

# Transformational Jewellery:

practice-based research on the relationship  
between transformation and emotional attachment

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A thesis submitted in partial fulfilment of the requirements of  
London Metropolitan University  
for the degree of Doctor of Philosophy

December 2015

# Abstract

The chief aims of this practice-based research are to investigate the nature of attachment between person and object in respect to transformation; to find ways in which objects (jewellery) can be transformed to engender a wearer's emotional attachment; and to demonstrate the different ways of applying such transformations that are pertinent to jewellery. This research has developed a certain type of transformation, which slowly makes traces on the surface of jewellery over time, and is used as an effective way to engender a wearer's emotional response.

The research is situated in the field of contemporary jewellery, and is specifically related to emotion and sentiment; a category of jewellery that relates to the wearer's emotional feeling. The scope of the study extends to research on emotional design since this research focuses on user experiences in developing emotional relationships with the object and on how the designer/maker can promote the formation of such an attachment to the object. Two practical experiments have been conducted in this research to determine and construct appropriate and effective characteristics of transformation that engender an emotional relationship between the jewellery and its wearer, through the examination of the transformational character of emotional objects and the interactions that people have with transformational jewellery. These two experiments involve the process of making in order to provide a way of thinking through the hand manipulating a material. The use of this material thinking, develops a more broader understanding of the relationship between the transformational object and emotional attachment.

Towards the end of the research, a definition of transformational jewellery is constructed that identifies its four important elements. It also provides two sets of practice work that demonstrate the findings and that facilitate the communication of the author's tacit knowledge gained from the experiential knowledge.

This research expands the field of contemporary jewellery by involving studies of emotional design and applying the element of transformation to create an emotional relationship between jewellery and its wearer. This specific transformation, which has been identified in both text and practical works, constitute the main contribution to knowledge in the field of contemporary jewellery.



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# Chapter 1.

## Introduction

This research began with my personal observation that people feel an emotional connection to things that they have around them for a long period of time. Although it may not always be the case, the appearance of these objects changes over time, through their being used, with worn out surface or dents here and there. I hypothesise that these subtle and slow transformational characteristics of the object, to which this research refers as transformations can trigger people's emotional response through the changing appearance signifying their time spent together.

The chief aims of this practice-based research are: to investigate the nature of attachment between person and object in respect to transformation; to identify characteristics of transformational jewellery that elicit a wearer's emotional attachment; and to demonstrate different ways of applying the transformation, which has this effect and is pertinent to jewellery. As a practice-based research, this research applies both the making of practical work and research to demonstrate the contribution to knowledge. The practical works that form part of the methodology is also used as to demonstrate findings of the research.

A general understanding of the research is achieved by going through the research questions at the preliminary stage of the thesis. They provide an overview of the research journey and their order reflects its progression.

## Research Questions

1. Can transformational objects (jewellery) engender user's (wearer's) emotional attachment?
2. Do traces born by an object, which mark the passage of time and are born by an object, arouse a user's emotional attachment? And, if so, what processes of transformation and kinds of traces can arouse attachment; and furthermore how can the maker of objects consciously promote the formation of such attachments?
3. What are the roles of the designer/maker and the wearer in creating such transformation?
4. How can such transformation and attachment be pertinent to jewellery; and how can this contribute to the widening of jewellery's emotional discourse?
5. How can such transformation assist and advance the aesthetics of jewellery?

It can be seen from these research questions that there are two concepts: “transformational jewellery” and “emotional attachment” that dominate the research. They are defined here at the outset in order to establish a firm foundation to the understanding of the research and to explain how the two relate to one another.

### (1) Definition of Transformational jewellery

The term transformational jewellery in this thesis refers specifically to jewellery where the surface has the potential to undergo visible physical changes through use. This potential is intentionally designed by the maker. The concept of transformational is often used to refer to things, which alter people’s cognitive, emotional and behavioural patterns, for example a bible in DeGear’s (2010) research. Contrary to this, the kind of transformation considered in this research happens in or to objects as a consequence of normal use by people; it does not concern changes, which happen to people. It is similar to the blunting of a sharp knife or wearing away of a pair of blue jeans: a change, which has been enacted through people’s use. However it is quite a subtle change, which can also be conceived as traces of use over time and it is not a dramatic change in shape or form. The definition of transformational jewellery and the characteristics of transformation is stated indefinitely at this stage of writing, as this research builds on its definition and characteristics of transformation throughout the thesis by reflecting upon the literature review and the conducted experiments. Therefore, the definition of transformational jewellery and its characteristics is established at the end, as findings of the research.

### (2) Definition of Emotional attachment and emotionally attached object

Emotional attachment in this research encompasses a wide range of positive emotions such as love, engagement, affection, and a bond towards an object. In this research, the term emotional attachment is defined as the repetitive feelings of cherishment (Csikszentmihalyi and Rochberg-Halton, 1981), intimacy (Wallace, 2007), and/or of enduring personal significance (Cheung, Clarke & Clarke, 2006), that people have built up through using the object. It is a term that is similar to sentiment in the fact that it is about a “precipitated emotion” (Ben-Ze’ev, 2000), which is different from emotions or emotional object. Being more specific, and addressing subjectivity, it is similar to the love we have for an old friend with whom we have grown up together over a long period of time; it is about the attachment, which has arisen from the changes they have shared, especially when these amount to a development, which has been enacted or influenced by each other. The Korean saying “Son-ttae-mud-ta” (“stained with hand dirt”), in another words, “well-thumbed”, is very similar

to the definition of emotional attachment used in this research; it can be used in a positive way, connoting the emotional and attached feeling a person has towards an object through use. Although speaking of love as existing in the material context may sound obscure, Chapman (2005) explains that it has been present in the material culture for some time, and gives examples of two men: an Australian man who falls in love with his TV set and married it; and a designer Tony Brook who had affection for his G5 Mac and confessed to stroking it since he was thrilled with the Cinema Display and its rare beauty. A more detailed definition on emotionally attached object is given in the literature review by identifying the distinction between emotional object and sentimental object.

The concept of engendering emotion between human and object has been approached in many ways by both practitioners and theorists. It has become an indispensable topic and a vast area of study in the design field after Buchanan's (1989) paper on user emotions. Since then, research written by Desmet (2002), Jordan (1999), and Norman (2004) have advanced the field further by introducing frameworks that explain how design elicits and influences human emotions. One of the most well known is Donald Norman who has identified the three levels of brain mechanism of visceral, behavioural and reflective in respect to objects in his book, *Emotional design: Why we love (or hate) everyday things* (2004). There is also a group of theorists such as Chapman (2005, 2008), Van Hinte (1997), Verbeek (2005) and Walker (2006a, 2006b, 2010, 2011) who extend this study further and focus on the durability of human-object emotional relations. This group of researchers have approached emotional design in a more practical way by giving examples of existing objects and design products, which enables the relationship between user and object to be sustained for a longer period of time. In the case of the contemporary jewellery discourse, which will be discussed further in the next section, emotion has been approached in various ways by designer/makers but little academic research has been done.

Therefore, although this research is based in the field of contemporary jewellery, the emotional design theorists have offered significant understanding to this research on the nature of the user's emotion towards objects and ways in which physical design of objects can facilitate this. Consequently, this research develops an interdisciplinary research link between the two fields of emotional design and contemporary jewellery by applying these design theories to that of jewellery practice. The element of transformation in making emotional attachment is advanced through theories given by the emotional design field by reinterpreting concepts of "Growing old gracefully" (Chapman, 2005), "Conceptualising materiality" (Verbeek, 2005), "Old and new" (Van Hinte, 1997) into the practical forms of jewellery; and through the testing of these concepts in the practical work.

This research conducts two experiments: “the object interview” and “the prototype experiment” to produce data and knowledge that define characteristics of transformation and that identify their effect on emotional attachment. These experiments provide objective viewpoints from the participants, and experiential knowledge is gained through the process of making. The method of the object interview is used as a survey to examine the diverse ways in which transformational objects engender emotional attachment and to open up the wide range of possibilities that exist for effective transformation in engendering emotional attachment. The prototype experiment is an exploration of a more detailed case study, that is intended to make an interim investigation of the characteristics of transformation, (identified as important in order to engender an emotional attachment), from the information gathered through the literature review and the object interview. These two methods jointly work together by each having its own distinctive aims: the former method provides a wide range of transformational objects to determine the particular transformation, and the latter method provides understanding about the particular focus on transformation for further development. They also both involve a process of making practice works: a transformational object of *Cup & Mat* for the object interview and four prototype jewellerys for the prototype experiment, in order to gather responses by testing it on people and to gain knowledge through the experience of making and experimenting with it. With the use of these two methods, this research intends to demonstrate a model for future practice and does not aim to exhaust every potential area of investigation.

My role as both researcher and practitioner, situates this research within the two boundaries of design research and craft practice. It is design research that involves logical thinking through research and experiment, in order to produce objective data about the effects of the transformation on people’s emotions. This research is an “information driven approach” that “values reliability and validity”(Sanders & Stappers, 2012). The use of the two methods “identifies problems” and “asks questions in a systematic way” (Friedman, 2000) by referring to the objective responses from the participants; and accordingly this leads to the “systematic or scientific knowledge” (Sanders & Stappers, 2012) about the relationship between transformation and emotional attachment. This research is also craft practice, which draws upon author’s own experiential and tacit knowledge to shape the direction of the research. The term “experiential knowledge” in this research is concerned with that which Carter (2005) refers to as “material thinking” or what Adamson (2007) refers to as “thinking through craft”. It is a process of making sense that can only be acquired with the process of making. Including the making process, in the two conducted experiments of this research, produces knowledge about the choice of materials, shape and skills required to develop the definition of transformation. This is knowledge gained through the process of

“thinking through the hand manipulating a material” (Nimkulrat, 2010) or by a “dynamic process of learning and understanding through material experience” (Gray & Burnett, 2009). Therefore, this research produces knowledge from research and experiments, as practice-based research, it also values practices that are correlated with material objects and their making, in order to bridge a gap between research and practice, since knowledge of a creative practice can be acquired from within the practice itself.

By acquiring information from the experiments, this research develops a theoretical definition of transformational jewellery by identifying its four important elements and demonstrating them within two sets of practice works. This inclusion of practice works as the findings of the research facilitates the communication of the author’s “tacit knowledge”, and those intangible attributes that have been gained through the making process and also gained from the author’s past experiences. The demonstration of the two sets of jewellery is considered as an outcome of this research by “supporting the communication of tacit knowledge that might not be fully expressed by textual means” (Nimkulrat, 2012a) and plays a role in articulating the knowledge.



## 1.1 Objectives

1. To review the field of emotional design, and that of emotional jewellery in particular, in order to find approaches for using transformation to arouse emotional attachment.
2. To investigate transformational qualities in existing emotionally attached objects and, coupled with further investigation involving jewellery, to identify efficient kinds of transformation.
3. To use transformational jewellery experimentally, in real-life situations, in order to examine its processes of change and to assess its effect on wearer's emotional attachment.
4. To identify specific kinds of transformation (potentially applicable to a range of kinds of objects), which are demonstrably pertinent to jewellery and which effect emotional attachment.
5. To produce two sets of jewellery, using different materials, which demonstrate the application of specific identified transformations, and show potential for wider jewellery practice.

## 1.2 Thesis structure

This practice-based research is a journey of finding transformations, which effect emotional attachment, and demonstrating these in the context of jewellery. This section explains how this aim is achieved in the research by explaining the overall structure of the thesis.

The following section of the Literature Review (Chapter 2) examines the nature of relationships between person and object by reviewing emotional durable design studies (in Chapter 2.1) and to justify how transformational qualities in an object can facilitate the user's emotional attachment. The next section (Chapter 2.2) reviews historical and contemporary jewellery in relation to emotional attachment by exemplifying academic researches and practical approaches made towards it. The historical context of emotional jewellery highlights the role of makers and wearers in the forming of emotional attachment by exemplifying sentimental jewellery that relates to death and commemoration, and power jewellery such as amulets, talismans and charms. The review of the contemporary context examines a wide range of emotional jewellery and categorises these by the ways in which emotional attachment is elicited. These reviews offer firm background information about other researchers and practitioners of contemporary jewellery, who have made approaches towards making emotional jewellery, and demonstrate the distinctiveness of this research by identifying their dissimilar ways of making emotional attachment. Subsequently, section 2.3 examines the context of transformational object in relations to emotional attachment and develops the focus upon conveying the specific meaning of transformation that is discussed here. It is a compact piece of text, which explains and gives examples of the transformational objects that are related to this research and sets the boundary to the concept of transformation.

The following sections of Chapters 3 and 4, describe experiments, which have been done to draw out findings of the research. Chapter 3 outlines the experiment with the object, which has drawn out a wide range of possibilities on transformation in relation to emotional attachment. By analysing feedback gathered from the interview, it identifies important characteristics of transformation that engender emotional attachment. Chapter 4 reflects upon and makes an interim inspection of the existing knowledge regarding transformation and emotional attachment by using the method of prototype experiment. This section establishes practical information on how transformation is applied to the form of jewellery and how it operates to make emotional attachment in a real-life situation by testing transformational jewellery on participants over a period of time.

With the information gathered from the experiments, Chapter 5 distinguishes a specific kind of transformation sufficient for emotional attachment and demonstrates the application of it in the context of jewellery through final pieces of practice work. This section formulates the final findings of the research in text and in the form of practice, as jewellery.

The thesis draws research conclusions in Chapter 6, by noting the key findings and examining the journey of the research. As practice-based research, this section discusses the role of the practice work in relation to the findings and how this research is located within the field of contemporary jewellery.

## Chapter 2.

### Literature Review

The review of literature covers the two fields of emotional jewellery and transformational objects. The intimate relationship between these two concepts is demonstrated by this research that identifies the characteristics of transformation required in order to effect a wearer's emotional attachment.

The examination within the field of emotional jewellery provides an insight into how jewellery can be designed to engender an emotional attachment to its wearer: and presents examples of this within historical and contemporary context. In this section the terms emotional jewellery, sentimental jewellery and power jewellery are defined by comparing and re-examining the term emotional attachment, proffered in the introduction. This section identifies the diverse characteristics of jewellery needed, including those transformational qualities, in order for it to become emotional jewellery, through an examination of the historical and contemporary context.

The second part of the review offers examples of transformational objects and jewellery in relation to emotional attachment in order to offer clearer parameters of the type of transformation this research is defining in relation to the jewellery. The examples presented in this section, are an on-going identification of the characteristics and the boundaries of transformation within this research and offer information on how they function to arouse emotional attachment. The boundaries of the examples have been defined through the examination of the transformational characteristics that have been demonstrated by previous contemporary jewellery designer/makers; and by employing the elements that can be used in order to build up the subtle and slow characteristics of transformation, which has been asserted at the beginning of the thesis.

## 2.1 Emotionally Durable Design

The study of emotionally durable design forms the basis of the research outlined in this thesis. The main aim of the emotionally durable design study is to identify and to define those designs that can be cherished for a long period of time; and to propose a new genre of sustainable design that can reduce consumption and waste by forming stronger relationships between products and users. According to Verbeek (2005), the crucial questions for their design are “How can the psychological lifespan of products be prolonged?” and “How can things stimulate the forging of a bond between their users and themselves?” Therefore, the study on the nature of relationship between person and object, (and the specific guidance on how a positive relationship is formed between them, based on a theoretical background) are closely related to my research.

One of the key researchers of this field is Jonathan Chapman who wrote *Emotionally Durable Design: Objects, Experiences and Empathy* (2005). A great deal of the theoretical background of my research has been developed from his work, and also other research, including that undertaken by Stuart Walker who has identified the relationship of the wearer with spiritual objects such as prayer beads, in his writing titled *Object lessons: Enduring artefacts and sustainable solutions* (2006a). In addition, Claudel Arguin has written a research thesis titled *Emotional durability is the new sustainability* (2009/2010) and Ed van Hinte edited the book titled *Eternally yours: visions on product endurance* (1997), which consists of writings by a group of Dutch industrial designers.

Emotionally durable design study has not only extended my understanding of emotional relationships with objects but also offered inspiration for the application and development of the meaning of emotional attachment within a contemporary jewellery context, by offering creative strategies and practical tools. Constant reference has been made in this research to Chapman’s approaches to user experience, particularly from the sections of “Creator and creature” and “Leaving space for the user” (Chapman, 2005), Van Hinte’s sections on “Materials” and “Wear and care” (Van Hinte, 1997). Applying these theories of emotional durable design to jewellery makes this research original and distinguishes it from other contemporary jewellery research relating to emotion, and new knowledge is generated through this interdisciplinary research.

## 2.2 Emotional and sentimental jewellery

Emotional jewellery and sentimental jewellery are similar and intimate terms that are concerned with the feelings of the wearer, user, maker, giver and/or the viewer. They cover a wide range of feelings that are generated by the jewellery and/or feelings about it. According to Ben-Ze'ev, (2000) who has offered a definition of the terms emotion and sentiment, the element that creates the difference between the two terms is their expression of their temporal differences: an emotion is a relatively short-term feeling whilst sentiment lasts for a longer period of time. Also, he explains that emotion is an essentially occurrent state and a transient state of feeling, whereas sentiment is a more stable state than emotion; and a precipitated and intellectualised emotion. Ben-Ze'ev (2000) gives an example that if "anger" towards someone is an emotion, then "hostility" towards someone can be referred to as a sentiment. According to Ben-Ze'ev (2000) the relationship between these two terms can be explained as follows:

"Many emotions may take the form of long-term sentiments. This is true, for instance, of love, regret, envy, hate, compassion, hope, happiness, sadness, grief, pride, shame, and guilt. The concern of these emotion can also have general and stable feature which enable the transformation of emotion into a sentiment." (Ben-Ze'ev, 2000, p. 83)

In considering such an explanation, this research therefore defines emotional jewellery as jewellery that is concerned with the unstable, intense and relatively brief feeling that people have towards the jewellery or gained from it. Whereas, sentimental jewellery is jewellery that concerns the stable, less intense and long-lasting feeling people have towards the jewellery or experience from it. In accordance with Ben-Ze'ev's (2000) example of the case of love, it can be said that people have "fallen in love" with their emotional jewellery and are "being in love" or "staying in love" with their sentimental jewellery; and since this emotion of love in emotional jewellery may take on a long-term sentiment, it has the potential to become sentimental jewellery.

Returning to the definition of emotionally attached jewellery, a term that is used in this research, this is more concerned with the term sentimental jewellery, since it is about a long-term and precipitated love a wearer feels towards the jewellery. It is a more intensified term that is focused on the wearer and their continual positive emotion.

This section examines both emotional and sentimental jewellery in an historical and contemporary context to reflect on how short-term and long-term emotions are aroused from them. These are broad concepts that can be said to have existed since jewellery was first

worn. However, according to Adhe-Deal (2013), despite this being the case, there has been limited academic research into this area.

There are several designer/makers who have made practice-centred approaches to making emotional and sentimental jewellery but among them, only three have done academic studies that have direct relevance to this research: Jayne Wallace's *Emotionally charged: A practice-centred enquiry of digital jewellery and personal emotional significance* (2007); Bharti Parmar's *A Grammar of Sentiment: thinking about sentimental jewellery towards making new art about love and loss* (2008); and Petra Ahde-Deal's *Women and Jewellery: a social approach to Wearing and Possessing Jewellery* (2013). Between them, these PhD researchers have developed an understanding about the field of emotional jewellery by offering historical examples on how emotion is formed between jewellery, the wearer and the maker, and demonstrating works that enlighten the role of the maker, wearer and viewer in the design of emotional jewellery. An investigation of how these three academic researchers have approached emotion in the context of jewellery in the earlier part of the review is important before discussing other practical examples of such jewellery, since these researchers have established a foundation for understanding how emotion is engendered in jewellery by each piece of research proposing a different approach.

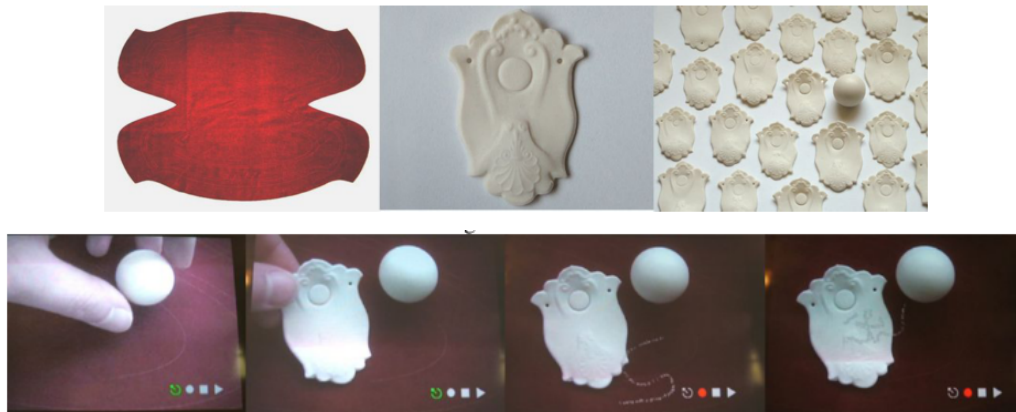


Fig 1-7. Jayne Wallace *Traces*: Piece made for Emma 2007

Jayne Wallace's (2007) research focused on the individual's personal biography and the aspects of their experiences that were emotional to them, in order to make the jewellery emotionally significant. Her idea of emotional jewellery was about "charging individual emotion" into the jewellery before it is passed onto the wearer, and by applying interaction design methods and making personally significant jewellery that would match the wearer. In the practical pieces that were individually made for each of the three participants, Wallace reflected on each participant's personal criteria to generate emotional significance. For example, a piece of velvet fabric and polished porcelain was used in the work of *Traces*:



*Piece made for Emma*, (Fig 1-7) which reflect the participant Emma's responses about "home-centred" and "comfort". These materials also responded to Emma's comments in the fairytale stimulus about the touch of her daughter's skin by echoing the tactility of flesh in the material.

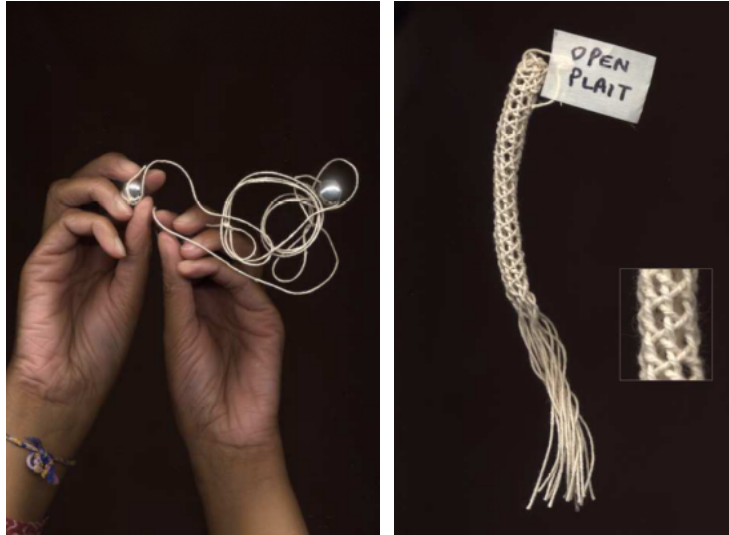


Fig 8. Bharti Parmar, *Plocacosmos*, *Hairworking trial: 'gauche'* 2008  
 Fig 9. Bharti Parmar, *Plocacosmos*, *Hairworking trial: 'open plait'* 2008

In distinct from Wallace's approach to making emotional attachment, Bharti Parmar (2008) focused on the role of the makers in her practice-led research. She made four bodies of work to articulate her response to the project's central question: "can consideration of the 'grammar of sentiment' at work in Victorian sentimental jewellery yield new possibilities, through fine art practice, for communicating love and loss in the 21st century?" In the work of her hair jewellery (Fig 8 & 9), she attempted to recreate the physical and emotional experience of making hair-worked artefacts: "how their construction speaks of their making; how their making can be a 'labour of love'; and how the maker can be 'lost' in a craft activity by involving herself physically with the body of the other as well as with the act of remembrance that braiding entailed." (Parmar, 2008, p.196) Parmar's research focused on the role of the maker and the making, instead of the wearer and the wearing in its approach to the term emotional jewellery.

Petra Ahde-Deal's (2013) analysis of emotional jewellery is also distinctive from the other two researchers. Her approach to emotional attachment focused on the wearers and their social practice in making the emotional attachment. In the research, where Ahde-Deal shares her interpretation of discussions about the reasons why pieces of jewellery become such long-lasting objects in women's lives; she makes assertions that pieces of jewellery do not carry meanings and that it is the social setting around the jewellery and the wearers that

create personal meanings for the jewellery; since they are linked to the most important milestones in life, and to the most significant human relationships.

It is significant to compare how these researchers not only employ different approaches towards emotional jewellery but also possess contrasting understanding about it. Yet it is also important to draw attention to those common aspects that they all share. The piece of velvet fabric in Wallace's jewellery, the hair working of Parmar's jewellery and the social practices of Ahde-Deal's jewellery may seem very distinctive, but they are similar, in that they are all based on emotional experience. Whether the emotional experience is embedded in the physical materiality of jewellery, or the labour of making jewellery or the social practice that is imperceivable it is their stories that make the jewellery include a "cherish-able" quality.

An explanation of such diverse approaches to emotional and sentimental jewellery is continued in the following sections by placing them within historical and contemporary contexts. The examples of historical and contemporary jewellery works are extracted from what is categorised or designated as emotional or sentimental jewellery; and further examples of contemporary jewellery have been selected based on emotionally durable design theories, which may not be designed as emotional or sentimental jewellery.

## 2.2.1 Historical context

The examples of jewellery concerning emotion within historical context are referred to as sentimental jewellery, because it is situated within the time frame of Victorian remembrance, where a long period of mourning was considered necessary during Victoria's reign. Therefore, this section exemplifies the sentimental jewellery of this era, which they refer to also as mourning jewellery; alongside other sentimental jewellery within this historical context.

According to Luthi (1998), in the Victorian era, many related jewellery to death and grief, this jewellery being labelled as not only sentimental jewellery but also mourning jewellery. Due to the popularity of mourning jewellery in the reign of Queen Victoria, a wide range of this jewellery, for example hair jewellery and memento mori objects, were developed, and these can be categorised as sentimental jewellery, since they involve long-term grief and yearning.



Fig 10. *Tablework Hairwork Bracelet*, Worn by Mary Catherine McCool Foster, brown hair, c. 1850.

Hair jewellery (Fig 10) worn by Mary Catherine Foster (1831–1909) is an example that illustrates the type of hairwork jewellery popularised during the mid-nineteenth century. According to Ledezma (2012), hair jewellery was perceived as a synecdoche for the whole body and provided people with a precious memento of their beloved. The experience of wearing the jewellery hinges around the relationship between the wearer and the loved ones, and provides a tactile experience whilst ensuring a lucid memory of an absent loved one by remaining physically and emotionally present through the materiality of hair. Such use of hair is what Ledezma (2012) refers to as a tactile experience that heightens the possibility of recollection of the loved one through the sensory engagement of touch.

Another reference within the historical context of jewellery is power jewellery or spiritual object. These can also be categorised as sentimental jewellery since they are also concerned with repetitive and precipitated belief, as can be seen in jewellery such as prayer beads, and rosaries. These are considered deeply meaningful to the wearer because they are physical expressions of profound understanding and beliefs, and “have religious, magical, or talismanic associations, and can serve as reminders or touchstones for our most deeply felt yearnings.” (Walker, 2006a, p.22) According to Walker, prayer beads have a very powerful sense of personal “possession-ness”<sup>1</sup>, through the wearer carrying out a repetitive activity whilst praying or meditating, being regarded as a lucky charm. Prayer beads, which are usually made with wood, slowly wear out their surface and heighten the wearers’ emotional attachment by suggesting the religious and meaningful interaction made between the jewellery and its wearer. In the case of amulets or charms, which are used to “protect and to harm, and in both the practice and avoidance of witchcraft and sorcery” (Varner, 2004, p.58), the possessor’s personal meanings are invested in the objects since they are believed to take on the role of protecting and bringing good luck. The wearer’s

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<sup>1</sup> Walker (2006b) has used this term to refer to an object that one tends to really ‘own’ in a very intimate way. (Walker 2012)

emotional attachment to this jewellery grows as these jewellery pieces prove their power or through the interaction with magical spells such as charms being sung or chanted. There is a tendency that people feel anxious when they are apart from these jewellery objects and such feelings arise when an emotional bond has been formed between the object and its possessor.

Another example of historical sentimental jewellery is the traditional bead-work of the Zulu tribe, which is used as a medium of communication and an expression of feelings. Historically, people have given and received sentimental jewellery to share and express feelings and emotions, and to evoke memories. According to an article by C.B.S Xulu (2002), such necklaces have been used to express a young girl's feelings for a boy, and act like a love letter since they make it themselves. It is the social practice of giving and receiving the jewellery, and also the emotion invested in the jewellery while making, which offers the jewellery an emotional value.

## 2.2.2 Contemporary jewellery

In the field of contemporary jewellery, many artists have approached the field of emotional and sentimental jewellery, and the interest towards making them have been more dominant during the last 10 years.

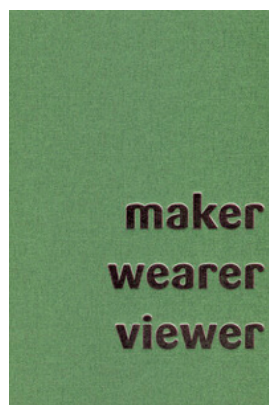


Fig 11. Catalogue of the exhibition, *Maker, Wearer, Viewer* 2005



Fig 12. David Bielander, *PearlSnail* 2004

An early start of this can be said to be the exhibition *Maker, Wearer, Viewer* (Fig 11): curated by Jack Cunningham in 2005. This exhibition was a symbolic exhibition that broke away from the convention of the maker being the only narrative of the work and deepened interests about the relationship between the maker, wearer and viewer. The exhibition illuminated the significance of the wearer and goes beyond the aesthetics of the jewellery or

the narrative of the maker, by exhibiting works such as *PearlSnail* (Fig12) by David Bielander. The striking form of Bielander's brooch is to "make conversation points; make it easy for people to talk to each other, to step over barriers and to throw away inhibitions." (Cunningham, 2005, p.20)

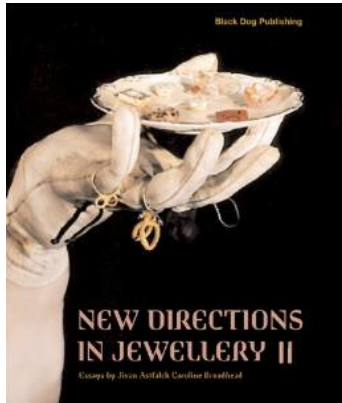


Fig 13. Book *New Directions in Jewellery II* 2006



Fig 14. Catalogue of the exhibition *Unexpected Pleasures* 2012



Fig 15. Video clip made by Susan Cohn in the exhibition of *Unexpected Pleasures* 2012

The shift of interest towards the role of the wearer in the jewellery is also evidenced in the second volume of the book: *New Directions in Jewellery II* (Cheung, Clarke and Clarke, 2006) (Fig 13), which was one of the significant books of that year in the context of contemporary jewellery. The essays and examples of jewellery work that are mostly based in European countries, which have been referenced in the book, signify the importance of the jewellery's life after leaving the hands of the maker and also how much the maker can take part in making meaning in the work.

A recent exhibition that reflects interest toward the role of the wearer can be seen in the exhibition of *Unexpected Pleasures* (Cohn, 2012/13) (Fig 14) that was curated by Susan Cohn in 2012, which exemplifies the Western perspective of contemporary jewellery. This large-scale exhibition organised by the Design Museum in London explored aspects including the degree to which contemporary jewellery artists have considered the role of wearers in their jewellery and also the emotional relationship that may be gained through the design and interaction of jewellery. A considerable number of the jewellery objects in the exhibition concerned the relationship that jewellery has with wearers through the creation of a separate section entitled "Worn out". The exhibition gave great weight to this by exhibiting a large video clip (Fig 15) that depicted people wearing the jewellery from the exhibition. These aspects of the exhibition address the role of the wearer in jewellery and the significance of it within the contemporary context of jewellery.

The key contemporary jewellery practitioners identified as considering the role of the wearer in regards to emotion and sentiment are Lin Cheung, Laura Potter and Mah Rana. Compared to the academic researchers referenced in Chapter 2.1, these designer/makers are more focused on research into materialisation within their jewellery practice.



Fig 16. Lin Cheung, *Wear again, again* 2013

Fig 17. Lin Cheung, *Siblings* 2003

Fig 18. Lin Cheung, *Hidden Value* 2006

Lin Cheung has worked closely on making jewellery in relation to emotion and sentiment; and has found new emotional and literal spaces for old jewellery that seems to have lost its value. In a collection of her brooches entitled *Wear again, again* (Fig 16), which was exhibited in Aram gallery 2013, she has re-valued “old, broken, odd, unfashionable and unwanted jewellery” (Cheung, 2012/13, p.8) by reworking jewellery bought from Argos during her teenage life. She has relocated the Argos pieces, which were part of her hoard but never worn, into a subversive context by being reformed as contemporary jewellery. The meaning of these pieces has changed to represent historical markers of her adolescent life, whilst their form remains unaltered. Prior to this piece, Cheung has made similar jewellery titled *Siblings* (Fig 17), which she also reworked from old jewellery. These are constructed from broken jewellery that her brothers and sisters had given her over the years to repair or remake. She has brought reminiscence about childhood memories by maintaining the form that characterises each family member in the joined chains that are



broken, knotted, tarnished and outdated. The works of Cheung in regards to emotion, go beyond the relationship of just jewellery and its wearer. And this can be seen in the work of *Hidden value* (Fig 18): a necklace that consists of many lockets, where she plays upon shared perceptions of sentimental value in jewellery by bringing in the role of the viewer as well. She questions whether the preciousness is in the meaning of the locket itself: believing that it should be valued, whether it is full or empty. (Cheung, Clarke and Clarke, 2006) It is a distinctive work where she has brought a different standpoint on the concept of emotion through bringing in both aspects of the wearer and the viewer.



Fig 19. Laura Potter, *My Life in a Sock Drawer* 2007  
 Fig 20. Flyer of *Treasure* exhibition 2002

Laura Potter has considered many approaches to making emotional and sentimental objects that are not specific to jewellery only. In her research project titled *My Life in a Sock Drawer* (Fig 19), funded by the AHRC in 2007, she has “focused on jewellery that was considered to have little financial or aesthetic worth, was never worn but had been identified as a treasured item.” (Hanson, 2011, p. 26) It looks at the storage of this jewellery and “traces the relationship between unworn jewellery and identity, and the means by which women use jewellery to access and evidence their life experiences.” (Potter, 2007, p.1) For this research, a series of ‘containers’ were produced, that provide new insights into the psychology of storage. As can be seen in the figure above, it is a conceptual work, which is not restricted to the jewellery form and which examines people’s attachment to jewellery by viewing it in relation to where it is kept and how it may inform the identity of the possessor. Potter has also done a collaborative work and exhibition titled *Treasure: Contemporary Notions of Sentimentality in Jewellery* with Lin Cheung. According to her website (Potter, 2003) the project questioned the value of jewellery and focused on the wearer rather than the object and its maker. It debated the issue of how and why wearers value jewellery items by providing interactive experiences for the visitors in the exhibition. *Treasure* was an

exhibition of raw data and visitors contributed to the research by exchanging badges and completing an exploratory questionnaire.



Fig 21. Mah Rana, Images from *Meanings and Attachment* 2014

Mah Rana has undertaken a series of projects that explore emotional attachment under the title *Jewellery is Life*. In one of the key projects entitled *Meanings and attachment* (Fig 21), which has been going on for more than 10 years, she has explored the importance of jewellery for people. She has records of this on a website (Rana, 2002), where she has ongoing works with photographs of participants and their favourite piece of jewellery taken by the artist herself since 2002 and their written story behind the jewellery. In her recent exhibition that was held in Sweden, she invited people of different social classes, gender and age to comment on their jewellery in relation to memories, value and meaning. Through this work, Rana questions the decision making process of choosing and wearing jewellery and highlights the importance of owning, giving and wearing jewellery throughout our lives.

This research asserts that the three designer/makers who have been illustrated in this section, along with the three academic researchers Wallace, Parmar and Ahde-Deal (Chapter 2.1), are the central designer/makers who have researched in depth and/or offered practical approaches to the concept of emotion and sentiment within the boundary of jewellery, and who have made robust research and have been referred to in many of the writings and exhibitions related to the concept. All of their jewellery includes the meaning of emotional attachment in that it is about the feeling of the wearer or the possessor that exists towards the jewellery and it is also distinctive in where the focus is placed, whereas this research focuses on the physical transformational element of the jewellery. The boundary of research was focused on European and UK based practitioners and little upon Korean based practitioners, from where I originate. This was because this research was conducted within Europe and it was not an objective to make comparisons between the two countries or to find their particular characteristics.



The following section exemplifies the works of other designer/makers of contemporary jewellery who have made approaches to the concept of emotion and sentiment; and others who may not necessarily be related but have found a connection based upon my understanding of emotional and sentimental jewellery. They are presented into three categories of: History and memory; Interaction; and Alteration and creativity, which have been analysed as significant characteristics of making emotional and sentimental jewellery from the review of emotionally durable design research.

## History and memory

One of the approaches towards making a piece of emotional jewellery is to embody wearers' memory within the making process of the jewellery or to make jewellery that has the potential to collect their emotional experience. It is considered that humans feel emotionally attached to those objects which embody their personal history, or that can recall their past experiences. Contemporary jewellery designer/makers have made diverse attempts to making emotional jewellery by containing within it "powerful memory cues" (Chapman, 2005, p.181) or that "function as our external memories" (Design and Emotion Society, conference theme 2004). In order to fulfill this, they have either used materials that precedently consist of meaning or they have set up a system to capture or record the emotional experience.



Fig 22. Melanie Bilenker, *Braid* 2006

Fig 23. Melanie Bilenker, *A Day For a Bath* 2005

Physical material is an adequate element that can embody memory and arouse the emotional response of the wearer and viewer in jewellery. The work of Melanie Bilenker's jewellery (Fig 22 & 23) which evokes Victorian hair jewellery is an example of such use of materials to engender the emotional response of the wearer. She has advanced the traditional values and concepts of hair jewellery into a contemporary context through her

construction of line portraits of loved ones or everyday moments using human hair. These pieces encapsulate emotional memories and function as an aide-memoire for “era, places and people” (Cheung, Clarke and Clarke, 2005, p.151) in her jewellery. Bilenker states that she sees hair as proof of existence - a souvenir, and looks for ways to conjure a sense of home for the viewer by referring to both her subject matter and the medium of hair. (Siennapatti, n.d.)



Fig 24. Mike Guy and Rebecca de Quin, *Wedding rings and necklace* 2006

In a similar way to Cheung (Fig 17), Rebecca de Quin and Mike Guy also used pre-owned objects to convey meaning in their jewellery. They melted down gold watches and other precious objects inherited from their families, to cast their own wedding rings (Fig 24). Although the family gold has been re-interpreted in another form, an emotional value still exists in the jewellery and takes on further meaning by becoming an object that signifies an emotional experience of the marriage.

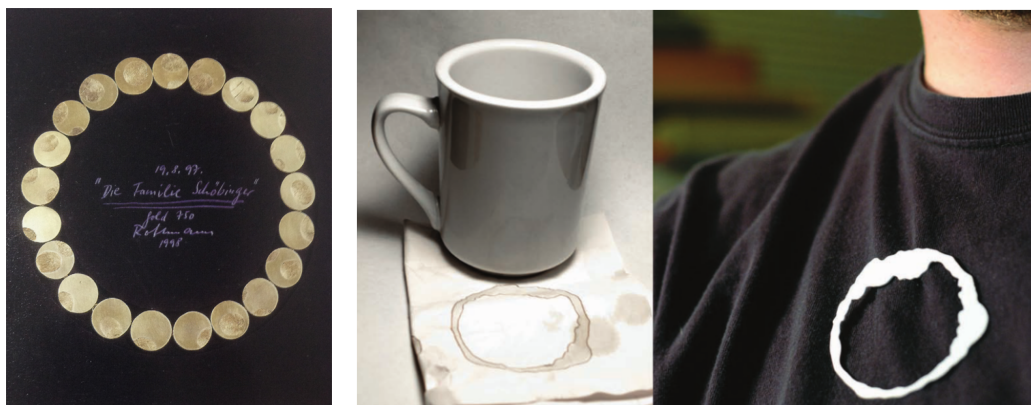


Fig 25. Gerd Rothman, *Family Necklace (for the Schöbinger family)*

Fig 26-27. Arthur Hash, *Brooch*

Embedding emotional experience into a material or form can also be done artificially in the design and making process. In the jewellery piece *Family Necklace* (Fig 25), commissioned by the Schöbinger family, Gerd Rothmann has casted fingerprints of the family members onto small, gold discs. Meanings have been “constructed” in the material or form by visualising the family’s fingerprints that increase the wearer’s intimacy towards the

jewellery. Similar to this, in Arthur Hash's *Brooch* (Fig 26-27), he has visualised a specific event of his life by transforming a coffee stain of a napkin into a sculptural object. Whether the stain has been created from an ordinary coffee time he had or one from a special occasion, his jewellery can be seen to embed a sentimental value by being a tangible object of experience.



Fig 28. Dinie Besems, *Tear Ring*  
Fig 29. Kai Eckoldt and Tobias Ende, *Brooch*

Jewellery can also intentionally be made to collect emotional experiences and prompt an emotional engagement with the wearer. It is similar to the term 'jewellery-to-be' (Cheung, Clarke and Clarke, 2006) where the role of the object is predefined and inevitable, but has the potential to become meaningfully connected to someone in order to complete its official status as full jewellery. An example of jewellery that performs this can be seen in the work of Dini Besems' *Tear Ring* (Fig 28). It is a simple piece of ring that embodies meaning when a single teardrop is filled in the round-shaped section of the piece and makes a provisional gemstone from it. Such investing of sentimental value in the jewellery by the wearer can also be seen in Kai Eckoldt and Tobias Ende's *Brooch* (Fig 29). According to an article by Desmet and Hassenzahl (2012), it is a jewellery object that detects sharp, high-pitched sound of people chinking glasses, and then responds by triggering a thirty second long audio-visual recording and stores it within the *Brooch's* internal memory. The soft sound and the video can be played back from time to time through a gap running around the jewellery's edge. As with a piece of photography to which we feel attached, this jewellery has significant potential in becoming a cherished object with the ability to store and play back the happy times.



Fig 30-31. Siren Elise Wilhelmsen, *365 Knitting Clock*  
 Fig 32-33. Thorunn Arnadottir, *Clock*

In the works of Siren Elise Wilhelmsen and Thorunn Arnadottir, the element of “clock” has been used to record the user’s emotional experience. They both employ a similar concept with the use of a symbolic object clock to make a tangible form that acquires memory and emotional value. Wilhelmsen’s clock knits 24 hours a day and produces a 2 metre long scarf every year to show a physical representation of time (Fig 30-31). It does not record a specific experience like Besems’ (Fig 28) or Eckoldt and Tobias Ende’s (Fig 29) jewellery, however it brings forth the experience of visualising time through the process of knitting and pulls out a tangible form of time in the knitted scarf that has a personal meaning. The long scarf represents a year long journey of the possessor and a record of their past life. Similar to this, Arnadottir’s clock (Fig 32-33) adds meaning to a string of coloured beads by turning it in the electric cogwheel and using the concept of time. Each bead represent five minutes, orange and red the hour points, gold for midday and silver for midnight. It does not physically acquire time to produce an output, like Wilhelmsen’s clock, it collects lengthy hours of the owner’s time by visualising the revolving of necklace in the wheel and so adds emotional value.

## Interaction and experience

The relationship between the object and the user may be deepened when an interaction and a meaningful experience takes place. Whether the interaction is limited to the functioning of an object, or an emotional value is invested by the user through their bodily experiences with the object: the amount of emotion invested in the object may be classified in terms of the intensity of experience. Yet powerful or intense experiences do not always lead to a strong relationship between the object and the user. According to Chapman (2005), it is the subtle and more ephemeral user experiences, which have more potential in making stronger relationships.

“Intense user experiences, such as those gained from igniting a firework, or achieving 0 to 100 kilometres per hour in less than four seconds, for example, are indeed powerful; yet they are fleeting and are seldom revisited by users. In contrast to this, subtle and more ephemeral user experiences, such as those gained from gently refilling a fountain pen with ink, or perhaps re-honing the blade of a sushi knife on a well-worn whet stone, will be revisited time and time again, as with each visit the experience grows and evolves a little further. Therefore, measuring experiences in terms of their apparent intensity is unhelpful as it fails to designate the long-term efficacy – and potential durability – of the experience itself. In addition, it is worth noting that many, perhaps the majority of, user experiences are never even consciously realized; they are perceived only within deeper levels of mental processing, which forge through time meaningful associations with a given product, material or experience. Insignificant as they may at first seem, these subconscious experiences may be the most potent and influential of all. They establish strong and durable connections within users, on both rational and emotional levels.” (Chapman, 2005, p.83-84)



Fig 34. Dick van Hoff, *Tyranny of the plug*

A good example that supports Chapman's argument/assertions can be seen in Dick van Hoff's project *Tyranny of the Plug* (Fig 34). It is a kitchen machine, blender, mixer, and lemon squeezer that does away with electricity and returns to the manual method of



preparing food. Compared to modern technology with machines that only need the press of a button, this object requires a high interaction between the object and user to blend, mix or squeeze. In doing so, the object moves beyond form and function; and integrates an emotional experience that becomes meaningful for the user and to close the gap between the object and its user.

When an interaction is not based on the object's original function and is intended to be carried out deliberately, it becomes fleeting and slowly loses the user's interest because it may seem as an excessive interaction. However, when the interaction exists based on the obligatory function of the object and without a certain intention, similar to the interaction seen in *Tyranny of the Plug*, the interaction itself may become an emotional experience.



Fig 35. Miriam Verbeek, *Wear-off Ring* 1993



Fig 36. Friedrich Becker, *Ring*

In the mourning rings of Miriam Verbeek (Fig 35), interaction has been constructed so that the silk crochet of the ring unravels as it is worn on the fingers. The black silk crochet progressively reveals the silver rings beneath to assist the mourning period of loss, as the number and time of wearing increases, and without particular force or action. Another example of such an interaction can be seen in the kinetic jewellery created by Friedrich Becker (Fig 36). His works are constantly in motion in response to the wearer's bodily movement. There are both subtle and continuous changes and movements made in respect to their use, which may enhance the emotional relationship between this jewellery and its wearers. Such jewellery is similar to "a responsive object" (Hoinkis, 2012), which refers to a kinetic object that provides an emotional experience. It is a "responsive, cherishable object that facilitates sensual experiences and invites people to explore and interact." (Hoinkis, 2012)



Fig 37. Manon van Kouswijk, *No Title - 'Soap'* 2005

Fig 38. Suzi Tibbetts, *Crown Jewels: Diamond Necklace* 2006

Another approach to creating interactions, in order to evoke emotional attachment in the jewellery, can be seen in Manon van Kouswijk's and Suzi Tibbetts' necklace. This is a slightly different manner of interaction in that it is an interaction that takes place before use and is a precondition to being used. In the work of Kouswijk (Fig 37), the jewellery is hidden inside a bar of transparent soap and every time the soap is used, a string of pearls is gradually revealed, ready to be worn. A conceptual relationship between the idea of having to use water to get to the necklace and having to dive through water to gather the pearls may be formed through such interaction. In Suzi Tibbetts' *Crown Jewels: Diamond Necklace* (Fig 38), a silver chain is kept inside a recycled cider bottle, which needs to be opened in order for the necklace to be worn. It is a momentary experience when compared to Kouswijk's necklace, but Tibbett's work takes the experience further by embodying it in the form of the jewellery through the use of the bottle cap as a pendant to the necklace. The precondition and pre-interaction, which takes place before using the jewellery, may enhance the emotional relationship between the jewellery and its wearer by constructing the emotional experience of acquiring the jewellery.

## Alteration and creativity

Contemporary jewellery, which leaves space for the wearer for alteration and personalisation, is another approach to adding emotional value. Emotional investment is thus created by designing interactions with the jewellery before it is worn on the body and by applying the user's own creativity and labour. It is similar to the "halfway products" (Fuad-luke, 2009), in which the user embeds their own creativity, stories and mistakes in the process of finishing the product, thereby cementing a personal narrative, memory and

associations that differentiate this product from others manufactured at the same time. Embodying the wearer's creativity to the jewellery constructs emotional value because of alterity, (which refers to the characteristics of an object that can be physically transformed through the user's interaction) is experienced by users as a feeling that something is both autonomous and is in possession of its own free will; when objects embody this eccentric quality, the relationships forged between subject and object are frequently strong and long lasting. (Chapman, 2005, p.74) A deeper understanding of gaining emotional value through such creativity and labour can be examined in the work by Norton, Mochon and Ariely (2012), *The "IKEA Effect": When Labor Leads to Love*. Here, he describes aspects of making value in self-made objects, and into which people have put effort, by referencing IKEA, one of the well-known brands for valuing the user's labour in completing the product and defining this cherishable value as the "IKEA effect".



Fig 39. Kim Buck, *Figures* 1997

An approach to this concept in the field of contemporary jewellery can be seen in the work of Kim Buck titled, *Figures* (Fig 39). In this work, he has made various separate parts of the jewellery, which need to be assembled by the wearer to be complete and to be worn. The wearers must decide how they wish to combine a set of jewellery that has five different figures made of silver, and a cord in a wooden box. An emotional value may be attained in such jewellery, since the wearer imbues a significance that is beyond the intention of the one who made it and which offers the wearer the opportunity to personalise the jewellery, through the act of assembling the pieces.



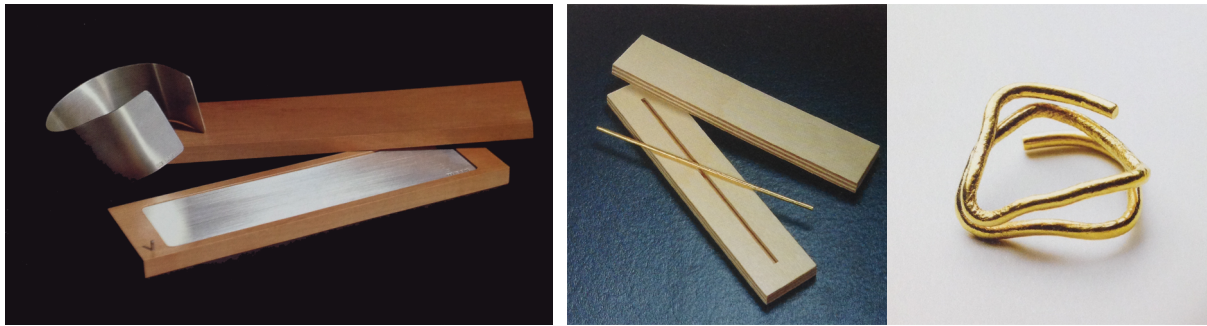


Fig 40. Rolf Sachs, *Strip Bracelet*  
Fig 41-42. Kim Buck, *Gold Ring* 1998

The work of Rolf Sash's *Strip Bracelet* (Fig 40) and Kim Buck's *Gold Ring* (Fig 41-42) have a very similar concept of using the wearer's labour in the role of making. A piece of material, which appears to have just been cut out from the factory, is given to the wearer in a wooden box. The form of both the bracelet and the ring is entirely defined upon the physical force of the wearer, therefore making each one unique and autonomous. It can be said that significant emotional attachment is built through the wearer's actions and through the display of their creativity whilst wearing it.



Fig 43-44. Ted Noten, *Chew Your Own Brooch*

Another example, which requires the wearer's physical labour and creativity, is Ted Noten's *Chew Your Own Brooch* (Fig 43-44). People, who buy his jewellery, receive a piece of wrapped chewing gum with a return box. They then need to chew the gum into a form and put it into the box to send it to the artist, so that he can cast the form into silver, mount it on a pin and return it to the wearer. Similar to the jewellery of Sashes and Buck, Noten's jewellery also involves the active participation of the wearer in the making of the jewellery; and the wearer is not only taking part in the making, but also in the decision of its form. This can be perceived as a factor that can heighten the relationship between the jewellery and its wearer with this autonomous element. Nevertheless, neither the greater alteration of the piece nor the participation of the wearer, always correspond to a greater emotional relationship, in the same way that powerful or intense experiences do not always lead to a

strong relationship between object and the user (as stated in the previous section p.30). Emotions felt towards an object are complicated human feelings that cannot be calculated. Therefore, it is difficult to establish one single answer as to how such transformational characteristics of object effects emotional attachment, because there are innumerable human characteristics that cannot be generalised into a single person.

## 2.3 Transformation

This section defines and examines the characteristics of transformation in regard to its affect on emotional attachment. It offers a more specific definition to the term transformation and its characteristics - as the beginning of a journey towards finding the characteristics of transformation that can engender emotional attachment, this being one of the main aims of this research. The characteristics have been determined by analysing the transformational jewellery and other examples of transformational objects that have been asserted as “emotionally durable” in the research of emotionally durable design. (Arguin, 2009/2010; Chapman, 2005; Hinte, 1997; Verbeek, 2005; Walker, 2006a, 2006b, 2010, 2011) Much reference has been made to the research of emotional durable design such as “Growing together”, “Alterity”, or “Old and new”, where they argue that static objects alienate users through lack of togetherness because people are anything but static and exist within a restless state of continual adaptation and growth.

Based upon these reviews and in addition to the initial definition given in the introduction, the term transformation is defined as follows:

The term transformation is a visible physical change that is deliberately constructed in the object by the maker in order to engender the emotional attachment of its user. It is a subtle and slow change and not a dramatic change in shape, which has been enacted by the user and is conceived of as ageing-well through use and traces of use through the passing of time. Such transformation imbues life into objects by the characteristic of having incremental growth as can be seen in plants and to fulfill what Chapman explained as “mutual evolution and growth” (Chapman, 2005, p.69) with the user. Furthermore, the characteristics of transformation embody aspects of positive aesthetics by using material properties, as this research claims that positive transformation in materials can engender positive emotions of emotional attachment and is supported by the research undertaken by Saito (2010).

This section offers in-depth explanations about such characteristics of transformation and how they can be applied in objects to engender emotional attachment with the user by giving relevant examples. It consists of two sections: one, which explains the characteristics of subtle and slow transformation under the heading “Traces of use over time” and the second, which explains the characteristics of positive transformation under the heading “Positive transformation”. The third section offers examples of transformational jewellery that fit into

these characteristics of transformation and that demonstrate how such transformation is constructed within jewellery.

### 2.3.1 Traces of use over time

The slow and subtle change that has been determined as an important characteristic of transformation is similar to what cognitive scientist Donald A. Norman calls “just noticeable difference” or “JND”. Norman defines JND as “the amount that something must be changed for the difference to be noticeable, defined to mean that the change is detectable half the time.” (Norman, n.d) It only advances in micro-steps that are not perceivable in real-time, similar to the wearing away of jeans, rust on a steel fence, or the chipping away of paint on a grandmother’s walking stick.

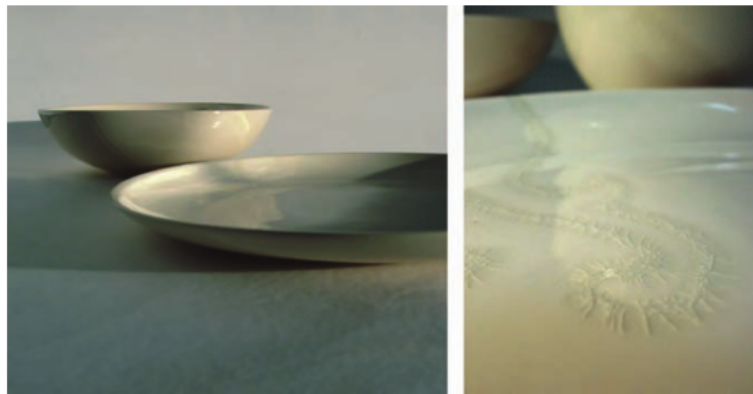


Fig 45-46. Simon Heijdens, *Broken White* 2004

This is similar to the transformation constructed in a set of ceramic plates made by Simon Heijdens (Fig 45-46), where small crack lines appear on their white and undecorated surfaces as they are used. It is deliberately constructed by the maker to form floral decorations on the plate. According to his text (Heijdens, 2004), the transformation on the work reflects the growth of a child or a flower and makes connections to the user by being less static, more open to the specific factors of our personal surrounding.

Time is an important factor in the characteristics of transformation, as the transformation appearing on an object is the physical evidence of time and can be referred to as traces of time passed. Therefore, objects that evolve slowly over time gain quality and build up layers of narrative by reflecting traces of the user, which can accordingly engender a closer relationship with its user.



Fig 47. Front Design, *Tensa floor*

An example that explain the importance of time in the transformation can be seen in an art project carried out by a Swedish design agency Front (Fig 47). It is a vast project, which is intended to create an environment of the Tensta Konstall, a centre for contemporary art, and that changes in time and interaction with the visitors. Through a long period of time users, or the visitors who walk on it, contribute to the design of patterns by wearing away the grey floor and revealing the golden floor underneath. It is designed so that visitors form a unique pattern on the floor and reveal those parts that have been most frequently walked over by the visitors.

According to Chapman, such smooth and seamless changes in an object have qualities that elicit emotional attachment by giving a sense of mutual growth with its user. He states that:

...if a storyteller were to continually switch stories every few lines, we would surely become lost and, consequently, experience alienation. If however, the story is incrementally developed and grown, we engage passionately with it. Steadily unfolding narratives map the particular development of human-object relationships, thus closing the gap between self and other to create a unified experience. (Chapman, 2005, p. 128)

The term “unified experience” is an important term to consider in this quotation, as it illustrates that in order for the transformational object to engender emotional attachment, the change needs to be enacted by the user to make a shared experience. Chapman also mentions that the relationship, between the object and the user naturally intensifies as the users of such object are designed into the narratives of the object as co-producers and not simply as inert, passive witnesses of the change. With this understanding, this research asserts that an emotional attachment can be engendered when the user takes part in, or enacts, the transformation of the object.



Fig 48. Bethan Laura Wood, images of *Stain teacup*

The work *Stain teacup* (Fig 48) made by Bethan Laura Wood provides a useful example on the significance of the user's role in taking part in the transformation of the object. It is a set of teacups that is designed to enrich the relationship between the object and the user through the user's act of "drinking". Wood reinterprets the common assumption of how use creates damage to an object and then transforms the object, by applying the materiality of ceramics. These teacups are treated in such a way to acquire tea stains through repetitive use and to reveal hidden patterns on its interior surface. The users work as co-producer of the change in the transformational object by reflecting upon their way of drinking tea, which can arouse a more intimate feeling towards it than being isolated from the change.

### 2.3.2 Positive transformation and materials

Aesthetics and materials are aspects that need to be considered in making positive emotional attachment. According to Saito (2010), transformations that happen over a length of time can have a negative effect on the appearance of the object, because objects with these transformations are considered to be "past their prime" and hold negative aesthetics for the viewer.

Therefore, in order to engender an user's emotional attachment, the transformation needs to find a way to move away from what Saito refers to as negative aesthetic transformation of "age, decay, decline, deteriorate, wane, decompose, get old" and towards the portrayal of a positive aesthetic transformation of "mature, ripen, develop, mellow, season". This research asserts that positive aesthetic transformation is more effective in making the positive emotions of emotional attachment and therefore, it is important to find a way to manoeuvre the negative effect of transformation to portray positive aesthetics. This is because according to Saito (2010), people are in favour of youth and the optimal state of objects that have no blemishes and signs of age, especially in the modern day when ageing is regarded as negative aesthetics and because modern man desires newer, shinier things

due to this preference that we have for youthfulness or looking young. He also offers examples of such negative aspects of transformation that embody time, by describing the efforts of people undergoing the surgeon's knife, laser beam or using hair dye to attempt to appear younger, and that these are not restricted to human beings but also to their surrounding objects as well, as is witnessed by the efforts made to "repair" and "restore" deteriorating or broken objects.

It is important to find positive affirmations in objects that age, and to find ways to highlight these transformations, rather than finding a way for them to appear younger, because positive aesthetic qualities of ageing is attainable by studying the eighteenth-century British picturesque movement. William Gilpin (1792), one of the foremost advocates of picturesque has brought attention to the qualities of disorder, ageing and neglect that have been induced in the appearance of the picturesque. He denigrated "all formalities of hedgerow trees and square divisions of property" as "disgusting in a high degree" and found value in irregularity, disorder, complexity, and roughness. (Cited by Saito, 2010) There is an acknowledgement to these kinds of transformations in objects as well. In the book *Eternally yours* (1997), a strong appreciation for the ageing object is made, by explaining that forever young objects lack the ability to gain quality over time, which makes them temporary friends that one cannot rely on. Chapman also acknowledges and supports this when he states:

"Beneath the silken skin of this mass-manufactured illusion, harsh contradictions dwell regarding the explicit nature of the newness that consumers actually desire. These are inconsistencies that, if addressed, might project us beyond this physical world of glossy surfaces and smooth lines toward a metaphysical interpretation of newness based on the evolution of use experiences, sensations and emotions as encountered through complex interactions with objects - enabling users to sculpt rich and individually crafted narratives that map subject-object relationships as they evolve over time." (Chapman, 2005, p. 111)

Adding to this text, he claims that an unstable and highly vulnerable relationship between object and user is made in the design of perfection, because the moment that fragile illusion of perfection falls under threat so does the relationship that is found upon it. There is scope for further research in such transformations that embody time and to make it into a desirable ageing, as Chapman (2005) suggests that creating appeal for the negative aspects of ageing, rather than hiding it, is a way to make desirable ageing, by explaining:

"Physical experiences that confidently flaunt the scars of age without apology or justification adopt a notable degree of integrity that enables them to grow old in a dignified manner. What may ordinarily be seen as flaws somehow serve the contrary - affirming the authenticity of an object's claims of age by subtly depicting a narrative to the particular nature of its life." (Chapman, 2005, p.133)



Fig 49-50. Ann Demeulemeester, *Carte Blanche Table*

An approach to switching the negative aspects of transformation into positive aesthetics can be further evidenced in a couch made by Sigrid Smit. In her blue velour furnishing, invisible, stitched patterns are revealed through use, as a way of renewing itself. According to Verbeek (2005) her work is a reinterpretation of the unattractive form of ageing and she has developed it into a positive aesthetics of what may be described as a form of “renew” (Verbeek, 2005, p.127). Such transformation can also be seen in a table (Fig 49-50) designed for a Belgian company Bulo by a fashion design Ann Demeulemeester (Carlson, 2009). It is a working table with a surface made out of unpainted canvas. The use of white unpainted canvas material in the work has been used as to question the fine line between the perceptions of what is dirty. Stains on the white canvas table can be understood as dirty to some people, but to others, it may be seen as art or a desirable form of transformation that adds quality to the work. According to Douglas (2002), the writer of *Purity and Danger*, something is designated as “dirty” when it is “out of place”, by referring to an example of shoes that are considered dirty, not because they are dirty in themselves, but because they are placed on a dining-table. Likewise, when dirt is stained in Demeulemeester’s table, it may be referred to as art, since it is placed on a white piece of canvas.



Fig 51. Chiyoko Tanaka, *Ochre No.300*



The textile work of Chiyoko Tanaka (Fig 51) is an example that has actively embodied what may be seen as negative transformation of time and shifted towards making positive aesthetics. A cone of yarn used in her work is dyed entirely so that the dye permeates the yarn resulting in a graduation of colour that acts as a visual indicator of time (Culturebase, 2003). She has also applied a process which she refers to as “grinding” on the textile with soils or charcoal to “grind out the surface texture”, to represent the passing of time.



Fig 52-54. Alessia Giardio, *Natural Footprint* 2010

Another aspect that can be investigated in the design of desirable transformation is to focus attention onto materials. There is a diverse palette of materials, from the ones that are built to last to the ones that have been developed to “age well”. An example of this can be seen in the material named Natural Footprint (Materia, 2010) (Fig 52-54), a concrete that combines photo catalytic cement with Laser-cut Plywood. The patterns of laser-cut wood, which have been embossed into the concrete, peel off and decompose in response to pollution and weathering, and so create a shadowy lace-like effect as they distort and bend, finally, falling off to leave a permanent trace on the concrete surface. This effect combines organic and inorganic materials to create textured surfaces that change over time, and highlights the “symbiotic relationships” between natural organisms, where one organism lives off another. This work offers potential in the use of materials to bring out positive aspects of transformation that embody time. It also suggests that there is a need for investigation into the various materials as such transformation is related to the material properties.

### 2.3.3 Transformational jewellery

The application of subtle transformations that affect through time and use has also been attempted by several designer/makers of contemporary jewellery. Similar to the transformation objects (Chapter 2.2.2), where the change is enacted by its function, the

transformation in these jewellery pieces is enacted by the function of *wear*. The bodily movement of the jewellery and the interaction of “wear”, which exist in between the wearer and the jewellery, enable transformation in the jewellery.



Fig 55-56. Dinie Besems, *Chalk chain* 1996

Such use of bodily movement can be seen in the work *Chalk Chain* (Fig 55-56) by Dinie Besems. It is a long piece of necklace carved from chalk and intended to leave traces on the clothing as the wearer moves. After the passing of time, the only remnant of the necklace is the thread that had held the chalk beads in the beginning. It is a transformational jewellery as the chalk beads become smaller through the passage of time and wear, but the concept of transformation of this jewellery is slightly different from the one of this research. Besems' work focuses more on the experience that takes place, making it more of an experiential jewellery or “ephemeral jewellery” (Manheim, 2009), while the transformational jewellery of this research emphasises the actual presence of the work. According to writing by Gert Staal on Besem's work, he asserts that it is the experience in Besems' work that makes true ownership of the piece rather than the property. He writes:

“No matter how paradoxical it may sound, the actual presence become less and less important; as vehicles, they have fulfilled their tasks once the link with the observer has been made. From then on, anyone may call him or herself the owner.” (Staal, 1998)

As can be analysed from Staal's writing, Besems' jewellery is distinctive from the transformational jewellery of this research in the fact that the transformation in her jewellery makes emphasis on the *experience*, whereas in this research, it is the *witnessing* of the transformation or the traces that engenders emotional attachment.

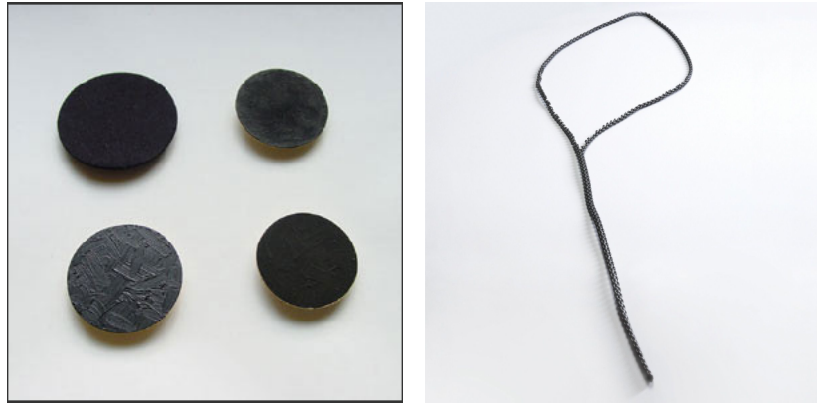


Fig 57. Mah Rana, *Out of the Dark* 2001/2  
 Fig 58. Ruudt Peters, *Sediment Necklace* 1995

A more related example to this research can be seen in the jewellery made by Mah Rana and Ruudt Peters. Rana's work *Out of the Dark* (Fig 57) is a series of brooches that has been blackened with burnt bone, soot and oil paint. As time evolves, the black textured surfaces of the brooches slowly wear off and reveal a gold material underneath. (Rana, 2004) The last brooch is covered in fabric and wearers are to remove it whenever it is appropriate to them. Instead of decaying or getting old, Rana's brooches brighten in time to signify a new stage and at the same time hold the memory of loss. In the work of Ruudt Peters' *Sediment Necklace* (Fig 58), a positive interpretation of decay has been made by the wearer gradually renewing the jewellery through the act of wearing. (Manheim, 2009) As a result of the interaction between the wearer and the jewellery, the black paint on the necklace surface slowly reveals silver that is underneath. In both of these pieces of jewellery, dematerialisation is used in making the transformation but it is about leaving a trace of the transformation that is used to engender an emotional response.

An element to be considered in the design of transformational jewellery is the consciousness of the wearer. For example, in Rana's series of brooches, the last piece which is covered in fabric is different from the rest by requiring deliberate act of the wearer when removing the black surface, whereas the others and the example of Peter's necklace are removed through the passage of time and use. As it can be seen in Rana's brooch, the conscious act of removing the fabric is done with the purpose of overcoming personal grief. Thus, there needs to be an intention when the transformation is affected through a conscious act of the wearer, otherwise, the jewellery will fail to make the transformation by losing the interest of the wearer.

## 2.4 Reflection on the review

Chapter 2 consists of the reviews on the jewellery and transformational objects in relation to emotion and sentiment. They are greatly dependent upon the design research of emotionally durable design (explained in Chapter 2.1) as they provide the understanding of the nature of object attachment and connecting the relationship between transformation and emotional attachment, as it also questions the characteristics of the object towards making emotional attachment with its user. Another reason for referring to this body of research is because it provides relevant examples that apply the theories of attachment into practical works. They have given examples of commonly seen objects around us, such as jeans or a teddy bear, which provide a clear understanding of the object attachment; and the examples of artefacts developed from the theory such as a work made by Sigrid Smits (explained in Chapter 2.3.2), which bridges the gap on how such theory is developed into practice work. However, there is a difference between this research and emotional durable design research, in that this research focuses only on the transformation within the boundary of jewellery discourse, and that the emotional durable design research focuses on making use of the attachment to prolong the lifespan of the products for a sustainable future.

The review of the contemporary jewellery discourse is made by selecting research and practices designated as emotional or sentimental jewellery by its author, but also based on the characteristics of the object attachment given by the emotionally durable design research. The categorising of the sections into “History and memory”; “Interaction”; and “Alteration and creativity” defines elements that the emotionally durable design research has pointed out as important in making emotional attachment.

The review of transformational objects is derived from the theories provided by the emotionally durable design of “Creator and creature” and “Leaving space for the user” (Chapman, 2005), and Van Hinte’s section on “Materials” and “Wear and care” (Van Hinte, 1997) and is based on this research question regarding the transformation about traces and time. Their theories assisted in selecting the transformational works from other research, by providing the knowledge about the nature of the relationship between transformation and emotional attachment.

This data, and the practical examples, first provide foundation to this research and secondly suggest directions for further research. Through the evidence provided by the artefacts, it is identified that the quality of the transformation has the potential to engender emotional

attachment by providing evidence in objects and artefacts; and that the explanation about the characteristics of “traces of use over time” in Chapter 2.3.1 provides answers to the second research question regarding traces and time in the transformation. A more specific characteristic of transformation is developed throughout the following research through the practical experiments and making processes that identify the roles of the maker and the wearer in the transformation; and the transformation that is pertinent to the jewellery discourse.

## Chapter 3.

Exploring transformation and emotional attachment in objects

This section explains an experiment conducted in order to explore the transformational characteristics of emotionally attached objects. The aim of this experiment is to explore the diverse ways in which transformational objects engender emotional attachment and to open up the wide range of possibilities that engender emotional attachment. The experiment identifies important characteristics of transformation that can engender emotional attachment by analysing such qualities in the participants' emotionally attached objects.

## 3.1 Method

This experiment focuses upon the use of qualitative data collection and analysis rather than quantitative methodologies. This experiment interprets Nordstrom's (2013) "object interview" and De Leon and Cohen's (2005) "object probe method" to understand the relationship between transformation and emotional attachment by discussing the interviewee's experiences with their own emotionally attached object that they possesses transformational qualities.

The "object interview" (Nordstrom, 2013) is a method where the sharing of objects takes place within a conversational interview and Nordstrom has investigated how "specters" haunt the object of family history genealogy work by using this method, as it allowed him to examine the genealogical work of a family, (which are the archive of documents, photographs, and artefacts that produce a record), and to interview the family members. The fundamental manner of using the method in this experiment is similar to how it is employed in Nordstrom's research (2013) in that the object takes up an important role in the interview, and that it considers objects and subjects (participants) as equally important in the production of knowledge. According to Nordstrom (2013), the "object interview" is a method that considers objects such as documents, photographs, and other artefacts as primary data sources, whereas other conventional qualitative methods, regard them as secondary data sources.

This experiment also refers to De Leon and Cohen's (2005) "object probe method", which uses artefacts beyond photographs, like keepsakes, awards, trophies, and collectibles, to help participants place their memories in an historical context in order to generate their verbal responses about certain events. This method is relevant for this experiment as the opportunity of experiencing and discussing the object may stimulate participants into providing significant data by bringing back memories of their own objects.

The fundamental concept of how these two methods use an object to produce knowledge is reflected in this research, however, the object used in this experiment is distinctive from the two, in the respect that it is produced particularly for the experiment and is not an object owned by the participant. The object of this research is intended to provide an insight into the interviewees understanding about the relationship between transformation and emotional attachment by offering a bodily experience of using and transforming the object. It is a



functional object that embodies transformational characteristics that have been gained from the review of the literature.

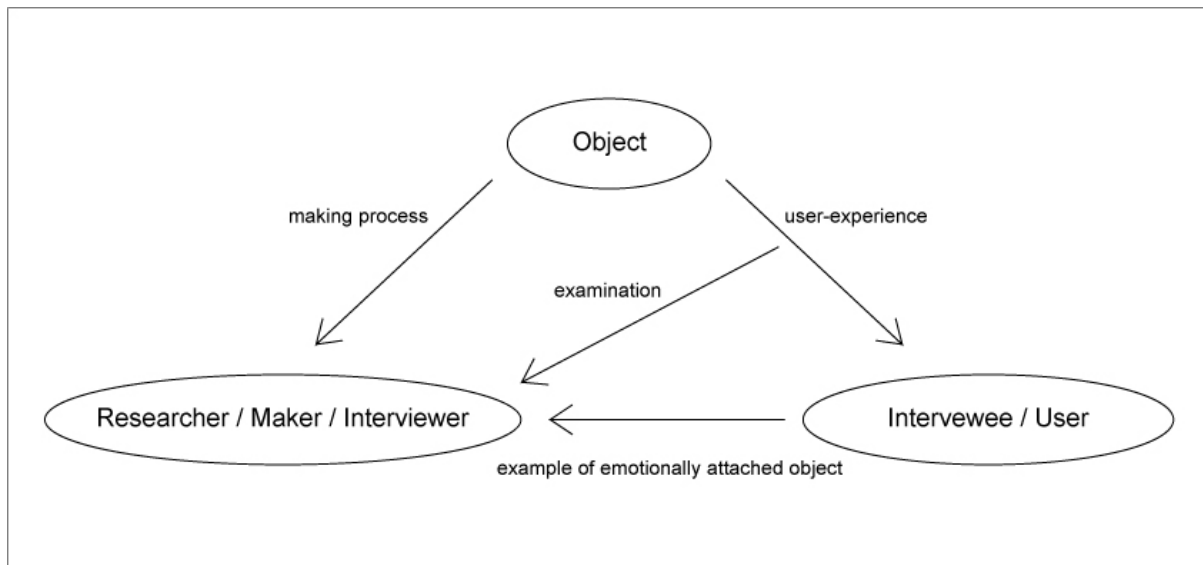


Fig 59. Visual explanation on the sources of knowledge

As illustrated in the above figure, this research and the researcher, (who is also the maker of the object and the interviewer of this experiment), gain knowledge from the three different sources by making use of the object in this experiment. The process of making provides one of the sources of knowledge. This making process is important in this research, as it produces experiential knowledge by materialising the theory of transformation and the emotional object. The experience allows a deeper understanding about their relationship by considering the object's materiality, function, size, interview setting and the user, which consequently assists in deepening the discussion with the interviewee. Another source of knowledge is the examination of the interviewee's experience with the object. Through the observation upon the interviewees' responses to the transformation; and by determining whether the object engenders the interviewees' emotional attachment, an understanding is gained about the relationship between the transformation and emotional attachment in a real-life situation. The last and the main source are the interviewees' responses. Their feedback about their emotionally attached objects provides information on those elements that make a closer relationship between object and user. Therefore, it is important that the object used in the interview gives information to the interviewee about the relationship between transformation and emotional attachment in order to act as a probe in the interview. This is similar to how De Leon and Cohen's probes place the participant's memory in an historical context, in that the object provides an experience of making an intimate relationship with an object by transforming it.

## 3.2 Interview

### Setting



Fig 60. Handwerk & Design Fair, Silver Sommer gallery - The Walking Table (exhibition)



Fig 61. Handwerk & Design Fair, Silver Sommer gallery - The Walking Table (experience table)

The interview was carried out at one of the biggest jewellery fairs in Europe - *Handwerk & Design*: an international craft & jewellery fair in Munich. One of the reasons for choosing this venue was because the venue offers great opportunities to meet jewellery lovers, collectors and museum curators from all over the world, who are involved in the jewellery field. Despite the fact that the interview questions do not require any particular understanding about jewellery, it can be prevised that many makers and people who have interest in these artefacts have the capability of doing an in-depth conversation about the topic of object-person relationship in the short period of time required than people who do not have the same level of interest. Another reason for the choice of venue is the large scale exhibition which provides the atmosphere to talk and share about their experiences with objects. According to a press release (Handwerk & Design, 2014) the *Handwerk & Design fair* is regarded as the most important exhibition of its kind, and each year it helps reinvent Munich as the focus and centre of the contemporary jewellery world. Therefore, the high quality artefacts populating the space create a natural setting to carry out profound discussions on object-person relationships. The venue also integrates well with the object interview method since the probing object that is used for this interview had the opportunity to be exhibited at the venue stand named *Silver Sommer Gallery – The Walking Table*. The stand was one of the exhibitions at the fair, which presented art works from 33 artists. The exhibition was organised in two parts; the first was a typical exhibition space where artefacts were displayed behind glass windows (Fig 60); and in the second, the artefacts

were placed on tables (Fig 61) and the viewers of the exhibition were invited to sit and have an experience at using them. This particular exhibition, therefore, created a suitable foundation to this experiment by offering a similar experience before undertaking the interview.

## Participants

The participants of the interview were random viewers of the exhibition who had shown an interest in the exhibiting objects. No special restriction on their gender, age or occupation was made, because the aim of the experiment is not focused on a specific body of people, rather it was focused on gathering data to develop a more general understanding of the relationship between people and the object. The interview was conducted with 10 people: 6 were makers of craft and/or jewellery, and the rest were designers, gallery owners and people who were frequent visitors to the fair.

## Probing object

As mentioned in the previous section, (Chapter 3.1), the role of the object is to provide an experience to the interviewees about the relationship between transformation and emotional attachment, in order to stimulate the participants to talk about their own objects that they feel to have similar qualities. The probing object is specifically crafted to be a conventional, functioning object for this experiment with the purpose of communicating the concept to the interviewees about the relationship between transformation and emotional attachment by providing them with an experience of using it. This object and the experience that it offers contribute to the interviewee's understanding about how a transformational object is able to effect emotional attachment, which is not easy to find the words for a verbal description. It is intended to be "made" by the author so that the process enables the author to gain experiential knowledge about the application of the theory of transformation into a tangible object.

The design of the probing object is based upon the literature review of transformational objects in relation to emotion and sentiment; and is optimised for this experiment by making the following considerations as stated below.

Firstly, the object needs to transform within a short period of time, in order to effect the interviewee's use of the object.

Secondly, the object is to be a non-jewellery object so that the information gained from it is not restricted to jewellery only.

Thirdly, the object needs to have a function in order for the participants to transform the object through the experience of using this function.



Fig 62. Coffee stained napkin



Fig 63. Beer cup and mat

Such considerations in the design of making the probing object led to ideas about coffee stained napkins (Fig 62) and beer mats (Fig 63). The idea of coffee stained napkins, which leave traces of time through use, fulfills both the transformation of the object and the engendering of the participants' ownership towards the object. This research asserts that people tend to have no feeling towards cheap paper napkins, but when they start to leave their traces, such as coffee stains or scribbles of notes, then the napkins start to become meaningful, as is proposed by Van Hinte's argument that "people are bound to feel more attached to their own creations than to impersonal contraptions". (Van Hinte, 1997, p. 150) Furthermore, the examples explained in Chapter 2.2.2, Rolf Sachs' *Strip Bracelet* and Kim Buck's *Gold Ring*, support how such an autonomous interaction enacts an intimate relationship between the object and the user in a short period of time. The concept of the beer mat is added to the idea of the coffee stained napkin in order to intensify the engendering of the user's emotional attachment. It is a sufficient object to be applied in the design of the probing object, as beer mats are commonly regarded as people's memorabilia of good times with its prints of the location on its surface, such as the name of the pub or the vacation spot; and because the interview is set in a unique place to be remembered.



Fig 64. Mat - Cup & Mat (Probing object)



Fig 65. Cup - Cup & Mat (Probing object)

With these concepts in consideration, I made silver and brass metal cups (Fig 65) and wax mats (Fig 64) as the probing objects. The concept of the coffee stain napkins, which makes an individual mark of the user's experience was developed into the idea of a melting wax mat. It was constructed so that the metal cup with a hot drink transformed the surface of the mat and left traces of the user's experience every time the hot metal cup was laid on top of the wax mat. Similar to the idea of beer mats, the wax mat was stamped with the title of the exhibition "The Walking Table" and the title of the fair "Handwork & Design", so that it can be an object of memorabilia for the participants, and which can signify their attendance at the exhibition. It was designed so that the participants were allowed to take away with them a meaningful wax mat that they have created and personalised by the end of their experience of transforming it.

## Process and questionnaire



Fig 66. Interviewee during an interview



Fig 67. Probing object being used by an interviewee

Considering the informal situation of the exhibition, the interview was done in a conversational form. There was an awareness from previous visits that the exhibition venue makes it difficult to gain an interviewee's full attention during the interview, due to crowds of people that have come to see the exhibition. Therefore, as an interviewer, instead of having notes or papers, an imaginary guideline to keep the conversation was needed in order to keep the conversation focused and to stimulate the interviewees to talk about their object of the similar experience. For the same reason, instead of writing notes during the interview, a voice recorder was used to gather the information.

The interview was designed so that the interviewees were to experience the probing object of "Cup & Mat" before starting the conversation by using the exhibition setting. At the exhibition, many works of different designer/makers were placed on tables and anyone who was interested was invited to sit at one of them and was allowed to interact with them if they were willing. The probing object was placed on one of the tables so that people who had experienced drinking hot tea or coffee from it were aware that it would lead to an interview.

The main two topics of the conversational interview were:

First to discuss their experience of the probing object of "Cup & Mat" and their understanding of how emotional attachment towards an object may be engendered by transforming it. Secondly, to discuss the interviewee's own emotionally attached object or cherished object, which has a transformational quality.

The first part of the interview examined whether the interviewees have made some sort of connection or attachment towards the probing object and to distinguish whether it was affected by the transformational quality of the object. Questions were asked by using simple words such as "feeling of connection" or "ownership" to convey a clear meaning of the concept of "emotional attachment" to the interviewees. The second part of the interview was to talk about objects with similar characteristics that are owned by the interviewees. The purpose of this was to gather information on the diverse ways of constructing transformation in object that engender an emotional attachment. It was anticipated that examples of emotionally attached objects with transformational quality can be generated by the interviewees when they have experienced and understood the characteristics of the probing object.

After the interview, an informed consent form, which describes the project, procedure and risks of the interview; and a consent form on the agreeing of the interview was given to the interviewees, in order to ensure the interviewees were aware of their rights to withdraw

information prior to the submission of the research. The interview was not concerned with confidential or personal information on the interviewees, but it was carefully planned since the interviews have been carried out extemporaneously and they were being recorded. (More detailed information on the questions of the interview and the consent forms are attached in the appendix.)

### 3.3 Responses, findings and analysis

This interview is a qualitative data collection to examine transformative qualities in emotionally attached objects and to determine their characteristics by interpreting the collected information. The analysis of the interview is not a discovery of something new, instead, it is a re-examination and reflection upon the real life experiences with objects, and uses personal interpretation as an experienced maker as to determine its potential to be applied in the making of transformational jewellery.

At the first stage of the analysis there is a selection of those words and concepts from the participants, which are perceived by the author to be important. The below is the first list filtered from the transcript of each of the interviewees:

#### Interview 1:

Usually linked to family (grandmother)  
Wedding ring  
Something original and exciting  
Classical  
Two of us make it interesting  
The element of giving / present

#### Interview 2:

Ted Noten Chewing gum  
Wearer's role in the making of attachment  
Creativity

#### Interview 3:

The value of the material does not matter  
Got lost and found again (wedding ring-fell off while skiing in deep snow)  
Personal history  
Hair (history of someone they love) sentimental jewellery  
Living trace  
(about father's silver beaker which has been kept through 2 war periods)  
Make life rich  
Emotional object may change people's behaviour and good for children's education



#### Interview 4:

Lost stone in a ring  
Wedding ring with a hurable material of fine gold  
    Resemble their life together  
    Grow with us  
    Not only about good history but also the hurable relationship  
    (marriage)  
Breakable object - being careful about moving

#### Interview 5:

Effect of time  
Not immediate, repetition in time  
Eat away the material  
Personalisation makes it to be more mine - ownership  
Reminder of what I have done now (of this moment)  
Walk on the snow (imprint-remains for a while)  
Combination of both physical object and mental memory/history  
Coral necklace (Lucky charm of South Italy)  
    Consumed coral (disappearance - feeling sad)  
    Modification  
    Superstitious  
    I decided that it is lucky for me (intention)  
    Carrying with me all the time  
    Losing grandmother along the way  
    Re-enamel (new life) - it will change meaning, not original  
    Extreme transformation may take away the energy out of it  
Dirty car (sand) - good memories of fun time in beach  
Laura Potter - simple gold chain (Imprint, modification)  
Bag scratched by cat (strong link to the object, reminder of the dead cat)

#### Interview 6:

Draw trace  
Creativity  
User being involved in the shape and picture

#### Interview 7:

Put anything inside the wax mat (tissue)  
Writing on the wax mat  
    Personal information such as telephone number

Memories of the moment  
Ted Noten Chewing gum (creativity of the user)

#### Interview 8:

Jewellery making scratches on the body

#### Interview 9:

Involvement, interactive  
Scratches made on leather bag (reminder of falling down)  
Shoes  
    Resemble own habit of walking  
    Wearing away of the same spot  
    Looking back at myself  
    Feeling of emotion towards the object  
    Do not want to renew it  
Need physical time before throwing away emotional object  
Emotional object include object such as computer components  
(which have served to help me)  
New clothing need physical time to get acquaintance and to form a relationship  
(similar to the relationship between people)

#### Interview 10:

Silk scarf (change how I wear it)  
    Wear everyday (regardless of weather)  
Family Ring  
    Always on me  
    Stamp (family crest)  
    Everyone in the family is wearing it  
    Feeling of being near the family members

As it can be seen from the data above, this is a provisional list of words that have been selected to determine the character of transformational object or emotional object, and which have been exemplified by each interviewee. They give an overview of the long interview and act as reminders of the conversation. The list has been formed by listening to the recorded interview two or three times and by writing down each participant's choice of words on the description of their emotional object. A word such as "hurttable" is an example of a word used by an interviewee that gives a clear explanation about the characteristics of the object and the perspective of the interviewee. Therefore, recording words into lists from the

transcript is a sufficient method to be used in this experiment since they offer a direct notion of the object as described by the interviewee. Furthermore, the method filtered out information about the interviewee's personal character or style of talk, as it was intended to capture the description of the object and not about the interviewee.

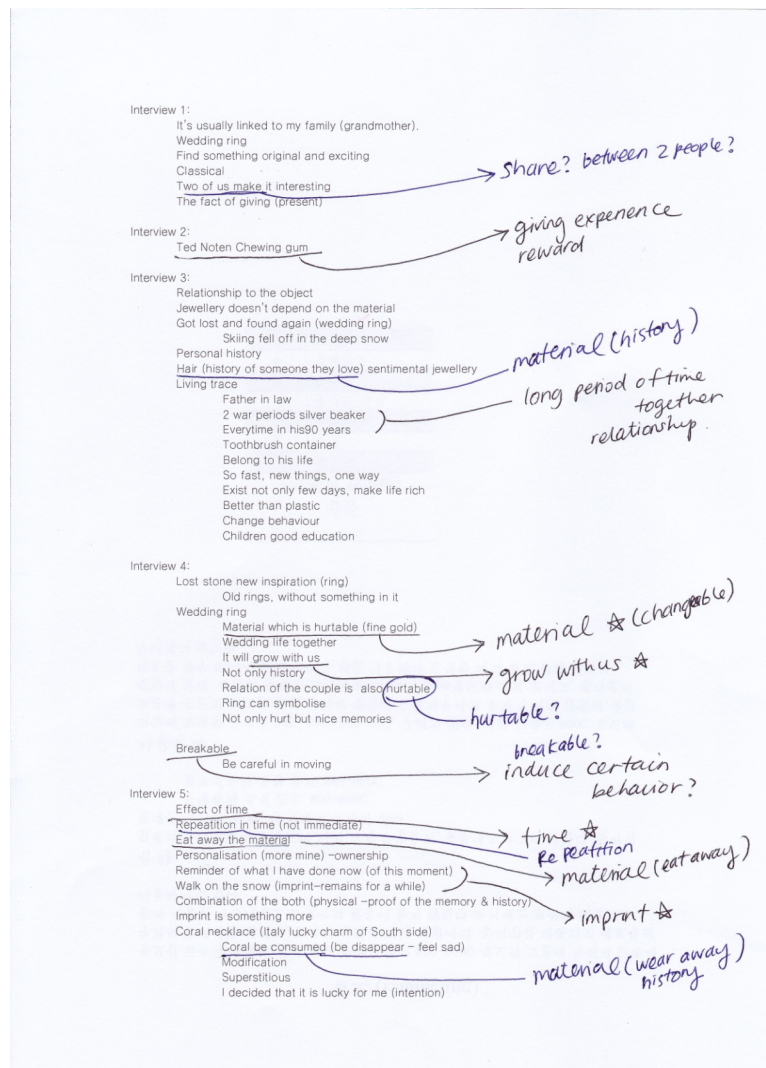


Fig 68. Analysing process of the interviewee's responses

In order to investigate fundamental characteristics of transformation, another filtering process has been done that highlights those words that have been used repeatedly and those words that have potential to become a transformational object. The figure 68 describes how this process has been done: the typed text is the first list of concepts from the recording and the hand-written parts demonstrate the second filtering process. From this process, thirty to forty words on the characteristics of transformation have been selected:

Wedding ring	Present	Two of us
Original	Creativity	Wearer's role
Personal history	Lost and found	Hair
Living trace	Lost stone	Hurttable material (gold)
Grow with us	Resemble life	Breakable object
Time	Repetition	Eat away material
Personalise	Reminder of now	Memory
Modification	Consume	Carrying always
Imprint	Reminder	Personal information
Interactive	Involvement	Wear away
Family ring		

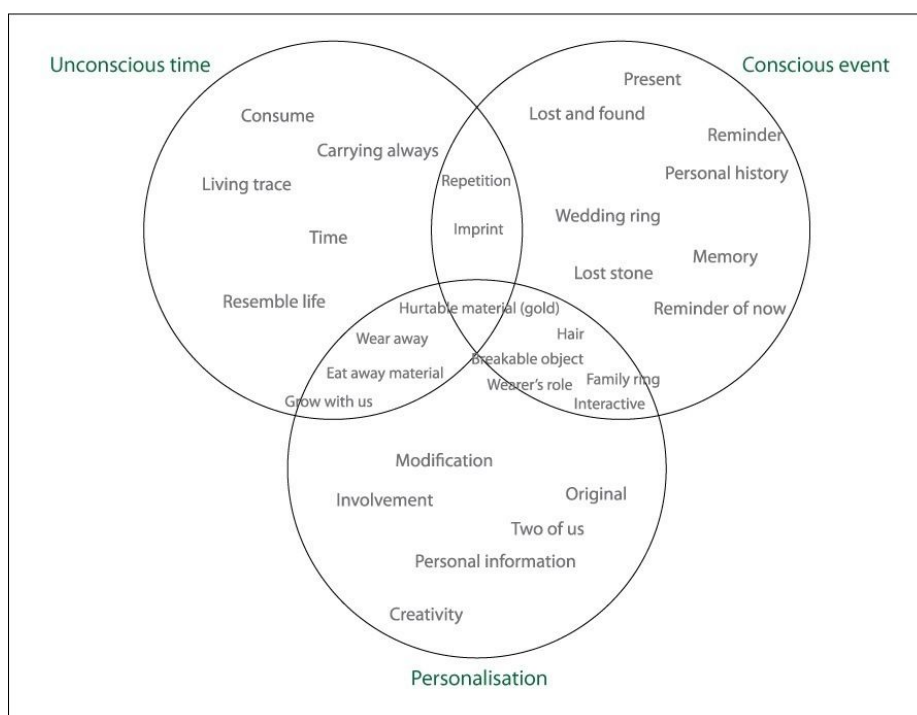


Fig 69. Selected words from the analysis

Fig 70. Three categories of emotionally attached object analysed from the experiment

These selected words (Fig 69), that seen to hold similar characteristics, were then grouped together and formed into three themes of: “Unconscious time”, “Conscious event”, and “Personalisation” (Fig 70). This research asserts that these three themes are significant elements that have potential in engendering emotional attachment in relation to transformation; and should be investigated further in the research.

## 1. Unconscious time:

Carrying always	Consume	Living trace
Time	Hurttable material (gold)	Repetition
Imprint	Resemble life	Wear-away
Eat away material	Grow with us	

This category includes those words that are transformational features of emotionally attached objects, where the transformation is visualised through the unconscious passage of time and use. It includes objects that have characteristics of being with the user for a long time and that reveal its time and use through its consumed appearance or imprints. Such qualities of object may not engender the user's immediate emotional response but gain this reaction by permeating gradually into their lives and slowly resembling their wearer themselves or eventually tracing time with the user's imprint on its surface. An example of an object that was exemplified by one of the interviewees (Interviewee 5) was a coral necklace, which was regarded as a lucky charm in her country (South Italy). She recalled that it has been on her neck everyday for more than five years and has become much smaller than it was initially. The interviewee signified the coral material as having 'consumed' their time together, which had given her the notion of safety and comfort. However, a negative side to this consuming of material is that the interviewee said she feels upset that the coral necklace does not preserve its original state and has become smaller, but she confessed that the attachment would not be the same if it was renewed to its original state.

## 2. Conscious event:

Present	Lost and found	Lost stone
Reminder	Reminder of now	Memory
Wedding ring	Personal history	Repetition
Imprint	Hurttable material (gold)	Hair
Breakable object	Family ring	Wearer's role
Interactive		

In this category, the words include features of transformational objects, which engender an emotional response by embodying memorable events. One notable example of this is a

ring with a deep scratch, which was mentioned by an interviewee (Interviewee 3). The scratch on the ring was made by hitting a rock, when it fell off the interviewee's finger whilst skiing. She recalled an unbelievable memory of losing and finding the small ring in a vast area of snow and said that the scratch, which had been made by the event, increased the emotional level towards it by reminding her of the past memories. The interviewee said that this scratch, which may seem to be a flaw to the ring, is what makes the ring hold some significance for her. A similar example can be seen in an object mentioned by another interviewee (Interviewee 5) about a bag with a scratch made by her cat. She said that she feels affection towards the bag because the scratch was made by a cat had passed away years ago. Similar to the ring example, the scratch enables the bag to gain significance for its user by keeping the story of a dead cat alive.

### 3. Personalisation:

Modification	Involvement	Two of us
Original	Creativity	Personal information
Hurttable material (gold)	Family ring	Hair
Breakable object	Wearer's role	Interactive
Wear away	Eat away material	Grow with us

This category is concerned with words that offer insight into those transformational qualities of objects that engender an emotional response by representing the user in its transformational character. It includes examples of objects that have been made through people's creative act or that are constructed so that the user can make special imprints on the object to make it individual. One predominant piece of jewellery that holds such characteristics is Ted Noten's jewellery: *Chew your own brooch*, which has been mentioned by two interviewees and which is also referenced in this literature review (Chapter 2.2). His jewellery is cast by the wearer's chewed gum and Noten mentions it as a "small sculpture fashioned by a participant's mouth". Emotional attachment may be engendered through the personified characteristics that represent the self, and that is unique from any others.



Fig 71. An interviewee altering the probing object *Cup & Mat*  
 Fig 72-73. Probing object altered by an interviewee

There was a notable conversation made with one of the interviewees that was very distinctive from the rest of the discussion with the interviewees. It was a talk about the intensity of transformation that is needed in the object for it to engender a user's emotional response, and which had arisen from the talk on Noten's jewellery. The interviewee argued that a stronger engagement between the object and the user can be achieved when there is more direct involvement of the user such as the one in Noten's jewellery and when there is more active interaction involved in the making of the transformation. As it can be seen the figure 72-73 above, she demonstrated her argument in the probing object of "Cup & Mat" by adding a piece of tissue to the melting surface of the wax mat and argued that such interaction may trigger a stronger bond than just the melting of the mat, which she referred to as a passive transformation. The interviewee made another approach to making active transformation by stamping the melted wax on a piece of napkin (as seen in the above figure). With such feedback from an interviewee, this research acknowledges that different interpretations can be made in matters of emotion, but asserts that intensive transformations which involve this active alteration of the object does not always create a greater bond. This assertion is supported by referring to Chapman's writing (2008) that measuring experiences in terms of their apparent intensity is unhelpful as it fails to designate the long-term efficacy and potential durability of the experience itself. Furthermore, he writes that those subconscious experiences, that are perceived only within deeper levels of mental processing, establish strong and durable connections within users, on both rational and emotional levels. There may be disagreements about this, since emotional responses may vary between people, but many of the examples given by the interviewees support the argument that the intensity of user's involvement in the transformation of the object bears no relation to the user's emotional level, and it is rather the transformation about individuality and creativity that reinforces the engagement.

Similarly, contradictory responses are also examined in other circumstances. One interviewee had a negative response of feeling upset about the transformation of her coral necklace, which wears out its surface; and another interviewee had a positive response towards the similar transformation on his worn out pair of shoes. He had a different view by saying that this worn out pair of shoes are significant objects to him as they resemble his time of labour and work, and also because they resemble how he walks. The interviewee added that transformational objects that have been worn out are the most difficult ones to throw away as they are symbols of their time, which cannot be earned back. Therefore, the transformation of wearing away, which can be considered as a negative transformation to some people, may also have a contradictory view of positive quality determined by how the transformation is constructed in the object.

The example of the transformational object 'fine gold wedding ring', which is included in all three categories of "Unconscious time", "Conscious event" and "Personalise" is also another aspect which needs to be reported as a significant piece of data of this experiment. It is an example given by one of an interviewee: a custom made wedding ring, especially made with fine gold material so that its soft quality can absorb the time of their marriage on its surface. She described the ring as a "hurttable" ring and showed lumps and scratches that have been acquired over time. Such a ring can engender the user's strong emotional attachment by having all three qualities: "Unconscious time": which gains significance as the passage of time and use on the surface of the material without the wearer's awareness of the change, "Conscious event": where the wearer can recollect past memories by seeing the damaged surfaces; and "Personalise": which represents the wearer and the unique movement through the transformational character of the material. This example, of the ring, is a relevant piece of data to be referred to as it satisfies all three aspects, which this research analyses as the main aspects of making a transformational object for emotional attachment.

The data generated from the interviewees narratives regarding their own examples that are relevant to this experiment, proves that the probing object of *Cup & Mat* operated well in providing an an opportunity for the interviewees to explore their understanding about the relationship between transformation and emotional attachment. The interviewee's experience with the object not only provided understanding to the interviewees, but also to the researcher by observing their experience. From this, significant information about the positive and negative aesthetics of transformation was gained. It was observed that an interviewee was concerned with how the melted wax made marks on the white tablecloth, and so had placed napkins beneath it. This observation provided knowledge about how such undesirable transformation may effect the engendering of emotional attachment and



also about the consideration of the negative sides of transformation. Furthermore, as explained in the previous section about the probing object, its making process enabled the author to apply the theory of transformation within the practical work and to employ the knowledge (or the craft sensibilities) of material properties into the construction of transformation into objects, that then reveal their effect on emotional attachment.

Accordingly, the object achieved the aim of drawing out diverse information from the participants. At this early stage of the research, the method was sufficient as it touched on diverse aspects that are within the relationship of transformation and emotional attachment. The information gained from this experiment is reflected upon later in the research and one of the themes of “Unconscious time” is investigated further in the following experiment.

## Chapter 4.

Prototype study: Experiments with transformational jewellery as an agent for emotional attachment

This part of the study offers an interim inspection upon those characteristics of transformation, which have been identified as important, in order to engender an emotional attachment, through the analysis of information gathered from the literature review and the object interview.

Experiment on the characteristics of transformation	
Literature review	Traces of use over time Positive transformation
Object interview	Unconscious time

Fig 74. Visualisation that explains the experiment

As shown above, this experiment brings together the transformational characteristics of “Traces of use over time” (Chapter 2.3.1) and “Positive transformation” (Chapter 2.3.2), that have been identified in the literature review (Chapter 2.3); and one of the categories of responses: “Unconscious time”, that has been analysed from the object interview (Chapter 3.3). The category of “Unconscious time” is used in this experiment because its elements such as “living trace”, “imprint” and “wear-away” correlates to the characteristics of transformation identified in the literature review.

The aim of this experiment is to examine the characteristics of transformation developed from these two studies and to investigate further elements in transformational jewellery that effect emotional attachment. This experiment uses the method of prototype experiment, as a way of testing the existing knowledge in a real-life situation on participants, and uses the method of diary study in order to gather the data from the experiment. The experiment includes the making process of the prototype jewellery in order to produce knowledge through the process of “learning and understanding through material experience”. (Gray and Burnett, 2009, p.51)

## 4.1 Methods

Two methods are combined in this experiment, “experience prototype” and “diary method”, to test the prototype in a real-life situation and to examine and record the interactions that took place with the wearers.

The experience prototype method is effective for this study because according to Buchenau and Suri (2000), it is a method that is used to emphasise the experiential aspect of whichever representations are needed to successfully convey an experience with a product, space or system. In their research paper titled *Experience Prototyping* (Buchenau and Suri, 2000), they explain that the best way to understand the experiential qualities of an interaction with an object is to experience it subjectively by enabling participants to have a direct experience rather than witnessing it, because experience is, by its nature, subjective. Since the transformational qualities of this research can only be understood by experiencing or using the object, this method is deemed sufficient as it provides an understanding of an integrated experience set within a context rather than just of the artefact itself. It allows participants to fully experience the transformation of the prototype jewellery in their everyday life over a period of time and to offer feedback based on this experience.

The use of this method can also create understanding through the analysis of the information generated not only by the user but also by both the maker and (in this case) by the researcher. The inclusion of practice in the research process “facilitates the communication of the tacit part of experiential knowledge” (Nimkulrat, 2012a), in order to produce new knowledge on the tactility of transformation. According to Walker (2006b), theory is produced by reflecting upon the outcomes of these activities of transforming the knowledge and theory into material expressions. The researcher’s attempt at making the prototype jewellery provides a deeper insight into the practical aspects of transformation, than would have been acquired by theory alone; since countless simulations of the object, along with the projections of the outcomes in the mind of the maker take place throughout the design process with many decisions being made regarding the design and fabrication of the object.

This experiment also uses the diary method to heighten the value of the prototype experiment, by capturing the data in a written form. According to Bolger, Davis and Rafaeli’s paper *DIARY METHODS: Capturing Life as it is Lived* (2003), the diary method is used to provide frequent reports on the events and experiences of people’s daily lives. It is

an appropriate method to be combined with the experience prototype method since, it is a self-reporting instrument that is used repeatedly to examine ongoing experiences and is capable of examining the emotional shift in the participants, whilst offering opportunities to investigate the psychological processes within everyday situations. (Boger, Davis and Rafaeli, 2003) Therefore, the method allows the participants of the experience prototype to report their on-going experiences with the prototype object and to report on their emotional shift in a spontaneous and frequent fashion. Among the many types of diary methods, the most commonly used is the “paper and pencil diaries”, in which the participants work with portable booklets to record their experiences, due to its simplicity in form and use. After close to forty years of relying on simple paper and pencil methods, the last two decades have seen, two major waves of change in diary research occurring with the emerging use of signalling devices such as pagers, preprogrammed wristwatches, or phone calls; and electronic means of data collection such as handheld computers (i.e., palmtop computers, personal digital assistants), web-based questionnaires or to phone-in protocols. (Boger, Davis and Rafaeli, 2003) This method is appropriate to collect information since it reflects, the present media and offers an appropriate mix of both the recent methods and the traditional method of “paper and pencil” diary.

This experiment makes use of the two methods of experience prototype method and diary method with the intention that one performs as a testing tool and the other is used as a data-collecting tool. They are effective in gathering information about the relationship between person and object in regard to object transformation because together, they operate to collect the subjective emotions and interactions that take place between the participant and the object by capturing the events and experiences of people's daily lives from a personal point of view and in a systematic manner. The use of the diary method, in particular, is expected to produce rich data about the everyday interactions that people have with their jewellery, and which may not be necessarily be related to either emotional attachment or transformation. The analysis of this data is significant for this research since it generates unexpected information that assists in demonstrating the research findings into practice work.

## 4.2 Prototype - Transformational jewellery

This section focuses on the explanation about the making process and the design of the four pieces of prototype jewellery that represent the characteristics of transformation developed so far in this research. The making process takes on an important role in this research since it generates information about how knowledge from research is transformed into tactile forms of jewellery, and how new knowledge is achieved from the crafting of the prototype. Therefore, this section offers an explanation about how the author, as a craft maker, bridges the gap between research and practice work; and also how the knowledge is gained from the process of “thinking through making” (Nimkulrat, 2012b). The inclusion of the making process provides a far richer source of information about knowledge, one that is not tapped into when being done in theory alone. This process is particularly pertinent since the practice is not just about the ‘design’, but rather it is about the ‘making’ of the object. The understanding that is gained from a research practice situated within a craft framework, (and which uses the tactile experience of handling the material and materialises the theory through the making), demonstrates the differences between this approach and that of a design approach. Thus, this research highlights what further information is gained above and beyond the use of a theoretical approach only. Moreover the making process is significant for this research because it concerns the emotional attachment that involves people’s experiences with the object and tactility of an object and this has been illuminated by an approach that includes a craft sensibility.

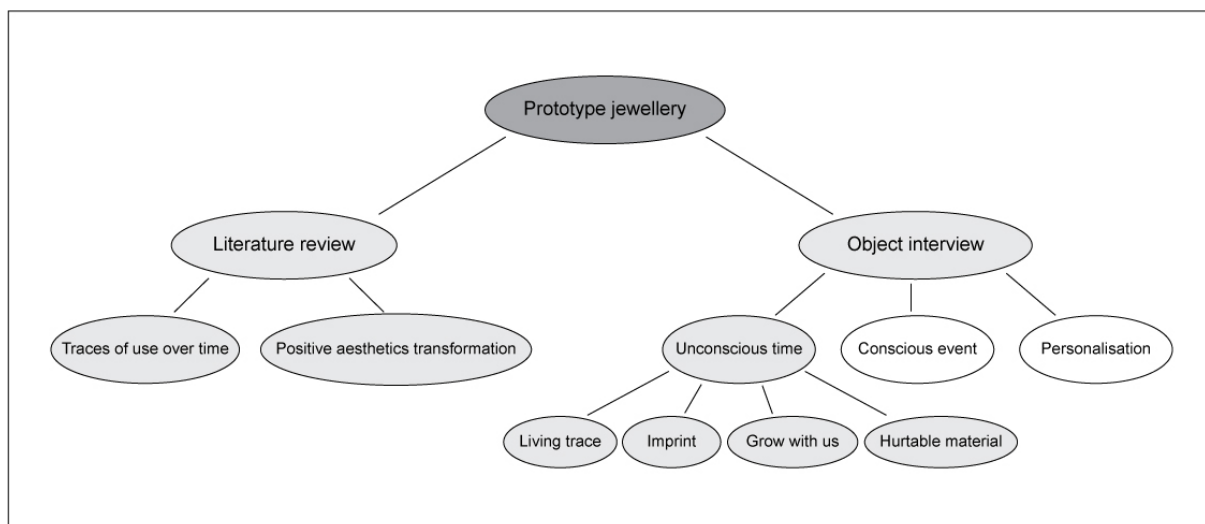


Fig 75. Visualising information about the construction of prototype jewellery

As explained in the above figure, the characteristics of the transformation of the prototype jewellery is constructed upon “Traces of use over time” and “Positive aesthetics transformation”, that have been asserted in the literature review (Chapter 2). This also

refers to one of the categories of transformation, “Unconscious time” that has been extrapolated from the discussions in the object interview (Chapter 3): “living trace”, “imprint”, “grow with us”, and “hurttable material (gold)”. From such information, this research determine the transformation of the prototype jewellery as a change that develops on the surface of the jewellery with the wearer’s use over time. The transformation is made to be deliberately constructed within the jewellery so that it develops in an unconscious manner by the wearer’s use. Similar to the use of the pure gold material of the wedding ring (the example mentioned in Chapter 3.3, which transforms its material due to the soft quality), the transformation of this prototype jewellery makes use of the material quality of silver oxidation, that changes its colour through use and the passing of time. The use of the silver material property in constructing the transformation in the prototype jewellery has been made using the tacit knowledge of the author. As an experienced metalsmith practitioner, there is a pre-knowledge that the silver material changes its colour as a result of people’s touch. The understanding of the transformational characteristics of silver material oxidation that reacts to heat; and moisture and bodily contact was gained from previous experiences with silver, which assists in constructing the transformational quality of the jewellery.



Fig 76. Oxidation on silver plate caused by touch with fingers

Silver, which is commonly used as to make jewellery and silverware is a copper-silver alloy in a ratio of 7.5:92.5. Copper is added when making of silver object because “pure silver is too soft to be used in its pure state” (Powerhouse Museum Conservation department, 2010). But this alloy has a drawback in that it has a pronounced tendency to tarnish. According to Gardam (1969), the tarnish is due to the contact with sulphur compounds and the main cause of the tarnish is a trace of hydrogen sulfide gas in the air. Tarnish, which is also referred to as silver oxidation, is a reaction which is developed on the surface of the silver material “as a gradual discolouration from yellow or pink, to brown, dark grey then black” (Powerhouse Museum Conservation, 2010). As it can be seen in the fingerprint marks on the silver plate shown in the figure above (Fig 76), the salts and grease in our skin also

cause the silver change in colour. The changes in colour are difficult to notice at first, but they then slowly darken as the silver is in contact with the air, water and skin. The prototype jewellery makes use of this drawback of silver material to construct a transformation and in a contradiction to the way that tarnish is normally worked upon to be eliminated; it is constructed to bring it forth even more to engender the wearer's emotional response.

However, while making the prototype jewellery, I realised that the sole use of the silver material is not sufficient enough to engender emotional attachment, as there is no distinction from any other ordinary silver jewellery. Therefore, in order to bring a focus upon the silver oxidation and to draw attention to the use of oxidation as being deliberately designed by the maker as part of the jewellery, a non-transformational material is placed next to it. The non-transformational material refers to a material that remains static in appearance, does not change in colour, and has similar qualities to silver so that it can act as a reference point of the silver oxidation. This also assists in perceiving the change of colour in the silver material, since oxidation is a subtle change in colour that cannot be seen in real-time, similar to the concept of "just noticeable difference" (Norman, n.d.), that has been explained in Chapter 2.3.1.

The concept of placing a static material next to silver, a transformational material, is similar to the way in which Laura Wood has made use of enamelled and non-enamelled surfaces in her work *Teacup*, explained in Chapter 2.3.1. Having a static reference material assists in revealing the subtle transformation of the silver oxidation and also brings forth the message that it has been deliberately designed in the jewellery in order to make it into a "positive aesthetics transformation" (Chapter 2.3.2), since transformation of material from the use and the passing of time is likely to be perceived as negative aesthetics of "age, decay, decline, deteriorate, wane, decompose, get old" (Saito, 2010).

Different interpretations of the use of silver oxidation and non-transformational material have been made in each of the four jewellery prototypes. The following explains how I have interpreted silver oxidation in four different ways, based upon my understanding and experience with the material.



## Different percentage of silver-copper alloy

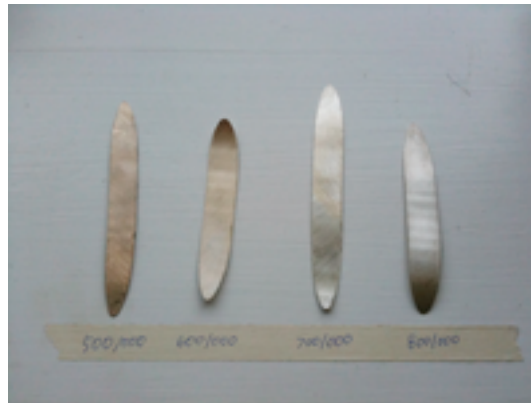


Fig 77. Silver alloy test (500/100, 600/100, 700/100, 800/100)

The key point of this interpretation of silver material is to make use of the silver-copper alloy, as a transformational material, and pure silver as a reference point in constructing the transformation. It is developed from my tacit knowledge about silver material, in which a faster oxidation occurs in silver-copper alloy than pure silver. In a way similar to Wood's work, it is possible to reveal the oxidation of silver in an effective way by juxtaposing different alloys of silver, which have different rates of change. It is expected that the alloy with a greater amount of copper will reveal greater colour change than the alloy with no copper (pure silver) and this will make a contrast between the two. Therefore, the less transformational character of pure silver acts as reference point for the viewer to notice the subtle change in the silver-copper alloy. A small material test is conducted in order to designate which percentage of the silver-copper alloy is to be placed next to pure silver when making the prototype jewellery. As can be seen in figure 77, four different percentages of silver-copper alloy (copper:silver, 50:50, 60:40, 70:30, 80:20) are made and each has changed in colour by being exposed to air and touch for one month. The colours of these alloys show slight differences when compared to the colour of pure silver, even before their oxidation due to the amount of copper in the alloy. Thus, in order to make the alloys to have a similar colour as the fine silver, a "fire-scaling process" is undertaken. It is a method that "brings up the fine silver"<sup>2</sup> (Lewton-Brain, n.d) in the silver-copper alloy by heating the surface and pickling it in an acid solution; it is also referred to as "depletion silvering" or "fire scale". Repeating such a method removes the copper from the surface of the alloy and projects fine silver on its surface so it appears to have a similar colour to fine silver.

<sup>2</sup> According to Lewton Brain, (n.d.) "bring up the fine silver" is a misleading term for depletion silvering. It is a method that involves repeated heating of the silver alloy until the surface discolors as to leave a yellowish colour, and pickling it in an acid solution. The surface may be brass brushed with a little soapy water in between each heating and acid pickling sequence to render a smooth, bright, satin finish. The repeated process of this attacks copper oxides from the silver alloy surface and leaves behind fine silver. As a result, it gives the surface a "dead white covering" (Lewton-Brain n.d.)

## Sterling silver and static material of stainless steel



Fig 78. Stainless steel and sterling silver - test piece

The second interpretation of silver oxidation uses the static material of stainless steel to make a contrast to the oxidation of 92.5: 7.5 silver-copper alloy (sterling silver). It is similar to the application of pure silver to mark the contrast to the silver-copper alloy, used in the interpretation above. Stainless steel is a static material that does not change in colour and as it can be seen in the figure above, its colour is slightly darker than silver. At some point of the oxidation, sterling silver takes on a similar colour as stainless steel and even gets darker as time progresses. Here the intention is that the stainless steel can be a reference point to the change in sterling silver.

## Using sulphur containing material



Fig 79. Examples of tarnished, silver-plated metal cutlery, caused by gases emitted from formaldehyde

The third interpretation of silver oxidation is to place a material that accelerates the oxidation of the silver material. Oxidation in silver occurs when in contact with sulphur compounds such as car exhausts, cigarette smoke and other pollutants or materials such as rubber or wood products; and protein based materials such as wool, felt, silk and leather. As can be seen in the above figure of the silver-plated cutlery (Fig 79), oxidation has occurred by gases emitted from the timber storage cabinets. It is true that oxidation may occur when a silver

object is exposed to the open-air, however a more immediate change can be visualised when silver is in contact with sulphur containing materials.

## Reverse use of oxidation

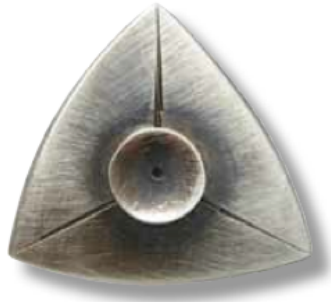


Fig 80. Liver of sulfur on sterling silver, partially removed

The last interpretation of silver oxidation uses an opposite approach and oxidises the silver material at the beginning. Instead of darkening the colour as it is used in the interpretations above, the aim is to reveal the white silver underneath the oxidation through the passage of time and use by oxidising the silver in advance. As it can be seen in the figure above (Fig 80), when the silver is oxidised in advance, the transformation of revealing the white silver can be achieved by the repetitive act of rubbing with fingers or with abrasive material. Also, the figure shows that uneven surfaces can project the transformation even more so by making the changes only on the parts that are projected and the blackened surface remaining in the sunken areas. Rather than wearing out the whole surface, the transformation may be easily perceived by the contrast to the areas that do not make the change. This is similar to Ruudt Peter's necklace (referenced in Chapter 2.3.3), in which the necklace was intended to wear out projected parts of the necklace by dipping it into black paint before it is put on. Pre-oxidation process of silver is an easy and favourable way to give a quality finish to the silver work and one of the most common ways to do this is to dip the silver into liver of sulfur or chemical oxidisers such as "Black Max" (Snyder, 2011). There is a slight difference in the colour of black depending on the brand, the temperature of the solution and the length of time the silver is dipped into it, but it is a simple and effective way to darken its colour within a short period of time.

## Prototypes - Four pieces of jewellery

This section describes four pieces of prototype jewellery produced for the experiment. Each piece has been constructed based upon one of the four interpretations of silver oxidation, described in the earlier section. The prototype jewellery is constructed so that the transformation of silver oxidation is developed on its surface through a participant's use during the experiment and to be projected effectively for the participants to notice the change.

The prototype jewellery pieces are all made as ring forms in order to project a stronger transformation in a short period of time upon their surfaces. The ring is a sufficient form to be used as a prototype jewellery piece since the transformation can be easily triggered in the silver material when it is in contact with the oil and moisture of the human skin and also because a ring has higher contact with the body than other forms of jewellery.

The shape of the jewellery is to have flat planes rather than of voluminous shape as it is an appropriate way to detect the colour changes and to prevent the ambiguous colouration that might appear on a curved form. The surface of the jewellery is made to be uneven and to have textures of wood bark because the oxidation is established more effectively in the small cracks of the texture that cannot be touched or be rubbed out, than on the smooth surfaces, which can be eliminated through repetitive polishing.

Therefore, the four prototype pieces of jewellery take on similar shapes through the use of flat sheet and with the use of textures taken from wood bark. However, they will be distinctive in the interpretation of silver material: 1) transformational jewellery which uses different alloys of silver, 2) transformational jewellery using sterling silver and stainless steel, 3) transformational jewellery which uses silver and sulphur containing material, 4) transformational jewellery which uses oxidised silver.

## Transformational jewellery using different alloys of silver

Material used: pure silver, 600/100 silver copper alloy

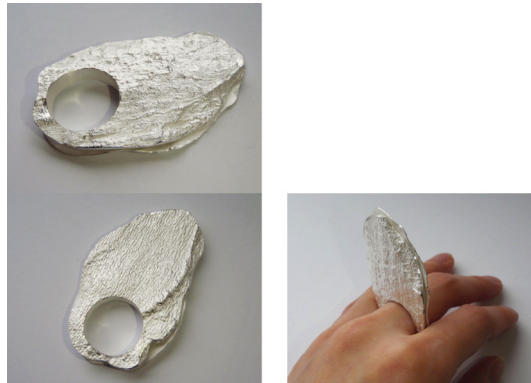


Fig 81-83. Prototype jewellery - pure silver and 600/100 silver

In this prototype, two different materials of pure silver and 60:40 silver-copper alloy sheets are soldered together to make a two-sided ring. It is constructed so that the transformation of silver oxidation develops on the silver-copper alloy side of the jewellery and make a contrast with the pure silver side and for the change to be noticed by the wearer.

## Transformation jewellery using sterling silver and static material of stainless steel

Material used: stainless steel, 925 sterling silver



Fig 84-86. Prototype jewellery - sterling silver and stainless steel

In this prototype jewellery, stainless steel is employed to make the oxidation of the sterling silver noticeable. The two sided main body of the ring are all made out of sterling silver, and the dark coloured tubes are made in stainless steel. As can be seen in the figure above, the two materials take on different colours, because the silver is in a clean state. After weeks of wearing and being exposed in open space, the silver surface will oxidise and darken to take on a similar colour to the stainless steel.

## Transformational jewellery that uses sterling silver and sulphur containing material (felt)

Material used: 925/100 silver, felt



Fig 87-89. Prototype jewellery - sterling silver and sulphur containing material (felt)

In this prototype jewellery, felt material is used to accelerate the speed of silver oxidation. It is a material that is easy to acquire and form into a shape; and as explained in the previous section, it possesses the property to oxidise silver material with its sulphur compound. As can be seen in the figure above, green coloured felt is used as to cover one side of the jewellery.

## Transformational jewellery that uses oxidised silver

Material used: 925/100 silver, liver of sulfur



Fig 90-92. Prototype jewellery - oxidised silver

This last prototype jewellery is a reverse application of the oxidation applied in the other three prototypes. As it has been explained in the previous section, the jewellery made out of sterling silver is dipped into liver of sulphur to blacken its surface. The transformation is

constructed in the jewellery for the wearer to reveal the white colour of silver underneath by rubbing out the blackened surface.

## 4.3 Description of study

This study takes place over a four-week period and involves four participants each using and wearing the prototype jewellery and reporting back on their experience with it at regular intervals. It aims to highlight any issues that are not already identified and to offer insights as to how transformation is used to enact a bond between the wearers and the prototype jewellery. The intention of the experiment is not to generate information about the final look of the jewellery but rather for “reframing failure as an opportunity for learning, fostering a sense of forward progress” (Busche, 2014). Therefore any elements that are perceived to have “failed” in this study can be assessed and the information generated, may be used for future developments.

In order to generate sufficient data, the participants interact with the prototype jewellery by using and wearing it over a certain period of time; and then to record detailed information about the hours spent wearing and interacting with their piece. They are to record the physical change of the prototype jewellery and their own emotional responses towards the jewellery. A session with the participants is timetabled at the beginning of the experiment to deliver precise instructions of the study and at the end of the experiment for the participants to reflect on their feedback. The experiment is a relatively unconstrained study that only requires participants to wear the given jewellery, however the recording of the information requires each participant’s intensive effort, as it is to be done every day on a given notepad, and to report back to the researcher every week.

The participants of this experiment act as the subjects of the experiment to test the prototype jewellery but also act as researchers. They are to share, as a group, their experiences and ideas about the concept of the prototype and to report back on their thoughts about it than just mere experience. In this situation, it is important that participants are encouraged to share objective and factual feedback and the researcher does not attempt to influence them with regards to how they choose to respond. Otherwise their views and their ensuing feedback can become biased towards or against the researcher. Moreover, they may begin to feel empathy towards the researcher, alter their responses accordingly.

The role of the prototype jewellery in this study is to perform as “learning vehicles” (Hartmann, 2009): it is to investigate how the jewellery transforms through the wearer’s use; and to observe the effect of the transformation upon the wearer’s emotional attachment in a real-life context. The transformational jewellery of this research is to be applied to a wider



audience and is not intended to be made for a specific person, therefore the prototype jewellery is not custom made for any of the participants.

## Participants

Four people were chosen to be the participants of this experiment. There were no restrictions made on the age, gender or the occupation of the participants as the transformational jewellery of this research is not intended to be applied to a specific group of people. The only considerations that were required for the participants were that they behave responsibly, and were honest and serious about the experiment and were prepared to offer sincere feedback on their experience. Such a request to the participants was emphasised because in order to obtain reliable and valid data from the diary method, the level of “commitment and dedication” (Bolger, Davis and Rafaeli, 2003) of the participant is higher than other types of research studies. The chosen participants were not close friends but ones who were able to share thoughts about each other’s work and who can visit galleries, museums and performances together. My personal acquaintance with them reassured them that they possessed the abilities to engage with such an experiment for the allotted period of time.

Another pertinent fact of interest is that all four chosen people were engaged in the field of arts. The participants were not required to be engaged in such a field, however the ability to think and talk about their emotions and impressions toward an artefact assisted in making the experiment more effective. Since the participants of this research also took on a co-researcher’s role to think objectively whilst using the prototype jewellery, they were also able to detect problems in the constructed transformation and to share their insights about how their emotions can be affected by experiencing these transformations through use. Therefore the important skillsets of the participants are the ability to carry out the experiment in a responsible manner and to act as sub-researchers who can talk about their experiences with the jewellery and give back comments for improvement.

## Pre-testing session

Before starting the experiment, a pre-testing session with the participants was conducted to explain the procedure and to give guidelines to the experiment. It was an open group meeting, in which all the participants participated in asking questions regarding the concept of the experiment and to understand their role in it. During this session, small note pads were handed out to all of the participants for them to report back on their experiences, and here participants had an opportunity to choose their prototype jewellery.

The role of the researcher in this pre-testing session was to deliver a clear explanation about the two rules of the experiment to the participants. One was to wear the jewellery for either three to four times a week, or a minimum of 20 hours a week during the four weeks of the experiment and to wear it whilst they are awake. The second regulation was for the participants to write a diary about their experience with the jewellery based on the following points in the given notepad and to report back on it every week via email.

1. Specify wearing times of the jewellery and interaction with it.
2. Describe physical changes to the jewellery.
3. Describe the participant's connection or intimacy with the jewellery with regards to an act, physical change, thoughts etc.

The explanation was carefully structured so that specific information about the transformation in the silver material was not given to the participants, because it was intended for the participants to notice the change on their own and to see how that affected their emotional attachment to the prototype jewellery.



Fig 93-94. A participant making engraving to the prototype jewellery  
Fig 95. Close up of the engraving in the prototype jewellery

During this session, participants were asked to choose their own prototype jewellery and to engrave their names in them to represent a sense of ownership. As it can be seen in the

figures above (Fig 93-94), participants engraved their names in the inner-side of the ring with an engraving tool. This forming of the relationship between the participant and the prototype jewellery is important since the research aims to gather information on how the wearer or the owner of the jewellery forms an emotional attachment to jewellery. Also it is a system constructed for the participants to have a more comfortable feeling about the jewellery because they had mentioned that they felt apprehensive about handling or ruining someone else's object as it was an unusual way of possessing an object. Therefore, such a procedure can replace an act of buying a piece of jewellery and give them a sense of making the prototype jewellery into their own property. It has to be taken into consideration that an emotional attachment may be formed during the process of engraving, which can also be seen as transformational and to differentiate this from the transformation that has been constructed into the prototype jewellery, and which was to be experienced whilst wearing it. In order to offer a control regarding this complication, the participant's responses relating to the engraving procedure, or about examining their engraving, is excluded during the analysis, because it was determined that informing the participants about the difference between the two types of transformation could cause a biased response. The participants' responses about the experience is not elaborated upon nor is it excluded in the following section since it is regarded as an element which might interfere with the analysis of the effect of transformation that is constructed in the jewellery. However, by studying their diary reports, it is asserted that such interaction of engraving their name has great influence upon the feeling of ownership through its experience and also by perceiving their name on the object.

## Testing period

The role of the participants is to wear the jewellery, and to examine, record and to report back on their experience with it. During the four weeks of the experiment, they wore the prototype jewellery for 20 hours each week at times of their own choosing. The participants examined the jewellery and wrote about its physical changes and their feelings towards it in the notepad supplied; and also sent a summary of this to the researcher every week via email. It was done by using a time-based type of diary design, which involves the recording of their daily experiences at a particular time each day, similar to the well-known way of recording our thoughts in our diaries at the end of the day. It is a systematic way to gather information by allowing the participants to reflect upon and to record the general experiences and the interactions they have had with their prototype jewellery. The repeated request to report, and its regular timing, prompt the 'reflection of change' which is a chief feature of this method.

The four weeks of testing period was decided upon as it was an estimated duration in which the transformation of silver oxidation can be perceived in the prototype jewellery. The effect of oxidation may be different for each of the participants, since it depends on aspects of participant's body, and also the location on the body where the object is worn and kept. The duration of the experiment was also decided upon with consideration to the commitment and concentration of the participants, which may be lost if it became too protracted.

The recording of the experiment applies both the traditional method of diary study and the electronic data collection method. This combination of the two techniques compensates for forgetfulness and limits the retrospective errors encountered in the traditional method of diary recording. The use of electronic data collection is appropriate to be applied in this experiment since the collection of participant's feedback every week via email, helps to ensure participants stay engaged with the experiment and to monitor the participants during the period of the experiment. Furthermore, a mobile phone text was sent to individual participants when they did not send the email every week. During the testing period, it was important for the researcher to keep track and to examine the participant's progress, because this enables the generation of a more-in-depth information from the participants during the last session; by constructing relevant questions for each of the participants from the examination of their weekly reports.

### After-testing session

A final session with all of the participants was done after the experiment to discuss their experiences. Similar to the pre-testing session, it was an informal session where all the participants gathered to discuss their experiences and to return back their prototypes and diary. The aim of conducting this session was to check each participant's report by talking to them in person and by asking further questions, which were formulated by the researcher during the testing period and after reading the electronic data sent by the participants every week.



Fig 96. Participants with the prototype jewellery - gathered for a final session  
Fig 97-99. A participant explaining their prototype jewellery during the final session

The conversations regarding their personal experiences were not a surprise, and simply supported what had been recorded in their reports, but these conversations also generated new critical and negative opinions, which may have been difficult to write about in the diary.

## 4.4 Responses and reflections

This section identifies significant responses gathered from the participants' diaries after the four weeks of the experiment and carries out an analysis on the transformation of the prototype jewellery with regards to the participants' emotional attachment to them. The responses have been gathered from the written diary reports (as seen in Fig 100), electronic data submitted by the participants every week via email, two face-to-face sessions, which were conducted before and after the experiment; and the examination of their returned prototype jewellery.



Fig 100. Diaries written by participants

Through close examination of the participants written diary reports and the post-experiment sessions, it is recognised that all participants agreed to have had an emotional attachment to their prototype jewellery. However, this research asserts that the role of the jewellery's transformation was deficient in engendering an emotional attachment between the participant and the prototype jewellery. Such an assertion is made upon reading the participant's diary report on how they have emphasised other types of interaction that are not related to the transformation of the prototype jewellery. Therefore, the first part of this section highlights the kinds of interaction that took place between the participants and the prototype jewellery during the experiment, and which has potential to be applied as characteristics of transformation. The next part of this section is a more practical analysis on the effect of the constructed transformation on the participants' emotional attachment by examining its evolved physical change upon the surface of the jewellery.

#### 4.4.1 Interaction/experience and emotional attachment

Fidgeting (turning it over in hand)	<b><u>Contemplation (time alone)</u></b>
Placing it near to be seen frequently	Engraving name
Wearing	Acupuncture hands
Play with fingers	<b><u>Feeling change in temperature</u></b>
Selecting jewellery	Rubbing against other objects
Carrying it in the pocket	<b><u>Hooking it in a bundle of keys</u></b>
Cleaning	Grasping for dependence
Scratching other things with the jewellery	Bump on other things

The above points are concerned with the interactions and experiences that the four participants have undertaken with their prototype jewellery during the experiment. Among these, the three interactions (that are underlined): “Feeling change in temperature”, “Hooking it in a bundle of keys” and “Contemplation” are explained in detail and are discussed further because the participants have elaborated on them as being memorable experiences with the prototype jewellery. These interactions and experiences are examined to investigate how they can be integrated into the design of the transformation.

One of the participants commented on the “change in temperature” in her prototype jewellery whilst grasping it in her hand for a long time. She pointed out in her diary that:

“Whenever I have grasped the jewellery in my palms for a long time, it became a similar temperature to my own. After realising that the silver material of the jewellery acquired my body heat, the feeling of both emotional distance and indifference towards the disappeared. I sensed a closeness to it whenever this happened.”

The change in temperature is not in the boundary of the transformation that this research sets, but it is an important element to point out as such a quality has engendered an emotional attachment towards the jewellery. It can be acknowledged from her quotation that silver material property has a sense of “emotional distance” and “indifference” when it is not in touch with the body; and that on the contrary, it has properties of engendering an emotional response when it is in contact with the body.

Another distinctive interaction, which was reported by a participant, was how she had attached her jewellery to her bundle of keys. The participant took a photograph of these combined objects, as shown in the figure below (Fig 101) and with this, she said:



“Today I tried hooking the jewellery onto my key rings for few hours. I felt a real closeness or a feeling of mine now that it fills a space as one of my keys.”



Fig 101. Prototype jewellery hooked up in participant's keyring - sent by a participant  
Fig 102. Prototype jewellery and coins - sent by a participant

As it can be seen in her report, her use of the term “feeling of mine” identifies that the act, of making the jewellery become part of her personal possessions engenders a feeling of ownership towards the ring and closes a gap between the object and the person. The participant's use of the term “feeling of mine” in her feedback may be similar to the way in which Koreans commonly refer to their lovers as “*Ne-Keo*”(“my thing”) or “*Ne-sa-ram*” (“my person”) to show their affection towards them and to bring the person into their territory. The term she used is a literal translation of Korean into English, which may be interpreted as a feeling of plain ownership but can also include the feeling of affection, when understood in Korean. She also reported that she had kept the jewellery in her pocket with her coins for a few hours but this did not trigger a similar feeling as it did with the hooking of it to the bundle of keys. However, she took a photograph of the jewellery (Fig 102) with the spare change found in her pocket and said that she enjoyed the clinking sound of the jewellery and the coins bumping together in her pocket.



Fig 103-105. Images of prototype jewellery sent by a participant

Another notable experience, reported by a participant, was the time spent in contemplation with the prototype jewellery. She mentioned that she felt closer to the jewellery since it



gave her time to consider issues that may have ordinarily been ignored if it was not for the jewellery. In her report, she commented that she enjoyed spending time considering and making comparisons between a man-made object that resembles the environment and the environment itself. As can be seen in the figure above (Fig 103-105), this contemplation is illustrated through her juxtaposing the ring alongside a leaf, and also by the photographs that set it with grass in the background. From this report, it can be asserted that the element of sharing a moment of contemplation has an effect on engendering emotional response. Furthermore, it is asserted that the resemblance of the environment within the jewellery may have brought out the participant's positive emotion, as according to Zelenski and Nisbet's (2014), exposure to nature promotes pleasant moods and "natural images promote prosocial aspirations and generosity" (Weinstein, Przybylski & Ryan, 2009).

Looking through the participants' reports, this research asserts that object attachment occurs through a combination of many complicated interactions and experiences. It is difficult to make an emotionally attached object just with the sole use of the transformation; it also needs supporting elements such as an interaction that involves a feeling of ownership and considerations on the physical shape of the object.

## 4.4.2 Transformation and emotional attachment

This section examines the effects of the transformation of silver material in respect to emotional attachment based on the diary reports written by the participants and through observing the transformation in the prototype jewellery. A detailed analysis of the design of the jewellery is made by examining the each piece of prototype jewellery. (It is based on the information outlined in Chapter 4.2)

### Transformational jewellery using different alloys of silver

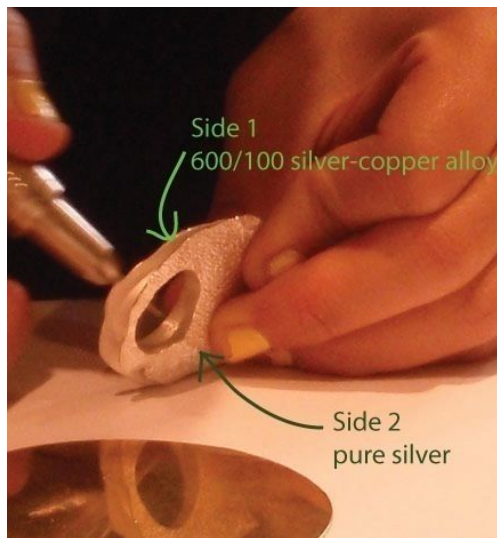


Fig 106. Explanation of Prototype jewellery, (pure silver and 600/100 silver-copper alloy)

The overall evaluation about the first piece of jewellery that used two different silver alloys, was that the oxidation of silver material is not noticeable enough to be perceived, which implies that the problem is in the placing of the pure silver material. The pure silver was used in the jewellery to provide a reference point and a contrasting figure for the change to be more noticeable, however placing it on the opposite side (as it can be seen in figure 106) made the comparison ineffective and worthless, as it did not provide a proper reference point in detecting the subtle changes on the silver-copper alloy side of the jewellery.

Therefore, the pure silver side needs to be placed directly beside the silver-copper material in juxtaposition rather than being hidden on the back of silver-copper, in order to make the transformation more noticeable. Another element that needs to be pointed out is that the oxidation, (occurring from the constant touch of the wearers), mostly settled on the cracks of the textures and not greatly upon the projected parts of the surface. From observing the prototype jewellery and reflecting upon the participant's interaction with it, it has been identified that rough surfaces are not suitable in this type of transformation, since it needs an even change in colour for it in order to be more perceivable.

## Transformation jewellery using sterling silver and static material of stainless steel



Fig 107. Comparison of prototype jewellerys

The second prototype jewellery, which used stainless steel and sterling silver was effective at visualising the transformation of silver. As it can be seen in the figure above (Fig 107), by comparing a piece of jewellery that was not worn (left), the transformation of the prototype jewellery (right) was successful in making a clear colour difference to the surface of the silver material and became a similar colour to the stainless steel after the four weeks of the experiment. However, it has been noted by a participant that the property of stainless steel material feels distinctive when compared to the silver material and it is difficult to perceive a similarity between the two, even after the oxidation had occurred and darkened the silver material to become a similar colour to the stainless steel. It is analysed that the geometric shape and smooth surface of the stainless steel material created a contradictory form to the silver material that involved a more organic shape and surface. With this response from the participant, it is proposed, based on the analysis, that the material, which acts as a reference point or a contrasting figure (stainless steel), needs to have similar shape and texture as the transformational figure (silver).

## Transformational jewellery that uses sterling silver and sulphur containing material (felt)



Fig 108. Prototype jewellery - contaminated

An unexpected response was gained from the participant who had worn the prototype jewellery that involved the use of silver and sulphur containing material of felt. Initially, the felt material was used in the transformation of the jewellery to heighten and accelerate the rate of oxidation, but instead, the material attracted the participant's attention even more than the silver oxidation by "wearing out" and "contaminating" its own surface. As it can be seen in the figure above (Fig 108), the felt material distracted attention from the focus upon the subtle transformation of silver material with its property of being easily contaminated. In the diary report, the participant wrote:

"I have recognised the passing of time through the four weeks of the experiment by seeing the stains that have been made on the green material. I think an emotional bond with objects is a funny thing because at first, I was attracted to this jewellery by its colour, shape and its particular characteristics but now, after spending time with / wearing the jewellery, I feel attached to the jewellery by seeing the worn out surface of the material. The wearing away and fading away of the colour is a proof of our time together, and such traces in jewellery has slowly made an attachment between the jewellery and me, moving from 'an object out of my boundary', to 'my object' and to be 'part of my life'."

As evidenced in her report, the subtle transformation of the felt material, although it was not deliberately constructed by the maker, has the potential to engender an emotional response. The transformation of the jewellery operated in a different direction than it was intended, but the use of the felt material opened up new possibilities in the design of the jewellery by demonstrating that the use of other materials, which are not restricted to precious materials, have the potential to engender emotional attachment. This also provides a firm foundation to the potential of using a perceived negative transformation, such as contamination or wear away, to engender a positive emotional response.

#### Transformational jewellery that uses oxidised silver



Fig 109. Prototype jewellery - worn out

The examination of the "used" prototype jewellery after the experiment, showed that the transformation (using pre-oxidised silver) operated well in revealing the white silver colour

underneath. It was much less than expected, but as can be seen in the above figure (Fig 109), the projected parts of the ring (the circled areas) have slowly revealed its white colour of silver and the participant had also written about it in the diary report. However, such transformation did not achieve the effect of emotional attachment, since the participant wrote that she was worried about the changes that were made on the jewellery. This participant was not aware that the transformation was deliberately constructed as it had not been made clear to her at the beginning of the experiment and so she was concerned that she had mishandled the jewellery. Through such responses, (similar to those generated by the transformational jewellery that used different silver alloys), such transformation of using pre-oxidised silver also needs to be carefully structured in the jewellery form, in order to give a notion that the transformation is deliberately constructed in the jewellery by the maker.

Apart from the comments on each of the jewellery pieces, the overall feedback from the participants on the jewellery is that they felt intimate towards the jewellery, manifested in using terms such as “resemble me”, “a part of me”; and “be in the same temperature as me”. There may be some differences between the participants in regard to the scale or the type of bond, but at the last post-experiment discussion session, they agreed that they had a feeling of emptiness and a sad feeling that their relationship with the jewellery had come to an end. However, they also mentioned that the sharp edges and heavy weight of the prototype jewellery felt unpleasant at times when they did not feel well; and that they felt distressed on occasions when other people kept glancing at the aggressive shape on the hands; and that it became bothersome when holding heavy bags. Seeing how the participants managed to make an intimate relationship with the jewellery, regardless of these negative aspects, provides information that emotional attachment does not necessarily have a direct relation to forms that cause discomfort but does need to be avoided as they may interfere with a long-term emotional attachment.

This interim inspection of the transformation of the jewellery identified many critical elements that need to be considered in making transformational jewellery for emotional attachment. It identified practical information about material, shape, form and texture of the jewellery in relation to transformation and emotional attachment; and other user-experiences that had not been considered, such as contemplating; noticing of material temperature; and correlating with other objects that are around the jewellery. From this, several substantial aspects are taken forward and advanced in the following section of the research. It takes forward and advances the use of silver material when demonstrating the findings, especially on the use of “different alloys” and “pre-oxidised silver”. This research advances the focus on materials that may not necessarily be silver by noticing the potential in the felt material

which was intended to accelerate the oxidation of silver. Furthermore, it is considered that the tree-bark textures and the use of “environmental” or “nature-related” forms in the prototype jewellery has the potential to be advanced since it was these elements which stimulated a dialogue between the wearer and the jewellery; and provoked a contemplation. However, this research makes negative view on the use of other metal materials as reference point for the change in silver oxidation, such as the use of stainless steel; since the two have distinctive material quality. These analyses are re-interpreted in the next section, where the final findings of this research are stated and demonstrated into practice works of jewellery.

## Chapter 5. Findings and applied practice

This section distills the findings of this research by reflecting upon the analysis from both the literature review and the outcomes of the two experiments.

This research aims to identify the characteristics of transformation and how it is constructed in jewellery in order to engender emotional attachment. The first part of this chapter therefore identifies the characteristics of transformation in respect to the questions that have been posed at the beginning of the research, while the latter part of the chapter presents two sets of practical works as conclusions that demonstrate these findings as forms of jewellery. The account and descriptions of these concluding practical works, follow a trace of the processes used when designing and making of the jewellery, and are made in order to demonstrate the effects upon the newly developed concept of transformation with reference to craft practice, and to evaluate how this concept affects the wearer's emotional attachment in everyday life.

## 5.1 Findings and characteristics of transformation



This research was a journey which involved finding the characteristics of transformation that engender emotional attachment, and this has been developed by responding to the initial research question on the potential of the subtle and slow characteristics of transformation. This research has undergone several stages of both theoretical research and practical experiments to develop the definition of transformation, and to find ways to apply such knowledge gained from these experiments into practical works of jewellery.

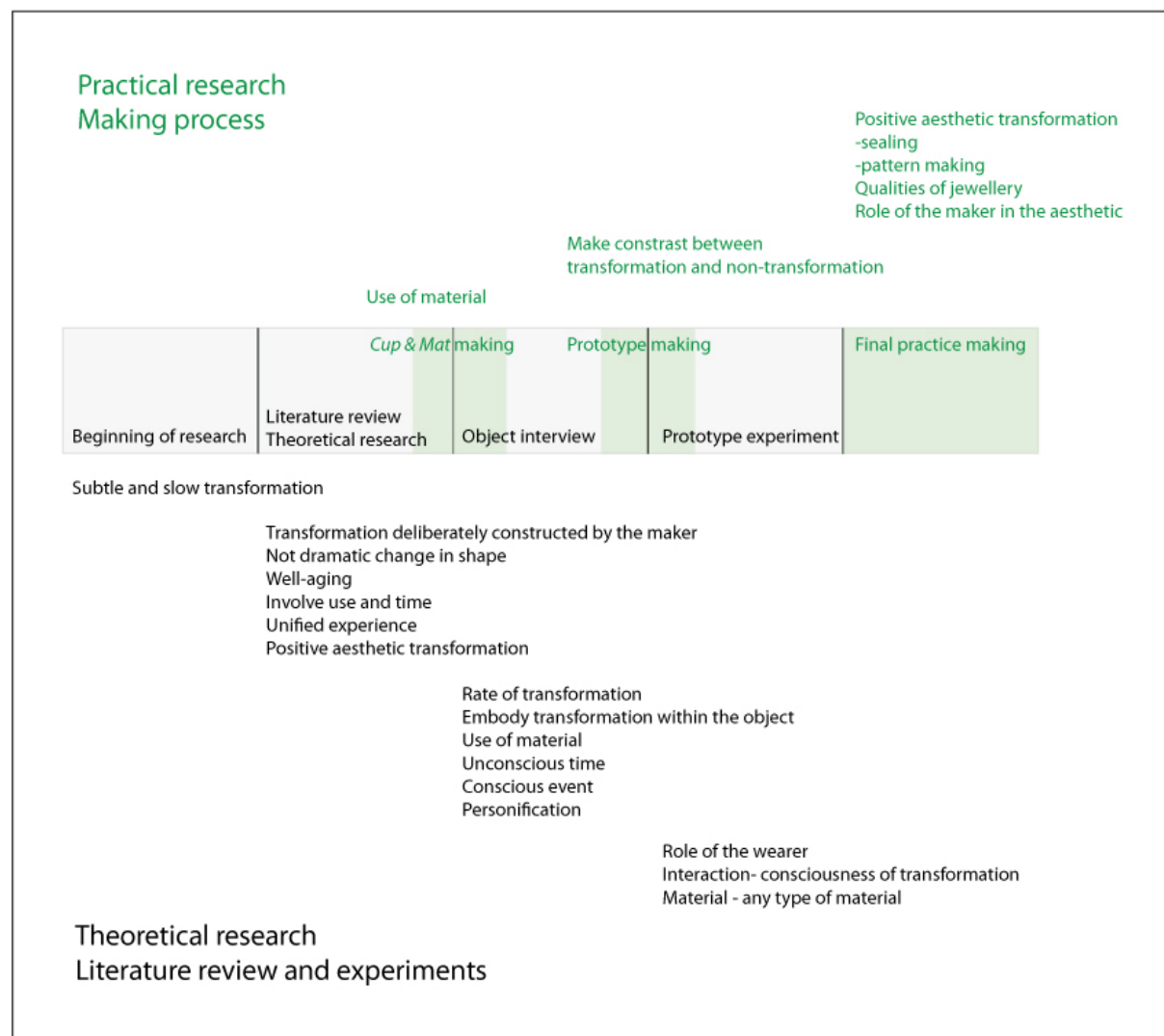


Fig 110. Development chart of the characteristics of transformational jewellery

The figure above (Fig 110) explains the development of the characteristics of transformation that have been generated from each stage of the research into two sections, one of theory the other practice. These two sections are combined to structure the definition of transformation of this research.

The bottom black coloured texts show the development of the definition gathered from the theoretical research and experiments. They are objective characteristics of transformation,

which have been drawn from the literature reviews and analysis of works by other researchers and practitioners; and from the responses to the conducted experiments. This part consists of the theoretical characteristics of transformation that have not been interpreted into practical works but have the potential to be developed further, such as “unified experience”, “positive aesthetics”, and “embodying the transformation within the object”.

The top green coloured text shows the development of transformation that has been derived from the making process of the practical experiment. This is concerned with the knowledge gained from the process of converting the characteristics of transformation into practical works of jewellery. Distinctive from the findings of research and experiments, these are subjective findings that are based upon the author’s experiential and tacit knowledge of material properties and expertise in the making. For example, the use of the mutable material - wax, in constructing the transformation in the *Cup & Mat*, and the use of contrast, to reveal the subtle transformation in the prototype jewellery, are findings that have arisen based upon the author’s tacit knowledge regarding material properties and foreseeing the outcomes of interventions with these materials.

## Four elements of transformation

Based on these findings, the four significant elements that construct the definition of transformational jewellery are elaborated upon. The explanation of these elements offers a far clearer understanding of how the objective findings, from the research and experiments; and the subjective findings from the making process, come together to define the transformation of this research.

### The rate of transformation (slow and subtle traces of time)

This research asserts that the slow and subtle rate of transformation, that has been initially determined at the beginning of the research, is considered to be an important characteristic of transformational jewellery that engenders a wearer’s emotional attachment. It is a smooth and seamless change that is deliberately constructed within an object by the maker and is similar to that which cognitive scientist Donald A. Norman labels as “just noticeable difference” or “JND”. (refer to Chapter 2.3.1) The potential of this characteristic to engender emotional attachment is evident in the example of the “fine gold wedding ring”, which was exemplified by one of the interviewees in the object interview (Chapter 3). The interviewee described how the slow and subtle transformation that appeared on the surface

of the ring made her emotionally attached to the ring because it symbolised the passing of time together with her husband and gave her a “unified experience”. (Refer to Chapter 2.3.1) Furthermore, it has been discovered during the analysis of the two experiments, that it is important for the wearer to be aware of this transformation or for the maker to deliver the message in the design to inform the wearer that the transformation is deliberately constructed in the jewellery, otherwise, a wearer’s negative response is likely to be engendered. This had been evidenced by the following comparison between the examples of the two wearers. The wearer of the “fine gold wedding ring”, who had been informed about the transformational characteristics of the ring, had felt an intimate emotion towards the ring. However, the wearer of the prototype jewellery (Transformational jewellery that uses oxidised silver – refer to p. 94) on the other hand, reported being anxious about the change that was noticed on the jewellery, as she had not been previously informed to expect such a change. Therefore, it is important that the message about the deliberateness of the transformation is included in constructing the transformation in the jewellery, for example, by placing a non-transformational figure or material alongside to the transformational material as a reference point.

### Embody transformation in the object

This research asserts that people have less emotional responses towards those things which deteriorate completely and instantly, than towards an object in which the transformation embodies the passing of time within the object. Therefore, it is important to embody the transformation within the object in order to effect an emotional attachment. This is different from the transformation where the form itself deteriorates, such as the *Wear-off ring* by Miriam Verbeek (refer to Chapter 2.2.2) or *Chalk Chain* by Dinie Besems (refer to Chapter 2.3.3), in which the transformation is focused upon the “wearing off”. Rather, it is a type of transformation that is acquired in the form of the object. For example, it is similar to the set of ceramic plates made by Simon Heijdens, (refer to Chapter 2.3.1) which display small crack lines on its white and undecorated surfaces as they are used, or the recording of happy moments of people chinking glasses in Kai Eckoldt and Tobias Ende’s *Brooch*. The examples given in the category of “Conscious event” in Chapter 3.3 about a ring with a scratch that reminds the wearer of finding it after it had been lost in snow while skiing, or about a bag with a scratch made by a cat are examples of such transformations. This characteristic of transformation that embodies the change within the object is a significant element to consider when engendering a user’s emotional attachment, because as evidenced in these examples, the embodying, recording or storing of personal emotional experiences within the jewellery has great potential in creating an intimate object since the

wearer can revisit their past times through the jewellery, which becomes a witness to their past life.

### Positive aesthetic transformation

This research asserts that a positive aesthetic of transformation needs to be developed with respect to the design of transformational jewellery, since it is difficult to engender a wearer's emotional attachment when the negative aspects of "age, decay, decline, deteriorate, wane, decompose and get old" (Saito, 2010) are depicted in the transformation. Therefore, it is important to manoeuvre the negativeness of the transformation into positive notions of "mature, ripen, develop, mellow and season" (Saito, 2010), when constructing the transformation in the object, as such positive aesthetics have the potential to arouse emotional attachment. This is similar to the design of the circular patterns that are constructed on the surface of the *Stain teacup* made by Bethan Laura Wood or the floral pattern cracks that are constructed on ceramic plates made by Simon Heijdens. (Refer to Chapter 2.3.1) When these patterns are constructed as part of the transformation, they serve to give the object a new look, similar to a couch made by Sigrid Smit that has been explained in Chapter 2.3.3. Similar to how the invisible, stitched patterns are revealed through use, as a way of renewing itself, the patterns on the jewellery make positive transformation through the passing of time and use.

The importance of such a need for the positive aesthetic in the transformation has arisen from one of the responses from the object interview about her emotional attached object of the "coral necklace", which reduced in size as it was worn-away over time. (Refer to Chapter 3.3) According to the interviewee, it was the notion of the necklace being a lucky charm that made the attachment, and not by seeing how it had worn-away, as she felt "upset" about how the necklace had become so small in size. With such evidence, this research asserts that a transformation that changes in time has both a positive and a negative effect on the emotional attachment, depending on how it is constructed by the maker.

Regarding the positive aesthetics of transformation that embody time and use, this research highlights the importance of the use and combination of materials, as it corresponds to "well-ageing" of materials. The maker needs to consider and foresee the change that is made on the surface of the material; and also requires a clear understanding of the material for the transformation to embody time and use in a positive way. The material titled *Natural Footprint* (Materia, 2010), which is exemplified in Chapter 2.3.2, is a good example of this. It uses a combinational use of photocatalytic cement and laser-cut plywood to construct a positive transformation that leaves permanent traces of passing time upon the concrete

surface. From this, it is asserted that there is scope for further research to be done by making links to the material field in the future, but which will not be covered in this research.

### The role of the user (wearer) in the transformation

Another important element to be considered and highlighted is the wearer's role in constructing the transformation. This research asserts that the user's role in enacting the transformation is important in forming an emotional attachment between the two. This reflects the "halfway products" mentioned by Fuad-luke (2009) (refer to Chapter 2.2.2 Alteration and creativity), in which the user embeds their own creativity and stories in the process of finishing the product in order to embody a personal narrative and memory that makes the work distinctive from others. The focus on the wearer's role also reflects the "IKEA Effect" explained by Norton, Mochon and Ariely (2012) (refer to Alteration and creativity in Chapter 2.2.2) about the gaining of emotional value through creativity and labour. Such alterity within the object that is enacted by user's interaction has the potential to make a strong and long lasting relationship between the user and the object. For example, such transformation is perceived in the work of Ted Noten's *Chew Your Own Brooch*. (Refer to Alteration and creativity in Chapter 2.2.2) It is the wearer's act of chewing and forming the material, which alters or personalises the jewellery; and then makes the wearer form a feeling of intimacy towards the jewellery. Such an effect of the wearer's role is evident in the example of the "fine gold wedding ring" (Chapter 3), as well. The wearer's attachment towards the ring would not be the same, if the transformation had been generated on its own or made by someone else, because according to Chapman (2005), the relationship between the object and the user naturally intensifies as the users of the object are designed into the narrative of the object as co-producers, and not simply as inert, passive witnesses of the change.

Collectively, the transformational jewellery of this research is defined as:

A jewellery that is deliberately constructed to make subtle and slow changes within its material surface in a positive manner, and in which change is effected through the passing of time and is enacted by the wearer's act of wearing it. A further explanation on how this theoretical definition is materialised as practice forms is provided in the subsequent sections.

## 5.2 Demonstration of the findings

The following sections present the demonstration of the research findings manifested in two sets of jewellery pieces. These form exemplars of the design and making process of the jewellery, informed by the definition of transformation that has been developed in this research, and here converted into practice works. Both sets of jewellery demonstrate the characteristics of transformation by using the qualities of wearing, fastening on/off and movement in jewellery in response to the research question about finding the transformation pertinent to jewellery. The use of such jewellery qualities provides answers to the research question regarding the investigation of a transformation that is pertinent to jewellery.

The two sets of jewellery are similar in that both take on the organic shapes of tree branches and the patterns of leaf veins or tree bark to act as metaphors of a living object. Among the various organic or nature related shapes, branch-like figures or twig shapes are used in the jewellery. The branch-like shapes are the author's personal interpretation of the nature related shapes, as they symbolise the life and vitality of a tree by resembling the veins of leaves and the budding of trees. When transformation is founded upon such shapes and texture, the jewellery is able to offer a simulacrum of life and growth that supports a development of the wearer's emotional attachment. Furthermore, as is evident in the responses of the participants in the prototype experiment (Chapter 4.4), and from Zelenski and Nisbet's research (2014), such nature related shapes have the potential to engender an emotional attachment by evoking people's feelings of happiness and connectedness.

The two sets differ in the nature of wearer's expected interaction and the role of the wearer in enacting the transformation. In the first set, a more passive interaction of the wearer is involved in the transformation, so that the maker has more control over how the transformation is made. In the second set, on the other hand, the wearer takes on a more active part in the transformation, and has more control over the transformation that makes the jewellery become more personalised to the wearer. The transformation in the second set is designed so that it traces distinctive movements of the wearer and provides more space for the wearer in the making of the transformation.

### 5.2.1 Transformational Jewellery - Set 1

The four pieces of transformational jewellery of this set demonstrate a way of converting the transformation that has been developed in this research into practical works. The transformation of this jewellery is focused upon bringing positive effects of transformation by offering the impression of well-ageing. The transformation is constructed so that patterns are revealed through the passing of time through the act of wearing the jewellery, by sealing parts of the material surface or using a non-transformational material. It is similar to the way in which Bethan Laura Wood constructed non-transformational patterns on the surface of the *Stain teacup* (refer to Chapter 2.3.2) by sealing them with enamel, as a technique to reveal the darkening of colour more clearly. This is an extended work of the prototype jewellery that was produced in Chapter 4, which focused on using the material properties of silver alloys to make the transformational and non-transformational surfaces.

This prototype involves a passive interaction of the wearer and the category of “Unconscious time” that was analysed from the object interview in Chapter 3. The wearer of this set of jewellery is unaware of making changes on their jewellery, because it is constructed so that as time passes and the number of wearings increases, stains from the wearer’s body or moisture from the surrounding environment enact the change on its surface.

One of the developments that is made in this set of jewellery is that the two transformational and non-transformational surfaces are juxtaposed with each other in order to intensify the visual experience of transformation, whereas in the prototype jewellery, they were placed back to back one another. This advancement in the design of the jewellery is made because the way of placing the two materials back to back one another in the prototype jewellery did not create enough contrast for the wearers to notice the transformation within the silver alloy. A positive aesthetics of transformation is achievable through this advancement, since the maker can construct and design the patterns that appear on the surface of the jewellery, and thus transformation is enacted on the jewellery’s surface. Furthermore, this method is able to deliver a message about how the transformation is deliberately constructed as part of the jewellery. This is of course an important element; transformation may too readily involve negative aesthetics of age and contamination that does not involve the wearer’s consciousness. As previously mentioned in the findings (Chapter 5.1), such transformations may prompt the wearer negative or anxious feelings as they are not aware of the change. Therefore, in this set of jewellery, the maker takes on a more dominant role than the wearer in deciding the patterns on the jewellery and how it is developed on the surface of the jewellery in respect to the wearer’s time and use.

Consequently, the wearer of the jewellery has a relatively increased passive role in making the transformation since the outcome of the transformation is same for every wearer.

Another development that is made in this set of jewellery is the inclusion of various materials other than silver. Four different materials: silver, wood, white porcelain and paper are explored in this set of jewellery and each of the sections provides information about the small material tests that are conducted prior to the making of the jewellery. The material tests are carried out to explore how the transformational and the non-transformational parts are constructed within the surface of the material. Such an investigation provides the widening of the aesthetics of jewellery discourse, as the contemporary jewellery movement has moved away from the use of traditional materials of gold and silver; and found value in other materials and also discovered other embodiments of meaning within them.

According to Adamson (2007), craft always entails an encounter with the properties of a specific material and involves the direct engagement with specific material properties, for the same reasons the use of materials in constructing transformations and the application of this tacit knowledge about material properties are developed from the author's own craft background. This is evident in the use of wax (*Cup & Mat* in Chapter 3) and silver (prototype jewellery in Chapter 4) in constructing the transformation. These materials have been chosen, since as a metalsmith practitioner, the author knows from regular use and experience that they have the properties needed to demonstrate the transformation. The jewellery of this set has extended the use of materials by constructing the transformation with wood, white porcelain and paper. The material choices are based upon the findings regarding the transformational properties of the materials and within the range of personal experiences and cultural background. The Korean craft education is a medium-based discipline and from the late 1990's and until now, many of the universities taught two or more skills of metal, ceramics, wood and textiles to the first year students who then choose their major after experiencing them. As the author is based in such personal experience and education, there is an understanding that the four materials chosen are suitable materials that can be harnessed to demonstrate and construct the transformation.



## *Work 1-1*



Fig 111. *Work 1-1*, silver 999, silver and brass alloy, stainless steel

## Explanation of *Work 1-1*

The *Work 1-1* demonstrates how different alloys of silver can be used to construct transformation within a piece of jewellery. The silver material is appropriate material for making transformational jewellery as it has the property to transform its colour when it is in contact with the body. As can be seen in the photograph of the work (Fig 111), (which has been taken after the work has been exposed to the air and after multiple wearings), the faint lines composed of the silver-brass alloy, are starting to show up on the surface of the two branch-like figures that are made with pure silver. The transformation is designed to use pure silver, which changes colour only “slightly and less readily” (Pelati, 2010), and which acts as a reference point and a contrasting figure, thus revealing the line patterns of the transformational material of silver-brass alloy and allowing the wearer to notice the change in colour. The darkening of the line patterns are the effects of silver-oxidation and this progresses further as it makes contact with the body and is exposed to the air. (Refer to Chapter 4.2 for more information on the material property of silver.) The other parts of the jewellery are composed of stainless steel wires that have a non-transformational quality, in order to focus on the oxidation of the silver figures.

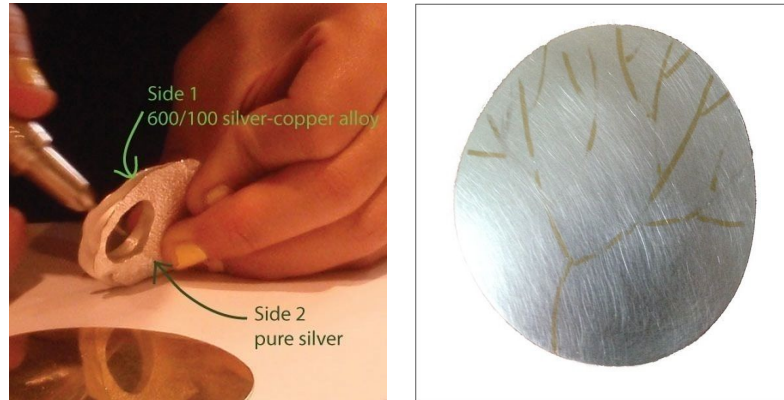


Fig 112. Explanation of prototype jewellery  
Fig 113. Test piece of silver alloy

The use of these materials is an advanced version of the prototype jewellery in Chapter 4. One of the improvements is made upon the way of juxtaposing the two different alloys of silver next to each other. As it can be seen in the figure above (Fig 112), previously in the prototype jewellery, the two materials were placed back to back, which made it difficult for the wearer to detect and compare the subtle transformation that occurred only on one side. Therefore, in this *Work 1-1*, the two materials are placed side by side so that the wearer can perceive the subtle phases of change in the jewellery.

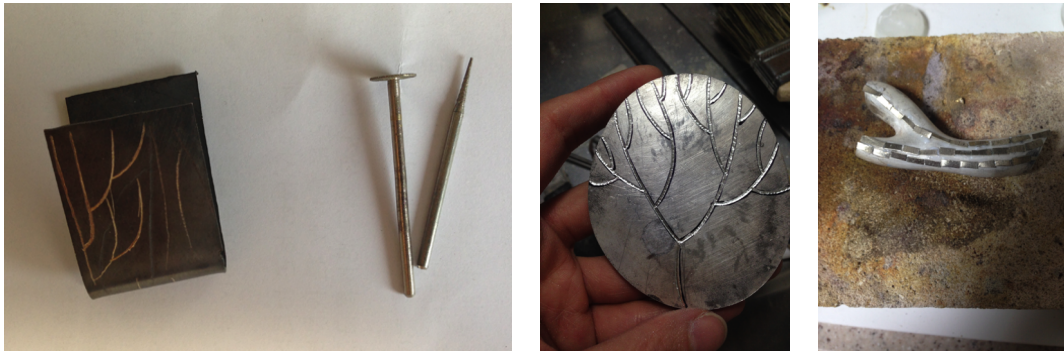


Fig 114-115. Images of making process of the test piece  
 Fig 116. Making process of *Work 1-1*

Another improvement is made in the percentage of silver alloy material and its contents. Previously, in the prototype jewellery, the transformational material of silver alloy consisted of silver and copper, but in this *Work 1-1*, the copper is replaced with brass. Such a modification was made because silver-brass alloy is easier to work with when making patterns on the pure silver plane. As is seen in the photograph of the tools and the making process of the test piece (Fig 114-115), the way in which the two different alloys of silver were joined together was by melting the silver-brass alloy into the engraved parts of the pure silver sheet. Since the melting point of the silver-brass alloy is lower than pure silver, when heating up the two materials with a torch, the silver alloy runs into the cracks of the pure silver sheet, acting like solder. As seen in the test piece (Fig 113), after polishing its surface, the two materials come together as one single piece to reveal the pattern.

## Work 1-2



Fig 117. *Work 1-2*, cherry wood, wood varnish

## Explanation of *Work 1-2*

The *Work 1-2* demonstrates the constructing of the transformation into a piece of jewellery using wood. Wood is an appropriate material to construct the transformation, since it easily absorbs dirt from the surrounding atmosphere and is effective at engendering emotional attachment by giving a positive notion of “maturing” or “mellowing” (Saito, 2010) in the transformation. As seen in the figure above (Fig 117), the transformation in *Work 1-2* is constructed in the two wooden, branch-like figures. It is constructed so that, as the wood material darkens its colour in response to the multiple acts of wearing, it reveals the non-transformational line patterns that are sealed with wood varnish. The patterns on the figures are not clearly noticeable by the wearer before the change is enacted, however, it becomes more noticeable as it develops to embody the passing of time and use by the wearer. They are also used to give a more branch-like feel to the wooden forms and a resemblance of the environment as it darkens its colour to reveal the hidden patterns.



Fig 118. Test piece of wood material

Fig 119. Wood varnish

Fig 120-121. Making process of the test piece

In order to use wood to construct the transformation in the jewellery, a test piece (Fig 118) was made prior to making *Work 1-2*. Considering the fact that wood has the potential to show transformation through use, the test was done to find a way for it to “not” transform, so that it becomes a reference point for the change in colour of the wood and to add further aesthetic quality to the jewellery with patterns. The chemical liquid wood varnish (Fig 119), which is a translucent sealing, was used to achieve such an effect by sealing the parts that

have been engraved. As seen in figure (Fig 120-121), the opaque white colour wood stain is applied on top of the engraved patterns of the wood to protect them from transforming. The test piece (Fig 118) shows how the stain forms an even surface with the wood after being absorbed and filed down.

## Work 1-3



Fig 122. *Work 1-3*, white porcelain, stainless steel



## Explanation of *Work 1-3*

The *Work 1-3* demonstrates how transformation in jewellery can be constructed when using white porcelain. White porcelain, without the enamel coating or any other finish, is considered to be an inappropriate material to use to engender an emotional attachment, since it can show negative aesthetics of dirtiness on its flawless surface through time and use. However, this research applies such material properties in the transformation and converts it into positive aesthetics. The transformation in *Work 1-3* is constructed so that patterns appear on the surface of the white branch-like porcelain figures, as they begin to absorb dirt. It is done through the application of transparent enamel on the patterns that are engraved, which stops these areas from absorbing dirt. It is intended that the stains on the exposed white porcelain part of the figures do not appear as a negative aesthetics to the wearer and become part of making the positive aesthetics in revealing the patterns. The other elements of the necklace are made up of stainless steel tubes to give a contrasting effect to the white porcelain figures. It is used in order to give a more life-like impression to the branch-like figures of the white porcelain by placing a material that has a more seamless and a frigid material property.



Fig 123-124. Test piece of porcelain material

Fig 125. Making process of test piece

In order to use porcelain to construct the transformation in the jewellery, a test piece (Fig 123) was made prior to making *Work 1-3*. By examining how an exposed white porcelain material, without the enamel, has potential to make transformation (Fig 124), the test piece was made to explore ways in which to make transformational and non-transformational surfaces on one plane. This was done by applying the enamel on parts of the surface and studying how that creates a contrast to the exposed surface. In order to make the test piece, patterns were engraved in a porcelain sheet (Fig 125) and enamel was applied in the cracks before being fired in a kiln. The test piece (Fig 123) shows how the enamelled



patterns are revealed as the exposed parts of the surface become contaminated through the repetitive touch and the passing of time.

## Work 1-4

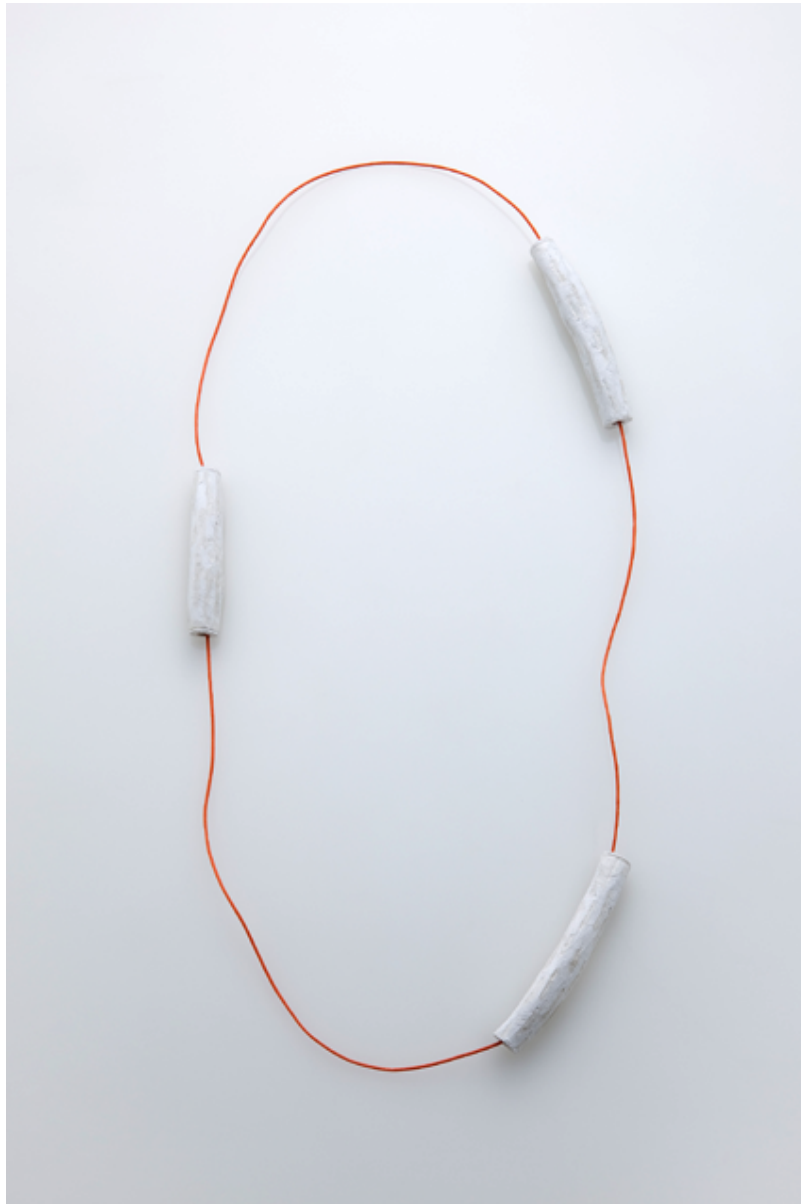


Fig 126. *Work 1-4*, Korean paper, wood stain finish, coloured string

## Explanation of *Work 1-4*

The *Work 1-4* demonstrates the construction of the transformation in a jewellery using paper. It is an appropriate material to construct the transformation since it easily absorbs dirt from the surrounding atmosphere with its material property and its white colour. Furthermore, as paper is commonly regarded as a material to make marks upon, it is an appropriate material to use in order to record traces of a wearer's use and the passage of time. As can be seen in the figure above, the transformation in *Work 1-4* is constructed on the three branch-like figures that are made with paper. As it is worn repetitively, the paper figures are designed to absorb dirt and stain from the body and to reveal line patterns by the darkening of its colour. The line patterns are made by engraving into the paper figures and applying wood varnish in its cracks, to seal and to prevent it from transforming.



Fig 127-130. Working process of *Work 1-4*

In order to shape the flat and thin pieces of paper into a three-dimensional form, a method derived from papier-mache was used. It is a method that glues together layers of paper on a supporting material so as to give shape to the form. In this jewellery, bent rubber hose was used as a former to support the figures so they take on branch-like shapes. To give the paper figures a more organic appearance, the rubber hose was bent whilst glueing the layers of paper (Fig 127) and removed from it before completely drying up so that it can be distorted. After the glue had completely dried, its surface was engraved with patterns and wood varnish was applied in the cracks. They were then filed down along with the paper surface to give an even finish.

## 5.2.2 Transformational Jewellery - Set 2

This section demonstrates another way of constructing the transformation developed in this research, in a set with three pieces of jewellery.

The transformation of this set of jewellery is constructed based on the category of “Conscious event” and “Personalisation”, which are two of the outcomes from the analysis of the object interview experiment in Chapter 3. Considering that the transformation of the first set of jewellery referred to the category of “Unconscious time” and is about change that is made involuntarily, the transformation constructed in this set is a more autonomous change that involves the wearer’s “Conscious event” and “Personalisation” of the jewellery. The transformation is similar to the scratch in the emotionally attached ring, exemplified by one of the interviewees in the object interview (Interview 3). The scratch on the ring reminds the possessor about the event of the ring being lost and found in a deep pile of snow and also about happy memories of skiing, which engender an intimate relationship between the jewellery and the wearer. The interactions that enact the transformation in this jewellery are not as intensive as that example, but they are continuous and subtle experiences with the jewellery. It is occasioned by the wearer’s repetitive movement whilst wearing the jewellery or the act of fastening on and off of the jewellery. As a consequence of such interactions, the jewellery gains the potential to become a wearer’s emotionally attached object by being “worked on, sculpted and personified over time” (Chapman, 2005, p. 116). The potential of such autonomous transformations in engendering emotional attachment is also evident in Chapman’s example of denim jeans:

“Jeans are like familiar old friends providing animated narrative to life - a repository of memories - mapping events as and when they occur. ...The character they acquire provides reflection of one’s own experiences, taking the relationship beyond user and used to creator and creature. Similar in philosophy to the way in which voice recognition software sculpts itself around the phonic idiosyncrasies peculiar to a particular user, jeans become tailored to the physical individualities of the wearer to become a part of them.” (Chapman, 2005, p. 116)

Similar to how the material property of the denim jean is used to improve quality in this quotation, this set of jewellery uses materials such as graphite, or rubber to convert such theory into the practice work. It is constructed so that these materials make changes on the surface of the jewellery in response to the wearer’s movements and the fastening/unfastening of the jewellery. It is similar to the use of chalk in the *Chalk chain* made by Dinie Besems (refer to Chapter 2.3.3) in that the “chalk” was used as to make marks on the clothing. However, it is important to emphasise that the characteristics of

transformation in this research is distinctive from Besem's jewellery in that the change is embodied within the jewellery, whereas the transformation of the *Chalk chain* is made away from the jewellery. The transformation of this research focuses on how the jewellery needs to preserve or to record the change within it so that the wearer can trace back their time by perceiving the change.

*Work 2-1*



Fig 131. *Work 2-1*, copper, white porcelain, graphite

## Explanation of *Work 2-1*

The transformation of this jewellery *Work 2-1* is constructed based on the range of the wearer's movement whilst wearing the jewellery. It uses a short cylindrical-shaped pieces of graphite (Fig 133), which has been cut off from a stick of graphite (Fig 132); and the material of white porcelain. The use of these materials record movements of the wearer as the graphite piece draws lines on the inner surface of the cone shaped white porcelain figure. The porcelain figure has two different surfaces; one that is enamelled to make a non-transformational surface and the other is an unenamelled white porcelain, to embody the transformation on it. It is produced in this way so that only the interior, un-enamelled part of the porcelain figure transforms to record the wearer's movement by operating as a white canvas and thus showing the black marks of the graphite upon it. The jewellery is designed so that distinctive patterns are created according to the respective movements of the wearer: strong and abbreviated lines are made in the instances when the wearer jumps up and down; and constant lines are made when it is worn during the wearer's normal everyday movements. The cutting plane of the cone figure is a deformed circle and not exactly symmetrical, as seen in the figure 135 and 136, it is shaped in this way so that uneven marks appear during the initial phase of the transformation. The uneven marks on the porcelain surface provide a space for the wearer to contemplate and understand the form of the jewellery, and which assist in making an intimate relationship between the two. This assertion is made by reflecting upon the participant's responses to the prototype jewellery; where she stated that she felt closer to the jewellery by having time to contemplate the jewellery and its surrounding environment. (Refer to Chapter 4.4.1, p.89-90) It is assumed that the wearer will keep looking inside the porcelain figure to examine the process of the transformation.

In order for the porcelain figure to take on this shape, the method of slip casting (Fig 134) was used. It was casted from the plaster mould and was then pressed before completely drying to give a slight distorted shape.

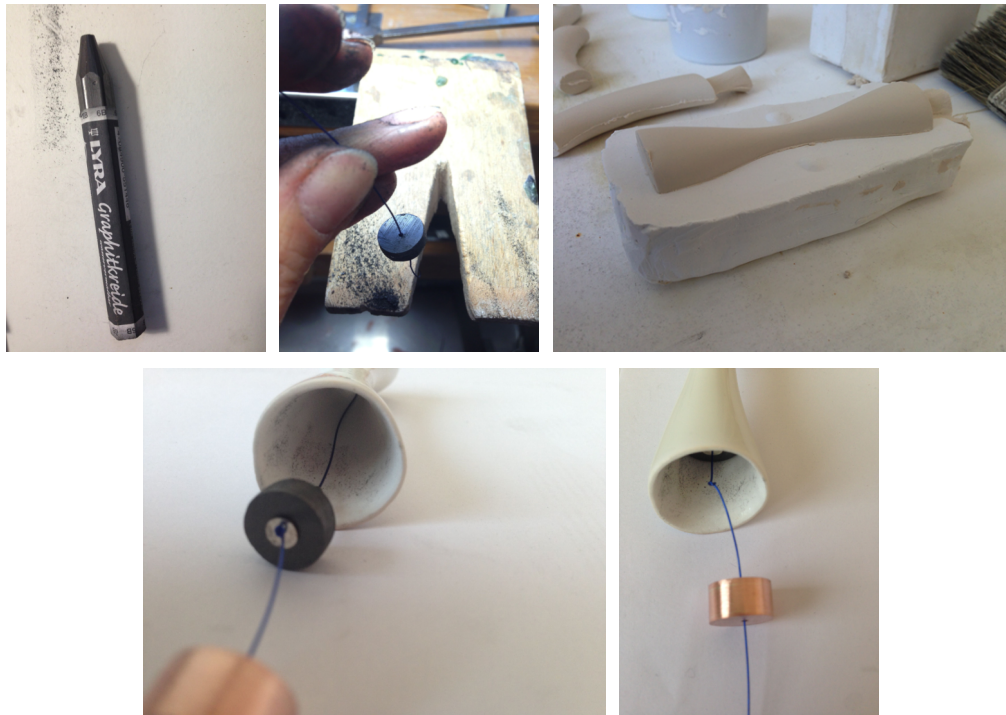


Fig 132. Graphite  
 Fig 133-134. Working process of *Work 2-1*  
 Fig 135-136. Close-up of *Work 2-1*

The jewellery is designed so that the circular shape of the graphite is placed inside the porcelain figure in order to avoid making marks on wearer's clothing, which may become annoying for some wearers. This is an important point to consider as the wearer's irritation could interfere with the engendering of their emotional attachment towards the jewellery. Also, the transformation is hidden inside the porcelain so that both the wearer and the viewer of the jewellery do not notice the transformation whilst it is worn on the body. Through this method, an intimate dialogue may be established between the jewellery and the wearer, in those instances when the wearer takes the jewellery off from their body after coming back home. Such transformations can engender an emotional bond between the jewellery and the wearer, since it depicts the wearer's movement and offers a reflection of the time they have spent together.

The black circular shapes that make up other parts of the necklace are made out of copper (Fig 136) which have been oxidised to make them look similar to the graphite figure. It has been designed in such a way in order to distinguish the transformational (porcelain figure) and the non-transformational figures (graphite and copper figures) of the jewellery. The perfect round forms of the graphite and copper figures act as a metaphor of a non-living thing; and the imperfect and delicate shape of the porcelain figure is designed to resemble a living thing through its organic aspects so that the wearer foresees a change, similar to how growth is expected in living things.



## Work 2-2



Fig 137. Work 2-2, silver 925, white porcelain, rubber

## Explanation of *Work 2-2*

The transformation of this jewellery is managed in two ways by using the actions of the wearer fastening and unfastening the jewellery and through the use of the materiality of silver oxidation.

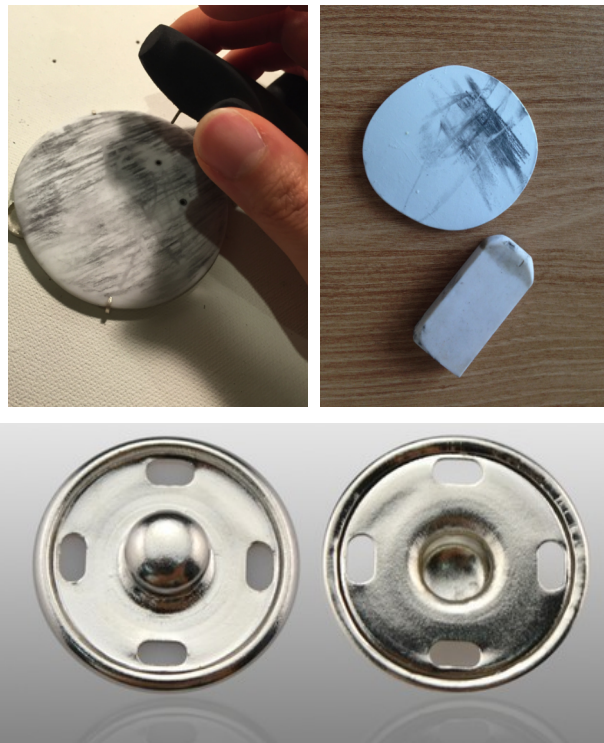


Fig 138. Close-up of *Work 2-2*

Fig 139. Pencil and eraser marks on white porcelain

Fig 140. Snap button (male and female parts)

A flat circular form of the white porcelain and the black branch-like figure, made out of rubber/eraser that are juxtaposed to one another are the main transformational element of the jewellery. They take on a role to fasten on and unfasten the jewellery, like snap buttons (Fig 140) by each having a positive or a negative part. As seen in the figure 138, two pointed parts of the black figure and the two holes of the porcelain figure are used to fasten the necklace together. They are combined so that the repetitive act of putting on and taking off the jewellery enacts change on the surface of the porcelain with the black rubber/eraser figure. The material property of the black rubber figure is to erase or smudge the marks that are initially made on the surface of the porcelain. Unlike the transformation that depicts the wearer's movement over a long period of time, the wearer is more aware of this transformation due to their involvement with it and also because the transformation instantly records the wearer's act.



Fig 141. Close-up of *Work 2-2*

The other transformational part of the jewellery uses the properties of silver, like the *Work 1-1*, to darken the surface of the silver figures over time and use. The two different shapes of the silver figures both take on the branch-like shapes: one is a hollow piece that resembles a real wood branch with the textures on the surface; and the other is a silhouette of the branch bent from a flat silver sheet.

The role of the wearer is an important part of this transformation since the changes on the surface are not only made through wearing the jewellery but are also caused by the wearer's act of putting on and taking off the jewellery piece. A greater emotional attachment is made through such a combination as the jewellery can depict both the conscious and unconscious awareness of time and use by the wearer. The conscious transformation made on the porcelain surfaces act as milestones of the wearer's time by reflecting their movement instantly, whereas the unconscious transformation made on the silver figures evolve slowly by depicting the passing of time. Consequently, these transformations allow for the contemplation of the wearer's life, and operate to engender an emotional bond toward the wearer.

## Work 2-3



Fig 142. *Work 2-3*, copper, Korean paper, graphite

## Explanation of *Work 2-3*

The transformation of *Work 2-3* is constructed by using the actions of the wearer fastening and unfastening the jewellery; and using the material qualities of paper and pencil. The white part of the jewellery is made by glueing layers of paper on top of each other and the black cylindrical figure on top has been cut out from a stick of graphite. Similar to the *Work 2-2*, the transformation in this jewellery occurs whilst the two elements of the graphite and the paper figures work to fasten and unfasten the jewellery, so that every time the wearer “puts on/takes off” the jewellery, the graphite stick makes marks on the white paper. The two pointed parts (Fig 144) that act to lock the graphite figure in place are implanted in the paper figure of the necklace.

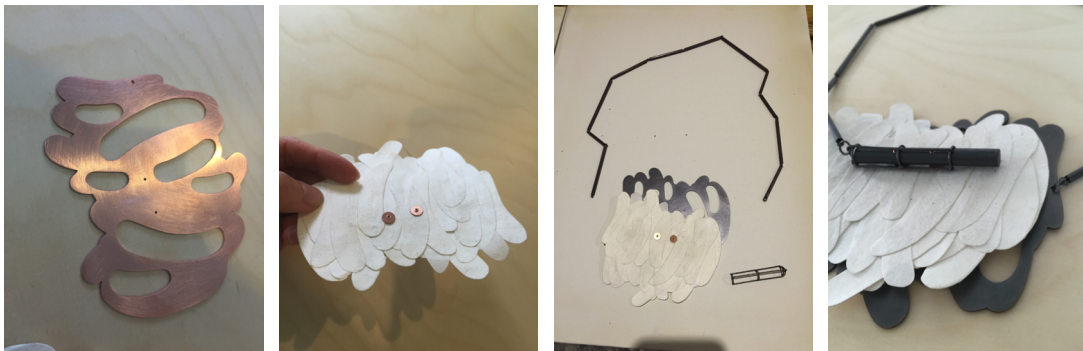


Fig 143-145. Working process of *Work 2-3*  
Fig 146. Close-up of *Work 2-3*

As can be seen in figure 146, black smears from the graphite have been developed on the white surface of the paper through several acts of testing. It is intended that more of the layers of the white paper are revealed as the graphite marks are made to their surface, because the layers of paper are metaphors for the building up of the wearer’s memories.

# Chapter 6.

## Conclusion

This research started with a personal curiosity about the life of a craft object after leaving the hands of the maker and being passed onto a user; and also an interest into the ways in which an emotional relationship is formed between the user and the object. This structured the research at its beginning and in its initial phase. I then took this further and aimed to identify how such emotional relationships can evoke certain behaviours of the user. The aim was to find a way to make use of an emotionally attached object in order to evoke a user's positive environmental behaviour. However, during the research process, I realised that this research had stepped too far forward in its neglect of the objective databases or research precedents about how an emotional relationship is formed between an object and its user. Accordingly, I shifted the direction of the research back to my fundamental interest; and focused on finding a way to make an emotionally attached object. Despite the fact that this research has made several diversions along the journey, the basis of the research has consistently been about the users and their interaction with the object, which explains why the role of the wearer in making the transformation and in engendering of emotional attachment dominates in this research.

## Reflection on the research

Looking back at my research, I realise that my position as a crafts person influenced my decisions about how this research was undertaken and how the methods were selected to draw out the findings. As a craftsperson, I navigated the research from a medium-based discipline and based this research on my understanding of the materials in developing the characteristics of the transformation. The use of the wax material in *Cup & Mat* (probing object); the silver material in the prototype jewellery and the various materials in the two sets of final practice works provide evidence of how my personal background has influenced the converting of an exploration of transformation into completed practice works. Furthermore, this notion is supported by the selection process of the methods to involve practice-based processes of making and experimentation; and how the demonstration of the findings includes medium-based practice works and my reflection on these. The expertise and tacit knowledge of the author has greatly influenced the development of the transformations produced in this research, and thus demonstrate how dependent this project is upon the particular discipline expertise of the design or craft researcher. Accordingly, as practice-based research, the practice not only formed part of the research methodology, and has been used to demonstrate the findings of the research, but it also directed and shaped the orientation of this research based upon the author's professional expertise and craft sensibilities.

## Thesis summary

This research has undertaken theoretical and design research alongside craft practice, in order to identify the characteristics of transformation in regard to its effect on emotional attachment, and to address the objectives and questions of this research.

The theoretical review of emotional design research, (and emotionally durable design in particular), provided a precedent understanding of the relationship between transformation and emotional attachment by identifying different approaches to the design of objects for emotional durability with the users. This understanding allowed the author to analyse the field of emotional and sentimental jewellery; and to identify their approach towards “History and memory”; “Interaction”; and “Alteration and creativity” in making emotional attachment with the wearer. It also provided a direction to the author’s initial hypothesis about the subtle and slow transformation by identifying concepts of “Traces of use over time” and “Positive transformation”.

This research has applied the object interview method to investigate and establish objective characteristics of transformation that effect emotional attachment, through the analysis of the existing emotionally attached objects. Through the use of this method, this research has identified three aspects of transformation: “Unconscious time”, “Conscious event” and “Personalisation”. Subsequently, this research conducted a design method of the prototype study in order to assess the effects upon one of the aspects of transformation developed in the previous experiment in real-life situations in regards to emotional attachment.

Moreover, as a practice-based research, this research applied craft practice in order to develop practical information about transformation and to broaden the author’s knowledge about the relationship between transformation and emotional attachment through the making process. This interdisciplinary approach, that combines the author’s craft sensibility and knowledge, along with the theoretical and research methods, produced explicit information on the material properties and the role of the maker and the wearer in the transformation. Therefore, this research is similar to Walker’s (2011) explanation of a practiced-based research, because it not only plays a role to expand knowledge and develop theory but transforms such knowledge and theory into material expressions; and in turn, the outcomes of these transformative activities can be reflected upon to inform theory.

As a consequence, based upon the initial hypothesis that the subtle and slow transformational jewellery has the potential to engender emotional attachment, this research



developed a comprehensive definition through the interdisciplinary approach of craft and design research. This research has developed “transformational jewellery” as a new category of object, by demonstrating transformation that is pertinent to jewellery and defining its term as: a jewellery that makes subtle and slow change within its material surface in a positive manner, and where the change is effected through the passing of time and enacted by the wearer’s act of wearing it.

## Findings of the research

This research has been a journey of investigation into a type of transformation, and attains its research aims through the identification of those characteristics of transformational jewellery that elicit a wearer’s emotional attachment. As a consequence of the review of the literature and context; and upon the two conducted experiments, this research has identified four main elements in constructing the transformation in the jewellery: “Slow and subtle traces of time”, “Embodiment of transformation in an object”, “Positive aesthetics in transformation”, and “Importance of the role of the user (wearer)”. (Explained in Chapter 5.1)

They include practical information on how the theoretical findings of transformation are manifested and materialised in practicable forms of jewellery with regards to its design, shape and materials. The application and demonstration of these findings into practicable works of jewellery are also defined as part of the findings of the research, since they provide answers to the research questions about the construction of the transformation pertinent to jewellery. The practice works also offer advancement of the aesthetics of the jewellery discourse by illustrating the use of various materials. This is an important element in contemporary jewellery, especially in the current state where contemporary jewellery discourse has moved away from the conventional use of precious materials such as silver and gold; and often uses materials as a tool or a medium to convey concepts of the maker. Furthermore, the two sets of final practice works identify and define both the role of the maker and the wearer in the transformation. In the first set, the role of the maker is highlighted by making specific patterns and treating the surface in a certain way to acquire a positive aesthetic by foreseeing the outcome of the transformation and understanding the material property of the jewellery. The second set highlights the role of the wearer by focusing on their bodily movement and their experiences with the jewellery in making the transformation and how these can heighten the attachment to the jewellery.

## Evaluation on methodology

The initial course of defining the specific characteristics of transformation was done by first identifying the jewellery research with regards to emotion and sentiment; and outlining the

domain of transformation based on theories of emotionally durable design research. The research then applied the object interview method to develop the characteristics of transformation from a user's point of view and to provide reflections about people's emotional possessions. In the latter phase of the research, the method of prototype experiment was employed, in order to apply the information generated in the previous experiment and to analyse and reflect upon the new data retrieved. The prototype experiment provided objective evaluations about the developed knowledge regarding the characteristics of transformation in relation to emotional attachment, and then verified them in a real-life situation. Furthermore, this method provided an opportunity for the researcher to contemplate how to convert the theoretical characteristics of transformation into a tactile form; and to consider the role of the maker and the wearer in the transformational jewellery by making the prototype jewellery.

This research has used an appropriate combination of the methods to gather information from various perspectives. The review of the context provided views and approaches developed by other researchers and practitioners, whilst the object interview and the prototype experiments allowed for the examination of the concept from the user's perspective. Moreover, the making process of the practice works induced and employed the author's tacit knowledge and understanding of the concept. Such involvement of various points of views drew out the objective findings and at the same time subjective outputs that makes this into promising research.

## Contribution to knowledge and new knowledge

Distinct from the three academic researches undertaken by three other researchers, Wallace, Parmar and Ahde-Deal, this research has progressed understanding with regard to the relationship between emotional attachment and jewellery by involving the element of transformation; and also has advanced the contemporary jewellery discourse, through the proposed definitions for the ambiguous terms of emotional and sentimental jewellery and by positioning the term emotional attachment within them. This research has also advanced the relationship between emotional attachment and transformation that has been acknowledged by the emotionally durable design study, by approaching it from a craft discipline and from a medium-based perspective. It involved the use of culturally based materials of the maker, such as silver, porcelain, wood, and paper; and made links to the nature-related shapes and textures in the making of emotional attachment by highlighting the studies of Zelenski and Nisbet (2014), who assert that nature relatedness can create happiness and the feeling of being connected.

In respect to the practice works, this research has a close resemblance to the work *Chalk Chain* made by Dinie Besems and *Sediment Necklace* made by Ruudt Peters (exemplified in Chapter 2.3.3), in the fact that they all focus on material properties in constructing the transformation. However, they are different in that the transformation of this research is about embodying it within the material, whereas both the transformation in Besems and Peter's works are about the depletion of the material. Such an embodiment of the transformation within the jewellery is a significant characteristic of the transformation in this research, which has been demonstrated (Chapter 5.1) to have an effect on the engendering of emotional attachment.

## New directions of research

The characteristics of transformation that have been identified as the main findings of this research have the potential to be developed further in many discourses, since they can be reinterpreted in many forms of objects. The interchangeable use of the word "object" and "jewellery" throughout this research, indicates that the transformation in this research is not confined to jewellery alone. Similar to how this research has used jewellery qualities of "wearing" and "fastening", the transformation can be constructed in any forms of object such as a watch or a computer that has comparable functions. The characteristics of transformation has the potential to demand a change in a user's thinking towards making a sustainable environment, particularly in this throw-away culture. It can be used to extend the life of an object through the emotional attachment of the user, as a similar approach to the research on emotionally durable design.

As within the field of jewellery and wearables, this research has potential to carry on further research to those objects that people do not choose to wear but are prescribed to wear. This research is especially relevant to wearable medical devices that have low adherence with patients, since it can be affected by the craft research into materiality and emotional attachment.

This research also has the potential for further research by utilising emotionally attached objects in order to influence people's behaviour. Such a potential has been found during the first phase of the research, when researching the use of it to evoke the user's positive environmental behaviour and investigating its values. It was identified that emotionally attached possessions are able to help people cope with and adjust to change; and become facilitators of late-life adaptation. Through this, I perceived that emotionally attached

objects have considerable influence on people's lives and that there is a need for further research to be done with the use of such objects.

Furthermore, there is the scope to deepen this research by making interdisciplinary research links with the material discourse. The application of the materials in this research has been limited and is based upon the author's experience of using them and upon the author's own cultural background. However, immeasurable advancement can be made when making links to the field of materials or material companies such as Materia, Material Connexion, Material Lab and iMatter. Many design firms and individual artists are currently collaborating with these material companies to materialise their thoughts into tactile forms with the use of innovative materials. So equally, this research has the potential to make further study by making connections with the material fields.

## Final reflections

Towards the end of this research, I gained confidence on the definitions of the characteristics of transformation that have been developed in this research by evidencing them in the cherished objects of my possession, such as those seen in the worn out baby pillow that has been inside a closet for more than thirty years, and also those seen in a stained wooden mallet that I have used for over a decade and even in the thinning keyboard cover, which I have used since the beginning of my PhD research. At this late stage of the research, I began to wonder why I had chosen the transformation as the focus of the research and by reflecting on these objects; I concluded that it was because these objects have a resemblance to the craft artefacts. In a similar way that I was drawn to the physical labour of craft, I was also drawn to the value of physical work that is within the transformational object. In line with this, the feeling of love I have for my craft objects is similar to the love I have for these transformed objects because they are both results of being "worked on" by me. There may be differences in the fact that a more conscious act and the author's objectives are in the "created" craft object, but the autonomous physical interaction that is behind the two make both craft object and transformed object form an intimate relationship with its maker or the user.

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Oxidation on silver plate cause by touch with fingers. Available at:

<[http://www.powerhousemuseum.com/pdf/preservation/looking\\_after\\_silver.pdf](http://www.powerhousemuseum.com/pdf/preservation/looking_after_silver.pdf)>

**Fig 77.**

Silver alloy test (500/100, 600/100, 700/100, 800/100)

Photo: author

**Fig 78.**

Stainless steel and sterling silver - test piece

Photo: author

**Fig 79.**

Examples of tarnished, silver-plated metal cutlery, caused by gases emitted from formaldehyde. Available at:

<[http://www.powerhousemuseum.com/pdf/preservation/looking\\_after\\_silver.pdf](http://www.powerhousemuseum.com/pdf/preservation/looking_after_silver.pdf)>

**Fig 80.**

Liver of sulfur on sterling silver, partially removed. Available at:

<[http://www.craftworx.co.uk/PDF%20Files/Patina\\_Basics\\_Liver\\_of\\_sulfur.pdf](http://www.craftworx.co.uk/PDF%20Files/Patina_Basics_Liver_of_sulfur.pdf)>

**Fig 81-83.**

Prototype jewellery - pure silver and 600/100 silver

Photo: author

**Fig 84-86.**

Prototype jewellery - sterling silver and stainless steel

Photo: author

**Fig 87-89.**

Prototype jewellery - sterling silver and sulphur containing material (felt)

Photo: author

**Fig 90-92.**

Prototype jewellery - oxidised silver

Photo: author

**Fig 93-94.**

A participant making engraving to the prototype jewellery

Photo: author

**Fig 95.**

Close up of the engraving made to the prototype jewellery

Photo: author

**Fig 96.**

Participants with the prototype jewellery - gathered for a final session

Photo: author

**Fig 97-99.**

A participant explaining their prototype jewellery during the final session

Photo: author

**Fig 100.**

Diaries written by participants

Photo: author

**Fig 101.**

Prototype jewellery hooked up in participant's keyring - sent by a participant

**Fig 102.**

The prototype jewellery and coins - sent by a participant

**Fig 103-105.**

Images of prototype jewellery sent by a participant

**Fig 106.**

Explanation of Prototype jewellery, (pure silver and 600/100 silver-copper alloy)

Photo: author

**Fig 107.**

Comparison of prototype jewellery

Photo: author

**Fig 108.**

Prototype jewellery - contaminated

Photo: author

**Fig 109.**

Prototype jewellery - worn out

Photo: author

## Chapter 5

### **Fig 110.**

Development chart of the characteristics of transformational jewellery. [Chart]

### **Fig 111.**

*Work 1-1*, silver 999, silver and brass alloy, stainless steel

Photo: KC studio

### **Fig 112.**

Explanation of prototype jewellery

Photo: author

### **Fig 113.**

Test piece of silver alloy

Photo: author

### **Fig 114-115.**

Images of making process of the test piece

Photo: author

### **Fig 116.**

Making process of *Work 1-1*

Photo: author

### **Fig 117.**

*Work 1-2*, cherry wood, wood stain

Photo: KC studio

### **Fig 118.**

Test piece of wood material

Photo: author

### **Fig 119.**

Wood varnish

Photo: author

**Fig 120-121.**

Making process of the test piece

Photo: author

**Fig 122.**

*Work 1-3*, white porcelain, stainless steel

Photo: KC studio

**Fig 123-124.**

Test piece of porcelain material

Photo: author

**Fig 125.**

Making process of test piece

Photo: author

**Fig 126.**

*Work 1-4*, Korean paper, wood stain finish, coloured string

Photo: KC studio

**Fig 127-130.**

Working process of *Work 1-4*

Photo: author

**Fig 131.**

*Work 2-1*, copper, white porcelain, graphite

Photo: author

**Fig 132.**

Graphite

Photo: author

**Fig 133-134.**

Working process of *Work 2-1*

Photo: author

**Fig 135-136.**

Close-up of *Work 2-1*

Photo: author

**Fig 137.**

*Work 2-2*, silver 925, white porcelain, rubber

Photo: KC studio

**Fig 138.**

Close-up of *Work 2-2*

Photo: author

**Fig 139.**

Pencil and eraser maker on white porcelain

Photo: author

**Fig 140.**

Snap button (male and female parts)

Photo: author

**Fig 141.**

Close-up of *Work 2-2*

Photo: author

**Fig 142.**

*Work 2-3*, graphite, korean paper, copper

Photo: KC studio

**Fig 143-145.**

Working process of *Work 2-3*

Photo: author

**Fig 146.**

Close-up of *Work 2-3*

Photo: author