and brought together researchers from across Design, Archaeology, Forensic Anthropology, History,



Figure 2. Symposium Poster (Graphic Design Daniel Lester)

Philosophy and Museology to examine objects of adornment revealed or captured with digital technologies. An original aim of the network was to explore existing precedents and new technologies for the non-invasive examining of artefacts and paintings in museums by computerised tomography (CT) and magnetic resonance imaging (MRI) scanning. It proposed to apply these practices to the harder to reach, less tangible objects in museum collections that might be considered 'Otherwise unobtainable' (Harrod).

Sharing our insights and knowledge we agreed to collectively question:

- Their purpose (why were they made)
- Their significance (both then and now)
- How they were made (and by whom)

The network's aims are to encourage high quality speculative multidisciplinary research, involving archaeological anthropological issues and engagement between disciplines that may not otherwise have an opportunity to share discourse and analysis.

THE RHIND MUMMY- A PILOT PROJECT

The inspirational genesis of the network came from an earlier 2012 research project by the National Museums Scotland (NMS) (J. Tate and S. Kirk) and University of Edinburgh (UoE) anthropology departments (E. Kranioti, B. Osipov, J. Ouranos) for which Professor van Beek, the chair of Radiology at the University's Clinical Imaging Research Centre, scanned a 1st C Roman / Egyptian mummy. The Rhind Mummy, as it was known, had been brought to Scotland by the archaeologist Alexander Rhind in the 1850s. Dr Kranioti, UoE Forensic Anthropology, was able to create biomedical imaging of the skeletal remains beneath the bandages from these scans.

The scans were primarily used to determine the mummy's age, sex, stature, health and ethnicity. Outcomes were published in tandem with the 2012 NMS Exhibition, 'Fascinating Mummies' curated by the then head of conservation and analytical research Jim Tate. A by-product of these medical scans were the images of talismans and amulets not only on the surface of the mummy's wrappings,



but also beneath the surface attached to the mummy's skull. It was the descriptions of the amulets and talismans in the press that were so intriguing and the catalyst for this further research and the 2015 network being established between academics at the UoE (Bottomley & Kranioti) the NMS (Maitland) with a jewellery focus. Our pilot project

Figure 5. Jenny Gray, Susan Cross, Ben Russel, Diego Zamora, Stephen Bottomley

re-examined the 2012 MRI scans, printed 3D models for handling and discussion in order to reach beyond the identification and medical examination of the body and explore the amulets and talismans attached to the embalmed mummy. Bottomley + Zamora presented these as a first case study at our first full network meeting and in an exhibition in the Edinburgh College of Art / UoE 31st March 2016.

Dr Margaret Maitland, NMS Curator Ancient Mediterranean collections organised a visit to view the Rhind mummy at the Granton archive. The Rhind Mummy's bandages are black due to the use of a dark tree resin that was applied to seal them. Amulets were embedded into this surface, Dr Siobhan McLaughlin, with her anatomical knowledge, noted that the locations of some of these tallied with where organs may have been removed as part of the embalming process. A mummy case was intended to encase the body within for an eternity enabling the spirit to travel on to the afterlife beyond.

The singular item of adornment on the Rhind Mummy, hidden from reach and sight, was a piece of metalwork detected beneath the bandages by the 2012 CT scans.

The singular item of adornment on the Rhind Mummy, hidden from reach and sight, was a piece of metalwork detected beneath the bandages by the 2012 CT scans.

Analysis suggest it to be a thin sheet on the forefront of the skull. The scans and subsequent graphic renderings suggest a winged scarab of a similar design to the one attached to the outside of the mummy's wrapping.



Figure 6, 7. Details of mixed media amulets embedded on the Rhind Mummy

Figure 8. (left to right)
Elena Kranioti, Giovanni
Corvaja, Jack Ogden

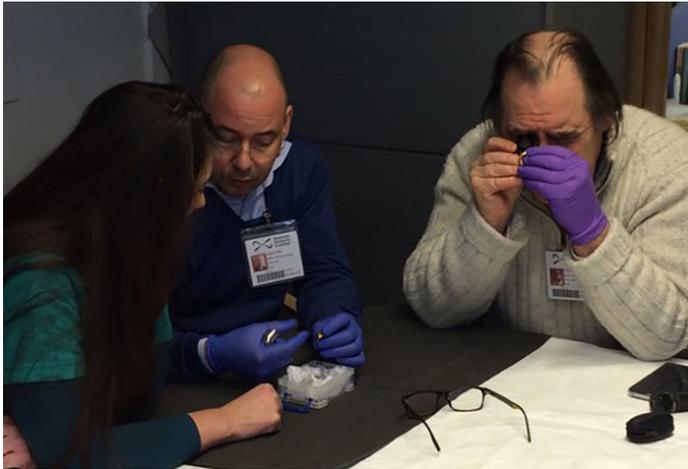
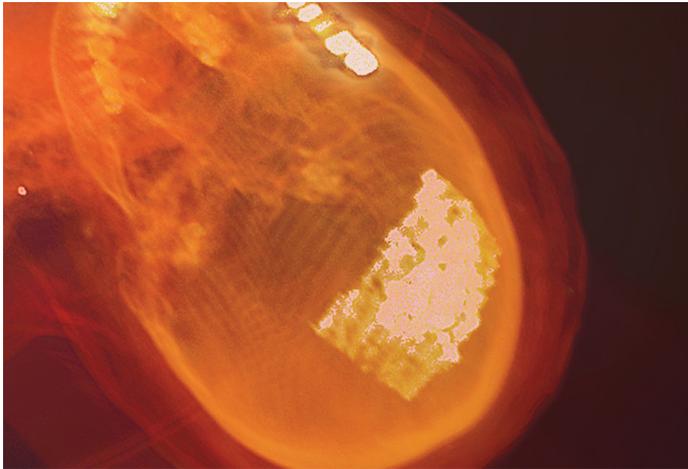


Figure 9. Image by
Daniel Lester from
Scans by the Clinical
Research Imaging
Centre (CRIC),
Edinburgh



There have been several printed reproductions of this winged scarab beetle made from the non-invasive MRI scans. These simulacrum have been created in plastics, resins and sintered metals, unknown at the time of original creation, that in their new reality are all speculative representations of the ‘real’ object which lies beneath.

Speculation on methods of making and possible material were based on the material knowledge and subject expertise of the network and added depth and detail to then earlier speculation by museum curators. Dr Jack Ogden suggested a future project for the group may involve making tools with the technologies available from these times for other makers to work with to examine the results in a qualitative study.

The thin metal sheet would most likely be made of Gold, like the external piece attached to the bandages of the mummy’s head. The texture and patterns on its surface suggested a chased or hammered surface. What appeared to be linear horizontal and vertical patterns, and suggested a textile backing, were actually created by the scanner and had to be ignored.

Similarly, the low resolution of the CT scan and the quality of the additive manufacture printed prototypes had to be taken into consideration as three dimensional ‘noise’ and not necessarily directly attributable to the actual object. These ‘phantom marks’ created their own fake narrative for the original piece sited on the skull of this unknown young woman.

The mummy, since its discovery, has been posthumously known as the ‘Rhind Mummy’, named after the archaeologist who found it, rather the unknown woman within. In this ancient culture names have power and the Egyptians wrote theirs on many items and texts in the belief that their names being spoken gave them power and energy in the next life. From the original scans and the forensic anthropology work of Dr Elena Kranioti. It is known the

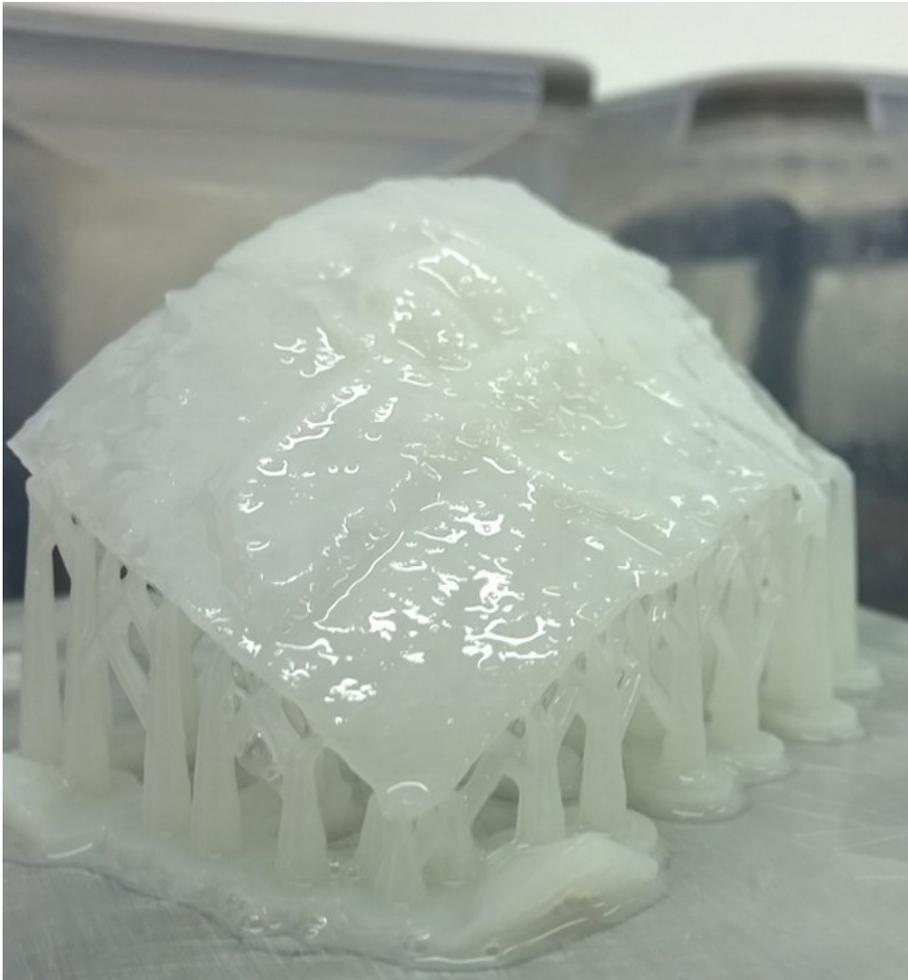


Figure 10, 11. 3D prints of the winged scarab by D. Zamora

body within the Rhind Mummy is that of a woman 158cm in height and between 25-29 years of age. A rolled piece of parchment, most likely papyrus, was also identified sitting directly below her right thigh with the right hand placed alongside it as if holding it. This scroll would be the so-called Book of Breathing. A late funerary composition found on



mummies from Thebes between the 2nd Century and 1st Century AD. On this papyrus would be written her name, like a death certificate and future technology will enable this text to be read from this rolled scroll by 3D carbon scanning technology and reconstruction.



Figure 12. Main Sculpture Court for symposium exhibits 31.03.16



Figure 13. Headpiece/ Badged Beanie, 2016, S Bottomley Knitted Cotton (S. Nolden) and electro-formed silver print (G.Grobler)



Figure 14. Toe and Finger Stalls + Sandals. Gold. Metropolitan Museum. Photo credits: S Bottomley Nov 2015

ARCHIVAL RESEARCH

Early background research involved archival research to range of Egyptian museum collections in Edinburgh, Bristol, Cambridge, Brighton, Manchester and New York. Some of the most common, yet striking, jewellery found are collars of hammered or stamped or chased gold.

In the ancient Egyptian mythological hierarchy, the Gods and Goddesses, Kings and Queens had a special association with gold. The sun god Re was called “Gold of Stars”, Horus was the “Child of Gold”, or “Falcon of Gold” and the king, as the personification of Horus on Earth, was called “Mountain of Gold”. It can be surmised Goldsmiths would have been highly respected for their knowledge of such an important and sacred metal.

Salima Ikram in her book ‘Death and Burial in Ancient Egypt’ (2015) reminds us that it is easy to look back on the



Figure 15. Manchester Museum, 2015. Photo credits: S Bottomley

Egyptians as a culture obsessed by death, when in reality they celebrated life and saw the stage beyond their short physical life as a transitional one to the next.

“Death and birth are the two events universally experienced, and it is their very commonality that helps to link cultures, regardless of any separation in time or place.” Ikram, 2015

We know some pieces of jewellery were buried as grave goods, but others were made specifically for the grave. Burial jewellery is often made of thinner or more flimsy materials. The gold sheet may be far thinner than that used for jewellery worn by the living, as in the example above from the Metropolitan museum. Who would not want a pair of golden sandals for the afterlife after-party?

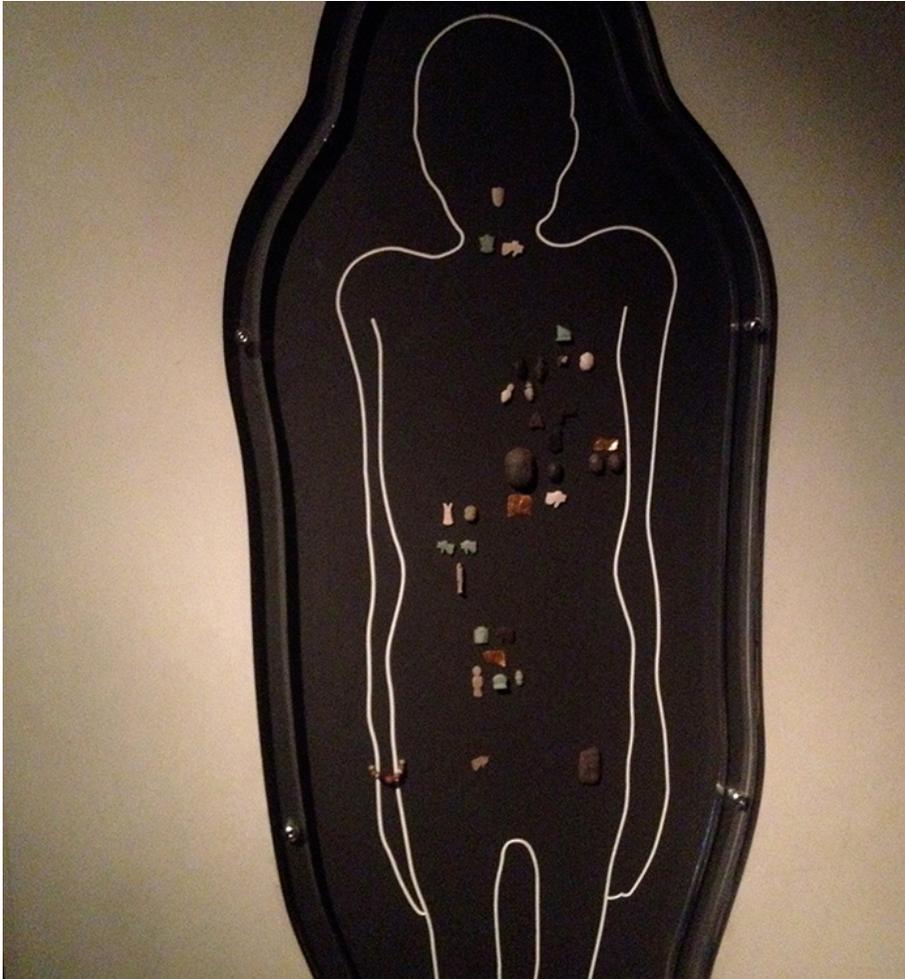


Figure 16. Location of amulets recovered from an Egyptian burial. Bristol Museum and Art Gallery, 2015

Jewellery, objects and tools valued in life have a long association with being applied after death to represent a person. These objects can become embodied in the burial rites that celebrate a passing life and the anticipated spiritual journey ahead to the next. The inter-relationship between maker and material when working with the mortal remains

of our own existence has an equally long and fascinating history.

Our first research network meeting involved each member giving a short presentation or ‘lightning talk’ about their practice and area of specific or general interest and expertise.

These talks allowed the group then to reflect and speculate on each member’s potential contribution to future work and exploration.

Short interview films were also made and later uploaded to our website. One debate developed around if the objects embedded into the exterior of the Rhind Mummy could or should be classified as jewellery. Dr Margaret Maitland stated that museums would interpret these objects as religious amulets for spells and charms, not jewellery.

Our different experience, knowledge and perception of jewellery added new dimensions to how we imagined past work in museums and collections, as well the power of jewellery to be re-interpreted for future works.

A contemporary maker might argue the fact that these handmade items were made for and pinned and placed to specific locations around a body, clearly identifying them ‘wearable objects’ and therefore included them in a contemporary vernacular of jewellery. The concept of objects being placed on static bodies after death for the purposes of a religious ceremony was more widely discussed by the



Figure 17. Lightning talks (left to right) Elizabeth Moignard, Margaret Maitland. Photo credits: Diego Zamora 2016



Figure 18. Lightning talks Giovanni Corvaja. Photo credits: Diego Zamora 2016



Figure 19. Symposium (left to right) Giovanni Corvaja, Margaret Maitland, Stephen Bottomley, Jack Ogden, Elena Kranjota and Jessamy Kelly photos Diego Zamora 2016

network and became a focus for research afterwards. This classifications, meanings and significances has evolved and been extended from Ancient to Modern times. The rationale for the classification for making, wearing and owning jewellery as presented by authors and historians (Untracht 1982), (Phillips 1996) and in wider anthropological studies (Fisher 1984) over several past decades and have been re-evaluated by Schmidt (2016) in her book “Contemporary Jewellery - Innovation or Mimesis?”.

What Schmidt proposes is a classification of how jewellery was seen and understood in the past compared to the present, representing this in two lists, as illustrated on the next page. Within the column ‘Traditional Values of Personal Objects’ -the older value system are drawn from the works of Fisher, Mauss and Vanhaeren. In relation to Rhind Mummy and according to Schmidt’s table, there are three categories that the head’s scarab might fall into to be

Traditional values of personal objects

- Aesthetic expression of beauty
- Gift of courtship and seduction
- Symbol for self-affirmation
- Symbol for group membership
- ethnic marker
- Sign of social facts social marker
- Sign for individuality
- Object for rituals and ceremonies
- Object for offerings
- Amulet and Talisman
- Healing object
- Means of exchange
- Inalienable possession
- Means of communication
- Counting device

Additional values in jewellery today

- Means for reward
- Object for memory and comfort
- Object for humour and play
- Object for desire and envy
- Object for sensual sensation
- Underline physical attractiveness
- Object for body modification
- Sign for social status and demarcation
- Weapon
- Object of Investment
- Exploitation

- Karl Bollmann, 2015
- Daniel Miller , 2008
- Martina Dempf, 2002
- René Girard , 2012
- Wulf Schiefenhoewel, 2014
- Pravu Mazumdar, 2014
- Christa Sütterlin, 2014
- Oppi Untracht, 1982

classified as jewellery: Object for rituals and ceremonies, Object for Offerings and Amulet & Talisman. However, our experience with members of the network from museum backgrounds proved that this was not the case and none of these was accepted for the Rhind objects. Possibly others on the list may also be museum questioned, such as ‘counting devices’. Is it our contemporary perspective of jewellery coupled with a desire for it to encompass a far broader range of ideas widening the field retrospectively too early or simply too generally?

CONCLUSION

OuraVY research network demonstrated the clear advantages of the inter-disciplinary group. There were many insights to be gained from shared discursive, ranging analysis and discussion Our different experience, knowledge and

Figure 20. Slide from presentation at the School of Jewellery listing authors from Schmidts (2016) classification research as cited by the author 13th June 2017

perception of jewellery added new dimensions to how we imagined past work in museums and collections, as well the power of jewellery to be re-interpreted for future works..

Differences of classification and the interpretation of meaning and significance of jewellery by both past and future generations of makers and historians may never be completely resolved or aligned. These two groups, makers and historians, examine the subject from different perspectives and starting points of reference. The maker begins from the point of creation and the technicalities of 'how' and from 'what' it was it made, as well as the aesthetic language. An historian considers the scientific and recorded evidence of where it was found, how often it appears and if there is a systematic pattern to this occurring as proof. The value of the discussions between McLaughlin, who works with X-Rays in the NHS and her contemporary medical expertise reading data and her own shared insights into how contemporary images capture jewellery embedded in living bodies, were fascinating to hear alongside the curators and archaeologists such as Ogden and Russel who are able to recognise fakes and imitations from the narrative of an artefacts construction, rather than their age or provenance. The expertise and skill of the network was not always a measurable thing itself but was far more wonderful and ephemeral to witness.

After the initial 'case study' of the Rhind Mummy, future plans are to engage a range of makers with a wider network of museums to explore a greater diversity of these hidden, invisible or overlooked jewellery treasures that may lie within their walls. A great deal of data gathered from the network meeting and the conference was recorded and is yet to be fully analysed for a more detailed study. This may form part of future work by some group members or future researchers. More than a year on from the first meeting and symposia and a recent personal relocation to work at Birmingham City University places me within a new and

exciting network of museums with their existing links with the School of Jewellery's Industry Innovation Centre and its digital scanning and manufacture expertise. The flexibility of the 'net' in our network needs to be tested

Following the 2016 symposium and first networking event of 'Adorned Afterlife' the National Museums Scotland have held a new exhibition that opened 31st March 2017 'The Tomb: Ancient Egyptian Burial' an exhibition curated by Dr Margaret Maitland in which she has incorporated sample of Egyptian paste made by network member Elizabeth Turrell, who was recently appointed as a visiting Professor at the School of Jewellery. Barbara Schmidt joins the school also a visiting Industry fellow and so the opportunity is ripe to expand research on her published jewellery tax.

So why do the classifications of Contemporary Jewellery or Art Jewellery, as it is also known in the United States, vary in understanding so greatly between museums, historians, curators and contemporary designer-makers? It may simply be the fact that as a genre Art Jewellery is still relatively new in the landscape of the arts and crafts.

The Art Jewellery movement in Europe arose from the influence of Scandinavian design of the 1940's / 50's and in the US from the work of giants like Alexander Calder, making wearable art pieces over a slightly longer period. Britain, Germany and Holland have all been leading areas for its development and growth over the past seventy years.

Since the 1960s the boundaries of jewellery have been continually redefined. Conventions have been challenged by successive generations of independent jewellers, often educated at art college and immersed in more radical ideas. New technologies and non-precious materials, including plastics, paper and textiles, have played a part in attempting to overturn notions of status traditionally implicit in jewellery. The Bronze and Early Iron age with worked and smelted copper and bronze runs in parallel with the Early Dynastic and Old Kingdom periods of Egypt up to

approximately 3000 BC. Put another way, if a film consisting only of images of jewellery from the last 3000 BC to today, some 5016 years, was to be condensed into a one hour and forty-minute film, the section on contemporary jewellery would be contained in the last one and a half minutes of credits.

If this timeline was extended to the oldest recognized pieces of adornment, the small dyed, pierced and strung mollusc shells found in eastern Morocco in 2007 and dated at 82,000 years old it would change the timeframe of contemporary jewellery to be in the last 1/2 second of the film.

ACKNOWLEDGEMENTS:

The Adorned Afterlife Network and symposium was supported by:

The University of Edinburgh's Challenge Investment Fund
The Scottish Goldsmith's Trust

We thank the National Museums Scotland and the 2012 research project by J. Tate and S. Kirk and University of Edinburgh anthropology departments E. Kranioti, B. Osipov, J. Ouranos and the scanning by the University's Clinical Imaging Research Centre under Professor van Beek, the chair of Radiology.

BIBLIOGRAPHY

1. Fisher, A. 1984. *Africa Adorned*. New York: Harry N Abrams.
2. Ikram, S. 2003. *Death and Burial in Ancient Egypt*. New York: Aus Press.
3. Phillips, C. 1996. *Jewellery from Antiquity to the Present*. London: Thames & Hudson.
4. Schmidt, B. 2016. *Innovation oder Mimesis: Warum wir Schmuck tragen*. Berlin: Taschenbuch.
5. Untracht, O. 1982. *Jewellery Concepts and Technology*. New York: Doubleday Company Inc.
6. Harrod, T. 2007. *Otherwise Unobtainable: The applied arts and the politics and poetics of digital technology*. *NeoCraft: Modernity and the Crafts*, ed. by Sandra Alföldy. Halifax: The Press of the Nova Scotia College of Art and Design, pp. 225-241
7. Guerra, F., Maitland, M., Price, C., Ponting, M., Grajetzki, W., Shaw, I. and Troalen, L. 2014. *Egyptian Gold - Ancient Context, Modern Analysis*. National Museum of Scotland and PICS 5995 CNRS Project, 16th October, Edinburgh
8. Vanhaeren, M. 2003. *Speaking with beads: The evolutionary significance of bead making and use*; In: d'Errico, F. and Backwell, L. (eds.), *From Tools to Symbols, From Early Hominids to Modern Humans*, *Proceedings of the International Round Table*, 16-18 March, Johannesburg.
9. Schmidt, B. 2017. *Contemporary Jewellery Innovation or Mimesis?* Industry Evening, Birmingham School of Jewellery Industry event, 13 June, Birmingham.

ABOUT THE AUTHOR

Stephen Bottomley
Birmingham City University
School of Jewellery
<http://www.adornedafterlife.eca.ed.ac.uk>

Professor Stephen Bottomley is Head of the School of Jewellery at Birmingham City University (2017) having previously led the Jewellery and Silversmithing department at Edinburgh College of Art, University of Edinburgh (2008-17). Trained at the Royal College of Art (MPhil 2001), University of Brighton (MA 1998), West Surrey College of Art (BA Hons 1989) he chaired the UK Association for Contemporary Jewellery (2005-07). Jewellery in mixed media including enamel, silver, gold, rubber and steel is in the collections at the National Museums Scotland, British Museum and Royal College of Art and are exhibited internationally.



Journal of Jewellery Research
<http://www.journalofjewelleryresearch.org>

ISSN 2516-337X

Loughborough University,
Northumbria University &
University of Dundee.
First published in February 2018, UK.
Copyright © Journal of Jewellery
Research and the author.
All rights reserved. Apart from fair
dealing for the purposes of study,
research, criticism or review, as
permitted under the applicable
copyright legislation, no part of
this work may be reproduced by any
process without written permission
from the publisher or author.
For permissions and other inquiries,
please contact the editors:
<editorsjoj@gmail.com>
Journal of Jewellery Research is a
double blind peer-reviewed research
journal supported by an International
Editorial Advisory Group.

MAKERS MOVE - JEWELLERY AS A MEDIUM OF EXCHANGE

AUTHORS

*Gitte Nygaard
Josephine Winther*



JJR journal of
jewellery
research



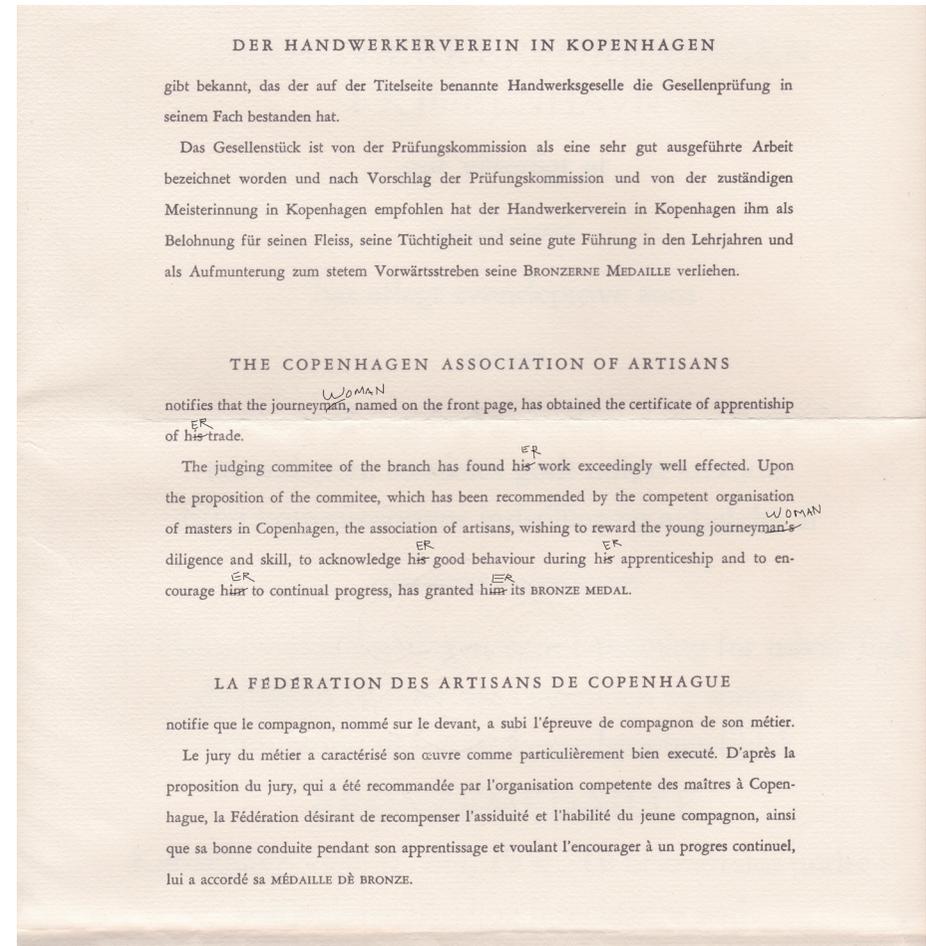
Figure 1. Makers Move setting up the mobile workshop at Place Collette, Paris, 2013. Photo credit: Jair Straschnow

ABSTRACT

Jewellery is in a sense ‘a tangible memory’, sometimes passed on to others and always a personal storage for memories to the person who wears it. Makers Move exemplifies a wish to explore where jewellery goes, how it changes and becomes a bricolage of memories. Jewellery and objects can be traces of life and permeate value-based criteria, because they reflect our own history. They can be mediators for emotions, strength, and faith and accentuate an affinity between people, families and cultures. In order to examine some of these aspects and the dialogue between work and people, we decided to move the jewellery bench out into the public space and started the jewellery street project called Makers Move – ‘a medium of exchange’. Makers Move aims to show aspects of how jewellery is made, to explore the stories and significance attached to jewellery and small objects and to examine how jewellery and other objects can tell us about who we are.

INTRODUCTION

The journey we have embarked upon with our jewellery street project Makers Move, was launched in Copenhagen, 2012. Since then we have had the opportunity to visit different cities around the world - Paris, Cape Town, Dongyang, Gothenburg, Sydney and Copenhagen, where the project originally and literally hit the road. For a long time, we had a wish to create a way in which we could travel with our profession together – not just as jewellers but also making interactive projects in public spaces. The core of the Makers Move project is to revisit the memories and stories that connect people and places through their jewellery and small portable objects. By telling the stories, people in the street reconnect to past or present loved ones and places through their objects/jewellery.



We started Makers Move out of a mutual wish to explore the fields of jewellery and objects in a different context from the one we had known for years – the maker behind the scenes. Our collaboration started out of a need to get away from the jewellery bench’s solitude and share ideas and thoughts. One of the great qualities of our jewellery discipline is that we can be flexible and work in very small

Figure 2. Letter received from 'The Copenhagen Association of Artisans', 1991. Photo credit: Gitte Nygaard



Figure 3. Logo from the 'The Copenhagen Association of Artisans'. Photo credit: Gitte Nygaard

and improvised places – and practically we can put our workshop in a suitcase. The idea of mobility has appealed to us for a long time, and at some point after an inspiration trip to Istanbul, we decided to make a workshop on wheels – a place which could serve as a ‘base’ to interact with people on the street. The mobile unit is our base where we work and have conversations with people on the street about objects or pieces of jewellery that they are carrying.

On the street, we surrender ourselves to the serendipity and work with what the moment brings. Taking to the streets, talking to ordinary people with the city as our backdrop, away from our confined workshop, we embrace the concept of the art of getting lost, and the art of noticing what has been disregarded. Our wish is to build a bridge between maker and audience. Operating on the street provides a ground for us as makers to show and talk about what we do, and give the audience the opportunity to understand why we still make



Figure 4. Josephine stamping a cast amulet, front of the Louvre, Paris. Photo credit: Gitte Nygaard

things to define ourselves, and shed light on jewellery’s relational qualities. There are no money transactions at the workshop. We offer our time, lend an ear and skills in return for insights into someone’s private life, that normally are invisible.

LEARNING A CRAFT

In the book ‘The Craftsman’ the American Sociologist Richard Sennett writes about thinking with our hands, the kind of wordless thinking we unfold when we have mastered a technique and as a matter of course utilise it. He views the satisfactions of physical making as a necessary part of being human. We need craft to keep ourselves rooted in material reality, providing a steadying balance in a world which assigns too much value to mental facility. Today, we have become more and more alienated from a physical



Figure 5. Renovation of a cast amulet.
Photo credit: Anders Møller

understanding of the world. But for millennia we as humans have understood the world through things, through touch and connection to other people through what they were making.

The history of the intelligent hand takes us back more than 1.75 million years, to the time when ‘man’ created the first primitive tool, the hand axe. However, seventy thousand years ago something remarkable happened in our history, we created our first artistic objects in the form of other stones with beautifully engraved patterns. With this step the items we made became something more than functional tools, rather they became artistic objects carrying a sign and a message from the maker (Havemose, 2013).

Sennett finds his ideal of craftsmanship in the Medieval Workshops where craft was a communal endeavour. A specific hierarchical structure was built into these workshops with a master and an apprentice. However, during the Renaissance, Sennett states, instead of craft developing



Figure 6. Casting pewter in oasis.
Photo credit: Anders Møller

through a shared understanding and will to improve one’s skill, a separation between art and craft manifested itself. Hereafter, craft was valued as something lower than art, and belonging to the craftsman of the lower classes.

We share the same technical background as the tradition of the Medieval Workshops, including 4 years of training with a master, learning skills through the deliberate repeated practicing of different jewellery techniques. The years of intensive practice of complex skills and the craft of making has become deeply engrained, now they are effortlessly available, almost without being conscious of it dependent on tried and innate ways of using tools. It’s through organizing body movements, understanding the idiosyncratic raw materials with a depth of involvement so comprehensive the process of making becomes almost automatic.



Figure 7. Gitte at the workbench, Paris.
Photo credit: Josephine Winther

In later Medieval Europe it was both tradition and mandatory that in order to become a Master in Crafts you spent time as a journeyman which meant moving from one town to another to gain experience of different workshops. Only a person who had completed the traditional apprenticeship could be considered a journeyman. The concept still exists and is still based on the tradition of

gathering skills after an apprenticeship in different countries. We draw inspiration from the concept of being on the road combined with practicing skills, hence the name Makers Move. We are looking at the concept from a new perspective and we see ourselves as contemporary journeywomen occupied with material culture in connection to jewellery.

OBJECTS AND ALIENATION

In an interview with the Danish newspaper Weekendavisen the British author, artist, and ceramist Edmund de Waal expressed a similar critique as that of Richard Sennett, when he stated how people have become alienated from one of the most fundamental human abilities: creating things using our hands, and thereby shaping and changing the world. In De Waal's mind, this alienation of the material has led to an abuse of the world's resources, on the relationship between people, and an abuse of human desire through capitalism. In this process, we as humans have lost something essential and exchanged it with an easier and more convenient way of interacting with the world through smartphones and social media.

People have become alienated from one of the most fundamental human abilities: creating things using our hands, and thereby shaping and changing the world.

In this perspective, craft and work has become an instrument to achieve some exterior goal, but De Waal and Sennett's point is that work is never something finished, it is always in process, always moving in an endless interaction



Figure 8. Karen's ring. The hand on the ring is 'The Red Hand of Ulster'. Photo credit: Karen Grøn

between maker and material. Work is an intrinsic good, and mastering a craft means interacting with the world on a deeper level, but the general point is that work is universal, everyone can do it.

Makers Move tried to rediscover the connection between the person and the object. It is important to bear in mind that objects are never neutral or empty. Objects determine our behaviour and way of thinking to a large degree. This point is largely championed by the anthropologist Daniel Miller. He calls this the humility of things: "The surprising conclusion is that objects are important, not because they are evident and physically constrain or enable, but often precisely because we do not 'see' them" (Miller, 2005). This insight has wide ranging consequences. It means that human beings are not as free willed and undetermined as we might think. And it is not only our biology or consciousness that determines our lives, but

also the material culture surrounding us: "Such a perspective seems properly described as 'material culture' since it implies that much of what we are, exists not through our consciousness or body, but as an exterior environment that habituates and prompts us" (Miller, 2005).

Considering Miller's idea of objects, entering a dialogue with a person's jewellery is a gateway into this person's mode of thinking, sensibilities, and life story. Engaging with a person through a shared interest in the jewellery they are wearing is a way of making conscious or manifest the baggage of life which we all carry around with us without noticing or thinking about it. Makers Move is therefore an attempt to re-enchant the world, and to uncover the hidden stories of a person's life.

Makers Move is therefore an attempt to re-enchant the world, and to uncover the hidden stories of a person's life.

The way we (people) often meet things, is homogenized and diluted down to something familiar. But how can we be surprised of the world anew is a big challenge, how to bring the experience of things back to us in our lives. Things exist as stories, we can either read and immerse in them – or refuse to do so.

JEWELLERY AS STORYTELLING

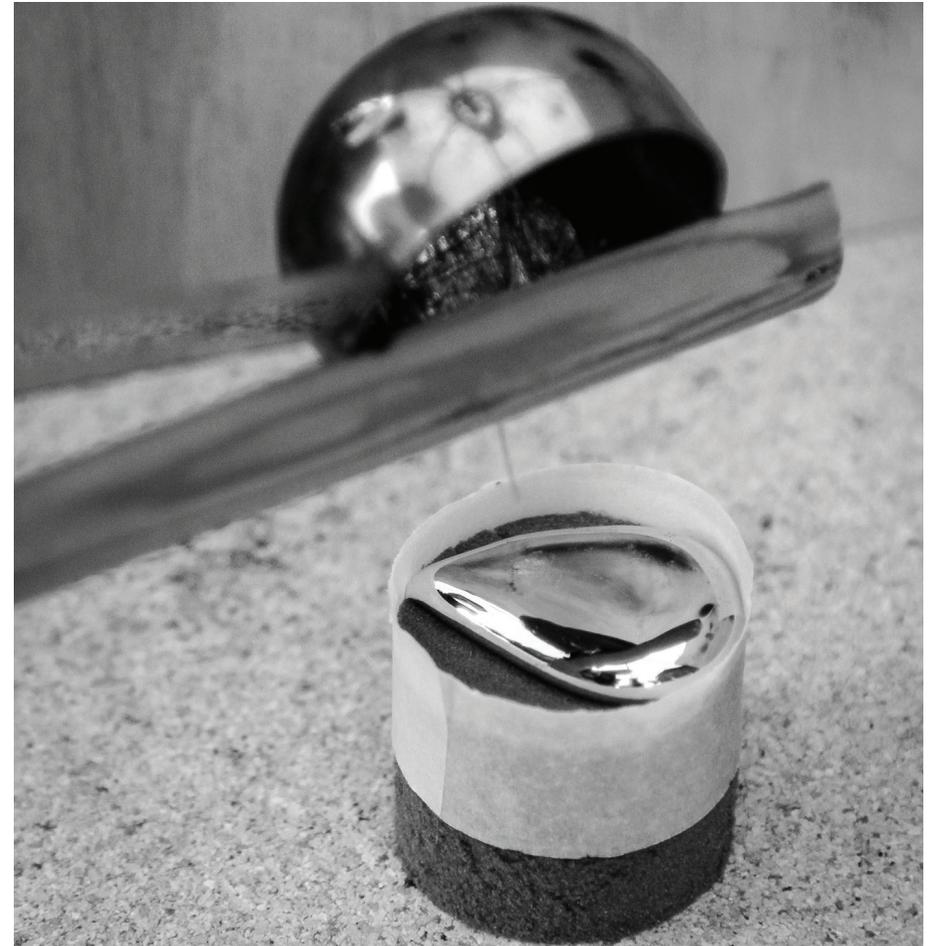
We want to share and take part in a dialogue about the values inherent in the hand-made, the everyday relations and the story-telling qualities that craft represents. Objects can be honest traces of life, they can be passed on through generations and go against aesthetic and value-based

criteria, because they reflect our own story. They can cause us to share the past and the present with other generations and thereby help us become closer to each other. We have focused on an aspect of jewellery that we often neglect – the personal and relational aspect, and the meanings that emerge in the exchange between object and wearer over time, and which often have profound symbolic layers. Here the layers reach far beyond the actual value of the jewellery and beyond what we see when jewellery is worn or exhibited (Mazanti, 2016). Jewellery has a physical existence, but the reason why we wear it is far more mysterious and invisible. Its mobile aspect gives jewellery potential as a constant, if quiet, intervention into everyday life.

A piece of jewellery is carried close to the body and can therefore be an extension of the body itself, a part of that person's identity. Things and jewellery, and their materiality

A piece of jewellery is carried close to the body and can therefore be an extension of the body itself, a part of that person's identity.

as objects connect subjects and sometimes almost become subjects themselves (Sjørnslev, 2013). This relates to Daniel Millers point. Objects are not neutral, but rather a social phenomenon that is loaded with feelings. Objects are social, because people are social beings. Jewellery and objects have the power to combine the past with the present time, making lost moments apparent again. Memory is a practice through which we engage with the material world. It is within this space that we restore the traces of ourselves and of the past. As such, objects have the ability to serve as living proof to the liminal spaces of time, culture, personal and social identities.



We call Makers Move – ‘a medium of exchange’, and we trade the stories about objects and jewellery, with pieces of cast imprints in pewter of the jewellery and objects that people carry. We make them into pendants – and we always make two copies - one copy is for the person with whom we have the dialogue, and the other is for our archive. The mobile workshop becomes ‘a medium of exchange’, and

Figure 8. Pouring pewter in oasis.
Photo credit: Anders Møller



Figure 10. Different amulets from participants.
Photo credit: Josephine Winther

the amulet becomes a symbolic representation of the story as it was shared. This moment is crucial. In the moment of exchange, the story of the original object becomes alive. People have a very rare opportunity to reflect on the meaning that the object holds for them, and share it with someone else. Space is created for the most intimate, sensitive, emotional, personal meanings to emerge, that almost always speaks of memories of times past and bonds with a loved one (Mazanti, 2016). Jewellery can be cultivated into portable knowledge – a tool for big and complex stories to be passed on.

What is passed on in the moment of making an imprint, is how a new piece comes to life, containing a fragment which is mounted in a new piece, and opens up for a new interpretation, and a new story, weaving the memory into the present day. Things, experiences are re-membered and can be passed on anew. New jewellery relations and stories have been created. A new sensibility to the material world and the

richness of meanings has been established. Untold stories have been made visible (Mazanti 2016).

CONCLUSION

As Makers Move we examine how jewellery and other objects can tell us about who we are.

Jewellery is a dynamic medium for contacting our memories. Any object can carry a story. Whenever an object is given time and reflection both in the making and in the encounter with it, what it contains of memories is passed on to another person – the object becomes an anchor for that story and reflection. By remembering we try to bring the experience of things back to us in our lives.

Thinking with the hands, the joy of making, being creative is an essential aspect of life. That joy can be embedded in the things and acknowledged through the senses when given time. When we stand on the street with our mobile workshop and share/show the making it is a way of mediating the relationship both between the maker and the wearer, and the wearer and the object. The making is an aspect of every piece of jewellery which can vary in interest, but we argue that being aware of the existence of the process will always add to the object.

REFERENCES

1. Sennett, R. 2008. *The Craftsman*. 1st ed. London: Penguin Group.
2. De Waal, E. 2016. *At tænke med hænderne*. Weekendavisen, 4th of May, p. 11.
3. Miller, D. 2008. *The comfort of Things*. 1st ed. Cambridge: Polity Press.

4. Miller, D. Materiality: An Introduction. [Online]. UCL, Anthropology, London. <http://www.ucl.ac.uk/anthropology/people/academic-teaching-staff/daniel-miller/mil-8> [Accessed June 14th, 2017]
5. Havemose, K. 2013. From Design Thinking to Design Making. Swedish Design Research Journal, 3, 64.
6. Benjamin, W. 2006. Berlin Childhood around 1900, 1st ed. London: The Belknap press of Harvard university Press.
7. Mazanti, L. 2016. Makers Move Matter. 1st ed. Amsterdam: Makers Move.
8. Sjørsløv, I. 2016. Makers Move Matter. 1st ed. Amsterdam: Makers Move.