

**Material INTO Practice, Practice ONTO Body and OUT TO Space;**

Exploration of sequins as a spatial concept through a new  
embellishment technique.

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of PhD at the University of the Arts London.

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# Abstract

This practice-led PhD study brings together research about the history, materiality, and development of fashion embellishment, with a particular emphasis on sequins for the first time. It is an interdisciplinary PhD study using cultural studies, art histories, fashion practice and theory, and it expands the subject of embellishment to include sculptural methods as tools, selected fashion theory, spatial theory, and Derridean notions of 'supplementarity'. This research foregrounds fashion practice to conceptualise the understanding of fashion embellishment for the first time using these selected tools and theories.

The practice produced for this study expands traditional embellishment by adapting sculptural tools for the first time to make visible the proxemic spaces that surround the body. This new embellishment technique, 'the tensegrity technique', embodies notions of space and fashion theory and discusses how clothing, and by extension embellishment when used on a garment, draws attention to how we occupy and move through the space of the world.

This thesis is driven by four distinct themes; 'material', 'practice', 'body', and 'space': from a consideration of the materials of fashion embellishment I move on to consider how they are used in practice and how, through garments and fashion, they are applied to the body; the materials and practice then extend beyond the parameters of the body and extend out to space. These four themes are the 'building blocks' of this study.

The 'into', 'onto' and 'out to' in the title of this project describes the journey of embellishment from loose components to three-dimensional volume applied to the garment and body to explore space. The materials of embellishment, components, and the base fabric, are converted *into* practice by hand; sequins are attached to fabric with thread. This practice is then applied *onto* the body via the carrier garment. The garment and body extend *out to* space through the development of a new embellishment technique. The above themes and prepositions enable this conceptualisation using a methodology prioritising practice underpinned by theory, and 'design as research'. This

project redefines and expands the understanding of what embellishment means and how it can be used spatially, with a novel and innovative methodology of employing sequins, thread, and beads to develop a sculptural form of embellishment that simultaneously defines the personal space of the wearer.

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# Introduction

In this Introduction I establish the practice background to this study to give context to the development of this interdisciplinary practice-led PhD. I define the key terms 'embellishment' and 'embroidery', and the differences between them, as well as introduce some of the specific terms I use in this research that also refer to embellishment and embroidery. I introduce the four key themes underpinning the research; 'material', 'practice', 'body', 'space' and I explain what I mean by the directional and spatial terms 'into', 'onto' and 'out to' referred to in the title of this thesis. I introduce the research question for this study and then I move on to outline the aims and objectives for this research. Finally, there is an overview of the chapters of this thesis.

## Introduction to this study

When I started this PhD in 2014 after the *Body + Space* conference held at Middlesex University in September of the same year, I imagined that this study would solely be about fashion embellishment, its history, its application, and my contribution to knowledge would be the invention of a new embellishment technique. However, over the course of my PhD studies it has expanded beyond the subject of fashion embellishment, to include sculptural methods as tools, selected fashion theory, spatial theory, and the Derridean notion of 'supplementarity' (the supplement is when something is added to complete a thing or to make up for a deficiency; this is discussed in Chapter 4); it is an interdisciplinary practice-led PhD study that conceptualises the understanding of fashion embellishment for the first time through the use of the above-mentioned selected theories.

This study, in conjunction with the work produced for the *Body + Space* conference in 2014 (discussed below and further in Chapter 1, see also *Appendix 2*), marks the development of my position from being a fashion practitioner to an exploratory practitioner where practice and research are intertwined, developing practice-led research and 'design as research'. These approaches to research will be discussed in *Chapter 1: Methodology*.

The development of practice has been a constant running through this PhD and as such each chapter is grounded in, and led by practice; Chapter 2 and 3 form the contextual review of practice and relevant literature for this thesis, and Chapters 4 to 6 explore the practice developed for this study in relation to the key terms of each chapter ('material', 'practice', 'body', and 'space'), and through engagement with selected theories underpinning the practice. This practice is represented by the making of multiple samples<sup>1</sup>. These samples (successful and not so successful) were all documented using photography and annotation made in the 'Reflective Design Journal' (a notebook where the practice for this study is recorded, and abbreviated to 'RDJ'), which will be introduced in *Chapter 1: Methodology*. It is impossible to give an exact number to the samples made for this study because of iterations, but an approximation would be fifty. Then there are experiments documented with photography where practice (individual structures) is applied to the mannequin; there are approximately seventy-six photographs of iterations in Chapters 5 and 6. These photographs record the building of the structures onto the body. The application of practice to the body (represented as a mannequin) can look different at various stages and they were all considered as stand-alone ideas even though the only difference between two photographs might be the addition of one more structure. The Reflective Design Journal has also been photographed and these images are threaded through the chapters of this thesis to illustrate how I documented my process and methodology.

Two finished garments were produced as part of this project and they are discussed in detail in Chapters 5 and 6. Both garments, as well as *The Proxemic Dress* (introduced below and in Chapter 1), were photographed during the process of making as well as finished pieces, but all three garments were then photographed and videoed being worn by a model on 29.05.22 (these videos can be viewed on YouTube- see *Appendix 3* for the links). These photographs literally allow the embodiment of my garments, and the videos capture the model moving through the space of my home. However, due to COVID restrictions leading up to May 2022, I was not able to use more than one model, nor was I

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<sup>1</sup> Most of the practice produced for this study still 'survives'. However, some samples were dismantled because they were not successful, and so their components could be re-used in other experiments.

able to film or photograph the model in public surroundings, and there is the potential for further exploration of embodied garments in motion beyond this PhD study.

This thesis includes approximately 370 illustrations that are intended to make the understanding of my text much easier for the reader, as well as making it visually engaging. The thesis outlines a historiography of the practice of embellishment, with a particular emphasis on sequins, while expanding the knowledge and understanding of what embellishment means through the application of selected theories.

## Practice Background

I will discuss my practice background in more detail in Chapter 1 and Chapter 4. Here, I briefly introduce the practice undertaken prior to this study to give context to my interests. Between 2006-2011, I designed and produced my eponymous fashion label (called *Richard Sorger*) of ready-to-wear womenswear primarily concerned with embellishment (the application of sequins and beads to the surface of a fabric with thread, see fig. 0.1-0.8 and Chapter 4, figs. 4.16-4.17, 4.21-4.22). I exhibited my collections in London, Paris, and Milan twice-yearly (during fashion weeks), and showed my work on the catwalk during London Fashion Week, spring/summer 2008 to spring/summer 2011 (2007-2010). My work has been exhibited in various exhibitions worldwide: *Dangerous and Divine - The Secret of the Snake*, Afrika Museum, Berg en Dal, Netherlands (April 2012 – October 2012); *Couture Beside the Catwalk*, Amsterdam Fashion Week (January 2012); *Browns: 40 years of Fashion Innovation*, London (March 2010); *Telling Tales; Fantasy and Fear in Contemporary Design*, Victoria and Albert Museum, London (July – October 2009) (see Chapter 4, figs. 4.37-4.38); *Unbridled- The Marriage of Tradition and Avant Garde*, various venues worldwide (2008-2009) (fig. 0.1).



Fig. 0.1 The dress on the left by Richard Sorger was commissioned for the *Swarovski: Unbridled* exhibition in Paris, France, 2008. International designers were commissioned to produce wedding dresses using Swarovski components. The front and back of this dress has a metallic thread embroidered rope motif (a reference to the marital term 'tying the knot'), surrounded by approximately 10,000 Swarovski crystals and pearls. Photograph © Richard Sorger.



Figs. 0.2-0.3 Richard Sorger look book for spring/summer 2008. Original photography © Matthew Hise for Richard Sorger.



Fig. 0.4 Richard Sorger look book for autumn/winter 2008-2009. Original photography © Matthew Hise for Richard Sorger.



Fig. 0.5 Richard Sorger look book for autumn/winter 2008-2009. Original photography © Matthew Hise for Richard Sorger.



Fig. 0.6 Richard Sorger look book for spring/summer 2009. Original photography © Jez Tozer for Richard Sorger.



Fig. 0.7 Richard Sorger look book for six dresses spring/summer 2010. Original photography © Heathcliff O'Malley for catwalking.com.

# Richard Sorger

AUTUMN/WINTER 2010/11

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Fig. 0.8 Richard Sorger look book for *The Swarm* autumn/winter 2010-2011. Original photography © catwalking.com.



## The Proxemic Dress

In 2014 I made *The Proxemic Dress* (See Chapter 1, figs. 1.11-1.15) for the *Body + Space* conference at Middlesex University, London, using a technique I first used on a dress for spring/summer 2010 (See Chapter 1, fig. 1.1); crin (short for 'crinoline') ribbon was embellished by hand with groups of three bugle beads and when this ribbon was sewn along one edge onto the base fabric and garment in 'whiplash'<sup>2</sup> lines, the ribbon stood up and elevated the bugle beads off the surface of garment and body and out to space. It was through the post-rationalisation of this technique I realised that embellishment could occupy the immediate space around the body rather than just reside on the surface of the garment and this started my thinking about embellishment as a spatial concept. During the period between making this dress and writing my paper for the conference, I embraced Edward T. Hall's notions of 'proxemics' (proxemics refers to the distance between the bodies of people as they interact, see Chapter 1) and referred to his term in the title for the dress.

The production of this dress was foundational to the conceptualisation of this PhD study. *The Proxemic Dress* uses a different technique from my experiments for the purposes of this research; *The Proxemic Dress* uses embellished ribbon that extends in the proxemic space of the garment and wearer. The technique that I introduce for the purposes of this research ('the tensegrity technique') utilises a new embellishment technique which will be further explained in Chapter 1.

## Definition of embellishment

For the purposes of this study, I will clarify my distinction between the terms 'embroidery' and 'embellishment'; although they are related, embroidery refers to the use of thread work, whereas embellishment is primarily concerned with the components used and their application to the surface of the fabric with thread (though thread can sometimes be substituted with glue). I limit my research to the area of 'embellishment',

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<sup>2</sup> Lines that go back and forth on themselves. The change in direction is what enables the ribbon to stand up.

and I use this term when discussing work that utilises components in addition to thread embroidery. I use the term 'embellishment' rather than 'embroidery' to define and make much clearer the distinction between the two subjects, moving forward the definition of embellishment.

Embroidery is the larger subject field that includes embellishment as a subset. The Oxford English Dictionary (1984) defines embroidery as '1) the art of ornamenting cloth and other fabrics with figures of needle work, 2) embroidered work or material and 3) 'elaborate or showy ornament' and 'adventitious adornment'' ('adventitious' means by chance rather than by design)' (1984).

However, the above definition does not describe what embroidery *is*. Charles Germain de Saint-Aubin, the embroidery designer to King Louis XV, writing in 1770 defines embroidery as 'the art of adding the representation of such motifs as one chooses -flat or in relief, in gold, in silver, or colour- to the surface of a finished piece of cloth' (1983: 16). Saint-Aubin writes that 'Embroidery was called by the name of the Phrygians, *Phrygies*, apparently because they excelled in this Art.' (1983: 15). However, it is not clear due to Saint-Aubin's use of the term embroidery, whether this refers to purely thread work or the use of components to form embellishment as well (the definition of embellishment will be introduced below). Mary Gostelow, writer, and member of various embroidery guilds, wrote in 1977 'the use of cotton, flax, wool and silk grounds and threads in embroidery is universal, and stitches such as satin stitch, chain stitch and cross stitch are found virtually throughout the world' (1977: 8). Thread made from the above materials is grafted to a ground fabric with a needle which pierces the fabric. This centuries-old practice provides researchers with information about aspects of social history as embroidery can be found in cultures worldwide and can be used in a pictorial, figurative or symbolic manner (Gostelow, 1977: 8).

My working definition of embellishment, in terms of fashion and textiles, is the application or addition of components or materials to the surface of an existing fabric creating a three-dimensional relief or pattern. With this definition I am further expanding upon the definition of embroidery by Saint-Aubin, but I argue that the addition of

components to the surface of a fabric (other than thread) is what differentiates embellishment from embroidery. The most common components used for embellishment are beads and sequins, which are also commonly known as 'paillettes'. These loose components are sewn to the surface of the fabric using thread, grafting component to fabric to supplement the fabric.

The Oxford English Dictionary defines the verb 'embellish' as 'a) to render beautiful and b) to beautify with adventitious adornments: to ornament' (1984). The etymology of the word can be traced back to the co-joining of *en-* to *bel* meaning beautiful in French. Embellishment is defined as '1) the action or process of embellishing or beautifying; decoration, ornamentation and 2) that which embellishes or beautifies, *lit.* and *fig.*; an ornament, decoration, setting off; *esp.* a grace of diction or composition, a poetical image, episode, or hyperbole; also, in pejorative sense, an exaggeration' (1984). The term 'adventitious adornment' is used for the definition of both embroidery and embellishment, further suggesting the two are closely related in definition.

Embellishment is considered a subset of embroidery; within the subject writing about embroidery, embellishment can also be covered, however it is often not referred to as embellishment, but rather as a part of embroidery, or a subcategory. Examples of this by such authors as embroidery and embellishment historian Joan Edwards and the fashion curator Andrew Bolton are discussed below. I argue that for the purposes of this project, when components such as sequins and beads are added to an embroidery then it no longer exists as an embroidery but becomes an embellishment. The addition of these components also increases the three-dimensional quality of an embellishment in comparison, through there are notable exceptions of three-dimensional embroideries such as the raised embroidery produced in England in the 17<sup>th</sup> century (examples of which were exhibited at The Holburne Museum, Bath, 13 May to 11 September 2022).

However, my definition of embellishment is not consistent with how embellishment is written about because it is founded in practice and not only theory or history. In the writing about embellishment, there is often a lack of distinction between the terms 'embellishment' and 'embroidery'. For example, in the catalogue for the Metropolitan

Museum of Art's 2018 exhibition *Heavenly Bodies: Fashion and the Catholic imagination*, the text refers to 'embroidery' on garments even where components such as 'paillettes' are used (Bolton et al. 2018: 37). Saint-Aubin (1983) wrote in 1770 about both embroidery and embellishment but he makes no distinction between the two<sup>3</sup>.

Joan Edwards is the key writer on embellishment, or as she often refers to it, 'bead embroidery'. Edwards wrote several books about embellishment and embroidery starting with *Bead Embroidery* in 1966, looking at the social and cultural aspects as well as the history, use of design and techniques. Edwards refers to embellishment as 'bead embroidery' (Edwards, 1992) and the embroidery writer and practitioner Angela Thompson refers to the practice as 'embroidery with beads' (Thompson, 1987). Edwards further refines her definition to 'beads in association with textiles' (1992: 11).

The subject of embroidery is written about and examined more than the subject of embellishment as evidenced by the number of books on embroidery such as Browne, C., Davies, G. and Michael, M. A. (Eds.) (2016), *English Medieval Embroidery: Opus Anglicanum*; Gostelow, M. (1977), *Embroidery: Traditional designs, techniques and patterns from all over the world*; Morrall, A and Watt, M. (2008), *English embroidery from the Metropolitan Museum of Art, 1580-1700: 'twixt art and nature*. Edwards, one of the few writers on the subject of embellishment that I have identified, writing in 1966 suggests that the topic of bead embroidery is an under-explored and little written about theme. She uses a letter sent in to *Notes and Queries* c.1941, asking 'Who is the authority on this little branch of needlework? Has anyone written a book about it?' to illustrate this point, mentioning that no response was ever received (1992: 11). Edwards cites four books on the topic that she was able to find from the subject index of the British Library: Smith, M. (1889). *Bead Furniture and Ornamental Beadwork*; White, M. (1904). *How to do Beadwork*; Robinson, B. (1912). *The Priscilla Beadwork Book*; and Littlejohns, I. B. (1934). *Beadcraft*. I have identified other key texts about embellishment such as Saint-Aubin, C. (1983). *Art of the Embroiderer* (originally written in 1770), Edwards, J. (1992). *Bead embroidery*, and White, P. (1994). *Haute couture embroidery: The art of Lesage*, which examines the subject of embellishment through the history of the French House of Lesage

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<sup>3</sup> At least his translators make no distinction when translating the original French into English.

who produced embellishments and embroideries for other fashion houses such as Balenciaga and Christian Dior. Researchers Maarit Aakko (2018) and Joyce Fenton-Douglas (2014) have written about the use of embellishment for artisanal fashion, focussing on the designers, crafts people and ancillary workshops that exist to facilitate the work of smaller craft-based designers. More recently, the book *Embellishment/Smuk* (Demoen, E. and Huyghe, A. (Eds.) (2019)) accompanied the exhibition of the same title at Modemuseum Hasselt, Belgium, with essays by academics and curators about the subject of embellishment. In 2021 a book was published about the French House of Rébé, a producer of embroideries and embellishments for French haute couture houses such as Christian Dior and Balenciaga, written by Nadia Albertini, an embroidery and embellishment designer for the French fashion house Chloé (Albertini, N. (2021) *Rébé: Broderies haute couture*), but this is currently only available in French. Literature concerned with the subject of embellishment will be discussed further in *Chapter 2: Contextual Review; Material and Technique*.

## The components of embellishment

Having established the difference between an embroidery and an embellishment, I discuss the materials and components used for embellishment in *Chapter 4: Material into Practice*. The most commonly applied components for embellishment are sequin, bead, and thread and my main interest is the use of sequins, and this is for two reasons. The first reason is practice; sequins are lightweight, and they have the potential to be made in diverse shapes and sizes. This quality is particularly useful in my practice as I explore the proxemic space of body and garment using sculptural tools (tensegrity and the stereometric method, introduced in Chapter 1) and I need materials and components that are lightweight. This practice is discussed in chapters 5 and 6.

The second reason is that literature on the study of sequins is scarce, and one aim of this project is to bring together research on sequins such as White, P. (1994), *Haute couture embroidery: The art of Lesage*; Saint-Aubin, C. (1983), *Art of the Embroiderer*; Edwards, J. (1992), *Bead embroidery*; Edwards, J. (1985), *The sixth of Joan Edwards' Small Books on the history of Embroidery*; This is opposed to the more prolific literature available on the study of beads, such as Dubin (1987), *The History of Beads from 30,000 B.C. to the*

*Present; Seyd (1973), Introducing Beads; Thompson (1987), Embroidery with Beads; Piña (1999), Beads in Fashion 1900-2000; and Sciama, L. and Eicher, J. (2001), Beads and bead makers; and embroidery: Synge (2001), Art of Embroidery: History of Style and Technique; Gostelow (1977), Embroidery: Traditional designs, techniques and patterns from all over the world; Morrall and Watt (2008), English embroidery from the Metropolitan Museum of Art, 1580-1700: 'twixt art and nature; Jones (1969), A History of Western Embroidery; Swift (1984), The Batsford Encyclopaedia of Embroidery Techniques, to name a few.*

As mentioned above, much of the practice produced for this study focuses on the use of sequins. However, In Chapter 4 I discuss the importance of thread in this practice and in Chapter 6 I discuss experiments that use beads.

## **Pertinent terms for this study**

In the above section I have discussed the difference between embroidery and embellishment. In later chapters I complicate the definition of embellishment through the addition of space and notions of space to embellishment. Before I can do this, it is necessary to introduce some practice-specific terms that I use in subsequent chapters to discuss both my practice and the work of other practitioners.

'Spatial embroidery' refers to embroidery that exists in the space above the surface of the fabric, however, this term is not used as much as 'spatial embellishment' which is more relevant to this study and refers to embellishment that exists in the space above the surface of the fabric. 'Proxemic embellishment' also refers to embellishments that exist above the surface of the fabric and garment and engages with Edward T. Hall's spatial notions of proxemics which will be discussed in the next chapter and Chapter 6.

'Tensegrity structures' refers to experimental embellishments that, as well as occupying the space above the surface of the fabric and garment, use Kenneth Snelson's tensegrity sculptural tool in their production (the word 'tensegrity' is a merging of the words 'tension' and 'integrity' and is explained in Chapter 1).

## **The key themes of this study; ‘material’, ‘practice’, ‘body’, and ‘space’**

This project is driven by four distinct themes; ‘material’, ‘practice’, ‘body’, and ‘space’: ‘material’ explores the materiality of fashion embellishment (sequins, thread, and beads, see Chapter 2); these materials are utilised in practice; and through garment and fashion they are applied to the body; the materials and practice then extend beyond the parameters of body and extend out to space. I also perceive these four themes as ‘building blocks’ of my project; components (materials) are applied to fabric through practice, this practice is applied to the body (through clothing) and extends out to space and new territory.

### **‘Into’, ‘onto’ and ‘out to’.**

The ‘into’, ‘onto’ and ‘out to’ in the title of this project describes the journey of embellishment from loose components to three-dimensional volume applied to the garment and body to embody and explore space; materials of embellishment, components, and the base fabric, are converted *into* practice by my own hand; sequins are attached to fabric with thread. This practice is then applied *onto* the body via the carrier garment. The garment and body extend *out to* space through the development of a new embellishment technique. The above themes and prepositions allow me to question the concept of embellishment using a methodology prioritising practice underpinned by selected relevant theories.

### **Research Questions:**

- How can the development of a new technique for fashion embellishment be used to explore the relationship between the body, garment, and the immediate surrounding proxemic space?
- How can the subject of fashion embellishment be conceptualised using practice and selected interdisciplinary theories to expand its meaning?

- How can practice question notions of personal space, proxemics, and territories through the extension of the boundaries of the dressed body, using embellishment as a spatial tool to achieve this?

## **Aims and Objectives**

### **Aims**

1. To produce a body of practical work that explores the key themes of ‘material’, ‘practice’, ‘body’ and ‘space’, in the context of specific spatial theories.
2. To negotiate the concept and understanding of fashion embellishment through its application via garments to the body and its proxemic space.
3. To explore the boundaries of the body and garment, and proxemic space.
4. To use interdisciplinary sculptural theories as tools to develop new embellishment technique.

### **Objectives**

1. To identify gaps in current literature through research into the history and development of fashion embellishment.
2. To undertake a review of key fashion practitioners whose work is concerned with the four key themes: ‘material’, ‘practice’, ‘body’ and ‘space’.
3. To identify the spaces relating to the body and garment and the boundaries they create by using selected fashion theory as well as selected theories from social science and how they contribute to spatial theory.
4. To explore the proxemic space *beyond* the surface of the garment; intimate and personal distances, and territories, through the concept of embellishment.

## **Introduction to the key theories of this study**

This project draws on theories as diverse as the French philosopher Jacques Derrida’s ‘supplementarity’ (the supplement is when something is added to complete a thing or to make up for a deficiency, see Chapter 4); his discussion of ‘ergon’ and ‘parergon’ (according to the German philosopher Immanuel Kant, ergon refers to the work (as in an artwork, or a work of literature) and parergon is what lies beyond, to be discussed in



Chapter 5); fashion theory concerned with bodies and dress by theorists including Malcom Barnard and Joanne Entwistle (Chapter 5); and spatial theory such as Edward T. Hall's discussion of proxemics and by extension allocentric and egocentric space (Graziano, 2018: 15) (allocentric space is when space is processed by using external landmarks for navigation and egocentric space is a portable territory that the individual carries with them, see Chapter 6). My practice employs sculptural tools such as the Russian Constructivist artist Naum Gabo's 'stereometric method' (a sculptural technique where implied space or volume became an essential component of the sculpture itself, see Chapter 1) and the American artist Kenneth Snelson's 'tensegrity' (a merging of the words 'tension' and 'integrity', first used by Buckminster Fuller in 1962 to describe Snelson's work, also discussed in Chapter 1) to explore space and engage with the aforementioned theories to conceptualise embellishment.

Each chapter discusses specific theories and ideas in stages from the materials of practice, their application to the body and beyond. The 'thread' that runs through it all, quite literally, is my practice which has evolved through the course of the project, sometimes in the background when writing, but more often it is in the foreground and is leading the research in each of the chapters that concern 'material', 'practice', 'body', and 'space'.

## Overview of Chapters

Following this Introduction, in *Chapter 1: Methodology* I discuss the 'what?', 'how?', and 'why?' of my project, by defining key theories and concepts which are the building blocks of my technique, such as the sculptural tools 'tensegrity', as embodied by the work of the artist Kenneth Snelson, and the Russian constructivist artist Naum Gabo's 'the stereometric method' which make my practice possible. I introduce the concept of anthropologist Edward T. Hall's 'proxemics' which my practice embodies when applied to the body through dress. I discuss *The Proxemic Dress* (an embellished dress produced prior to this study) in more depth which was instrumental to the development of this PhD study. Then I introduce the 'tensegrity technique', the basic technique and the principles, which I developed for this study as a method of embellishment that builds out to the proxemic space of the fabric and then the body and the garment.

Chapter 2 is the first part of the contextual review, which continues in Chapter 3. This contextual review is driven by four key themes; 'material', 'practice' and 'body', and 'space', and their spatial relations and applications 'into', 'onto', and 'out to'. I have divided the Contextual Review into two chapters. *Chapter 2: Contextual Review; Material and Technique* is concerned with the material and practice of embellishment; sequin, thread, and beads, their history, and key developments. Then it moves on to the development of techniques for embellishment. The second part of the contextual review, *Chapter 3: Contextual Review; Practice, Body, and Space*, is concerned with what happens when material and practice are applied to the body and extend out to space. First, I discuss key practitioners who use embellishment to express their ideas, establishing how embellishment can be conceptualised, ready for further conceptualisation in subsequent chapters. I then discuss practice that supplements the body through silhouette and then move beyond the surface of the body and garment to a discussion of bodies, clothing, and space, citing examples of existing proxemic embellishments.

In *Chapter 4: Material into Practice*, my practice is discussed through the lens of technique and materiality before moving onto how I conceptualise my practice using Jacques Derrida's theory of 'supplementarity'. I discuss early iterations of the tensegrity technique experiments produced between 04.12.15 to 17.09.18 when I experimented with form and scale. I move onto the materials of this practice; sequins, thread, beads, and the consideration of colour in the outcomes, as well as discussing early experiments concerned with 'growing' embellishments using chemical (salt and copper sulphate crystals) and biological materials (fungi). I then discuss the conceptual implications of my practice; what happens when the raw materials of embellishment -bead, sequin, thread- are applied to the fabric to create an embellishment? Derrida's theory of supplementarity is used to argue that in terms of this study, the embellishment and the fabric are essential to each other.

*Chapter 5: Practice onto Body* moves on to discuss the application of my practice to the body. First, I discuss the practicalities and experiments of applying my practice to the body, represented by a mannequin, and then I use selected theories about 'fashion' and 'dress', bodies and garments, by key fashion theorists such as Joanne Entwistle and

Malcolm Barnard, in relation to culture to give context to my practice and to further conceptualise embellishment practice. I discuss the body and garment and how they can be considered conceptually as one, using the arguments of Entwistle, Barnard, the French writer and critic Théophile Gautier and the academic and philosopher Kate Soper, and by extension how embellishment, when used on the garment, must also be considered as part of the body. I then move on to Derrida's discussion of the ergon and parergon which leads to the artist and academic K. Malcolm Richards notion of 'parergonal space' (a liminal space defined by Richards (2008: 38) as 'space that resists any simple ordering by the opposition of inside or outside') which is used to navigate the stereometric volumes of my practice.

In the final *Chapter 6: Body out to Space*, I move beyond the surface of body and garment and out to the space immediately surrounding it. I discuss notions of territories, both physical and imagined, this time in relation to space and the aspects of proxemics that are key for this study; intimate and personal distance. I discuss and conceptualise what is meant by 'space', starting with the social scientist and geographer Doreen Massey's negotiation of space, before discussing proxemics in more depth; Hall's notions of proxemics, introduced in Chapter 1 are further problematised by the American neuroscientist and author Michael Graziano, the Danish psychologist and academic Henrik Høgh-Olesen and the academic Heidi Overhill. The practice in this chapter discusses how embellishment can extend the boundaries of the body, first by building tall proxemic structures and then I describe the final outcome for this project; how it extends the personal territory of the wearer, and how it embodies new practice and theory for the first time.

In the *Conclusion* of this thesis, I explain how I have developed the definition of fashion embellishment and how I have conceptualised the subject for the first time. I summarise the findings of this study by reviewing the chapters. I discuss the *Contribution to Knowledge* that this thesis demonstrates to confirm how this PhD study is new knowledge. Finally, I discuss areas of further investigation beyond this doctoral study and how practice and theory could be developed further beyond the confines of this PhD

# Timeline of practical and theoretical investigation

Year 1 2014-15	Oct.	Nov.	Dec.	Jan. 2015	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Year 2 2015-16	Oct.	Nov.	Dec.	Jan. 2016	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Year 3 2016-17	Oct.	Nov.	Dec.	Jan. 2017	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Transfer to LCF												
Practical investigation												
Theoretical investigation												
Year 4 2017-18	Oct.	Nov.	Dec.	Jan. 2018	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Transfer to LCF												
Practical investigation												
Theoretical investigation												
Year 5 2018-19	Oct.	Nov.	Dec.	Jan. 2019	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Year 6 2019-20	Oct.	Nov.	Dec.	Jan. 2020	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Confirmation Preparation												
Practical investigation												
Theoretical investigation												
Year 7 2020-21	Oct.	Nov.	Dec.	Jan. 2021	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Year 8 2021-22	Oct.	Nov.	Dec.	Jan. 2022	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Writing Up Period												
Year 9 2022-23	Oct.	Nov.	Dec.	Jan. 2023	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Practical investigation												
Theoretical investigation												
Writing Up Period												

# Glossary of terms

## **Allocentric and egocentric space**

'Allocentric space' is when space is processed by using external landmarks for navigation (Graziano, 2018: 15). Allocentric space is fixed, and the individual moves through it.

'Egocentric space' is a portable territory that the individual carries with them.

## **The Arnhem Bodice**

A garment produced for this study that uses the tensegrity technique to make the 'hard' proxemic embellishments that cover the garment (see Chapter 5).

## **The Arnhem Toile**

A mock-up in cotton calico of *The Arnhem Bodice* (see Chapter 5) to test the tensegrity technique on a garment and the body as represented by a mannequin.

## **Bead**

In terms of fashion embellishment, a bead is a relatively small piece of glass, stone, or similar material with a hole that enables it to be sewn onto the surface of a fabric.

## **Components**

In the context of this study, the term 'components' refers to the materials used for embellishment practice; sequins, beads, and thread.

## **The Eclipse Dress**

A dress produced for this study that uses the tensegrity technique to make the 'soft' proxemic embellishment that cover the dress (see Chapter 6).

## **Embellishment**

The definition of embellishment within the context of this study, in terms of fashion and textiles, is the application or addition of components or materials to the surface of an existing fabric creating a three-dimensional relief or pattern. In *Chapter 2: Contextual Review; Material and Technique*, embellishment is also referred to as embroidery within selected literature.

## **Embroidery**

The Oxford English Dictionary defines embroidery as ‘1) the art of ornamenting cloth and other fabrics with figures of needle work, 2) embroidered work or material and 3) ‘elaborate or showy ornament’ and ‘adventitious adornment’ (1984). In the context of this study, the use of the term embroidery refers to thread work only, however, in *Chapter 2: Contextual Review; Material and Technique*, the term embroidery is also used to describe embellishment within selected literature.

## **Ergon and parergon**

According to the German philosopher Immanuel Kant, ergon refers to the work (as in an artwork, or a work of literature) and parergon is what lies beyond. For example, if the ergon is a painting, then the parergon can be viewed as the frame surrounding the art. Ergon and parergon are used in this study to discuss where one thing ends and the other begins. (see also ‘Parergonal space’).

## **‘Hard’ proxemic embellishment**

The term ‘‘hard’ proxemic embellishment’ primarily refers to the choice of materials used for the structure and the outcome of an embellishment. Hard proxemic embellishments are rigid, for example, *The Arnhem Bodice* (see Chapter 5), produced for this study.

## **Haute couture**

Haute couture is French for 'high sewing' and refers to the creation of exclusive fashions. It is a common term for custom-fitted clothing as produced primarily in Paris but also in other fashion capitals such as London, Milan, and New York. In this thesis, the term haute couture is used consistently throughout by the author, except when quoting or citing work where the work ‘couture’ is used on its own.

## **Lesage**

Lesage et Cie (also known as Lesage and Co., Maison Lesage, House of Lesage, or just Lesage) is a French ‘House’ of embroidery and embellishment. Lesage as an atelier still exists, but a large part of the work is now outsourced to workshops in India and less is produced in-house. Since 1992 Lesage offer short courses as the Ecole Lesage (Lesage

School) in how to produce embellishments, focusing on traditional styles, materials, and techniques.

### **Liminal**

Liminal refers to the transitional space, boundary, or threshold between two things.

### **The Lunéville method**

The Lunéville method is an embellishment technique that uses a tambour hook, like a crochet hook, to work on the reverse side of the fabric, creating a chain stitch that links the component (bead or sequin) to the fabric.

### **Ma and mu**

‘Ma’ is a Japanese word used to express the conceptual space between two things. In terms of this project, it is used to discuss the space between the body and the garment. ‘Mu’ is the Japanese word for ‘emptiness’ or ‘void’ and it is also used in this study when discussing the space between the body and garment.

### **Materiality**

‘Materiality’ refers to the materials used for embellishment practice in this study; sequin, bead, thread and fabric. It also refers to the materials that these components are made from, such as plastic (sequins and beads) and cotton (thread). The materials of other embellishment practice are discussed in *Chapter 2: Contextual Review; Material and Technique*.

### **Paillette**

Paillette is a French word for sequin and has been used historically to refer to different types of sequins, making its exact definition difficult to define. According to Joan Edwards, paillettes are flat sequins as opposed to couvettes which are slightly concave (Edwards 1992: 48).

### **Paregonal space**

The academic K. Malcolm Richards defines parergonal space as 'space that resists any simple ordering by the opposition of inside or outside' (Richards, 2008: 38). It is a liminal space.

### **Personal space**

Leslie Hayduk defines personal space as 'the area individual humans actively maintain around themselves into which others cannot intrude without arousing discomfort' (Hayduk, 1983: 118).

### **Proxemics**

The anthropologist Edward T. Hall coined the term proxemics in 1963 to refer to the distance between people as they interact. He divided proxemic space surrounding the human body into four categories; 'intimate distance' (0-45cm), 'personal distance' (45-120cm), 'social distance' (120-360cm) and 'public distance' (360-760cm).

### **Proxemic embellishment**

Proxemic embellishment is a term used in this study to describe an embellishment that extends beyond the surface of the garment out to surrounding proxemic space.

### **Proxemic silhouette**

A specific term for this study that refers to a silhouette supplemented by embellishment and the stereometric method to create volume surrounding the body and garment.

### **Reflective Design Journal (RDJ)**

The book where practice is recorded and reflected upon using notes and diagrams. It is a key part of the methodology for this study.

### **Sequin**

Sequin is a generic term for the small, generally flat, perforated discs or other shapes used for embellishment, which were previously subdivided into 'paillettes' and 'couvettes' (both French words). According to Joan Edwards, paillettes are flat sequins and couvettes are slightly concave (Edwards 1992: 48).



### **Social space**

The social scientist Doreen Massey defines social space as the connections and interactions that we make with each other (Massey, 2013 and Massey, 1994: 120); 'The articulation of social relations which necessarily have a spatial form in their interactions with one another' (Massey, 1994: 120).

### **'Soft' proxemic embellishment**

'Soft' proxemic embellishment' refers to the choice of materials used for the structure and the outcome of an embellishment. The structures of the embellishments are less rigid and perhaps invite more interaction between wearer and viewer because of their tactility. *The Eclipse Dress*, produced for this study, is an example of a garment using 'soft' proxemic embellishment.

### **Spangle**

'Spangle' is another word for sequin. It refers to a generic form of sequin rather than a specific type of sequin.

### **Spatial embroidery and spatial embellishment**

The term 'spatial embroidery' refers to embroidery that exists in the space above the surface of the fabric, however, this term is not used as much in this study as the term 'spatial embellishment' which is more relevant to this study and refers to embellishment that exists in the space above the surface of the fabric.

### **Stereometric method**

A sculptural technique developed by the Russian Constructivist artist Naum Gabo where implied space or volume became an essential component of the sculpture itself.

### **The supplement and supplementarity**

Jacques Derrida's notion of the supplement is when something is added to complete a thing or to make up for a deficiency. This theory is called supplementarity. In terms of this study, the supplement is embellishment which is added to fabric to complete it.

## **Tensegrity**

Tensegrity a merging of the words 'tension' and 'integrity' (Dieffenbacher, 2013: 67, Heartney, 2013: 20 and Snelson, 2012: 72/2 of 11), first used by Buckminster Fuller in 1962 to describe the sculptures of the artist Kenneth Snelson.

## **Tensegrity structure**

In terms of this study, a tensegrity structure is an embellishment completed using the tensegrity technique.

## **The tensegrity technique**

A new technique for fashion embellishment developed for this study that employs tensegrity in its construction and the stereometric method to make solid the implied volumes between components.

## **Thread**

Thread is the yarn used to sew two or more materials together. Thread is used in this study to graft sequins to the base fabric. Thread is also essential to the construction of the tensegrity technique embellishments; the tension of the thread enables the stability of the tensegrity structures.

# Chapter 1: Methodology

## Introduction

This interdisciplinary practice-led PhD study negotiates the relationship between practice and theory; firstly, to develop a new embellishment technique; secondly, to conceptualise embellishment; and thirdly the application of my practice to the body allows me to interrogate the relationship between embellishment, bodies, and space.

‘Design as research’ (my term, summing up the discussions of Frayling (1993), Vaughn (2017), Bulley and Şahin (2021), Kaszynska et al. (2022)), and ‘reflection’ (Schön, 1983: 49) are the methods that frame this PhD research, and my use of design as research and reflection to articulate my practice is illustrated in the ‘Reflective Design Journal’ which records the development of this research.

This Methodology chapter considers the ‘what?’, ‘how?’, and ‘why?’ of my PhD study, by defining the key sculptural and conceptual tools, ‘tensegrity’ and ‘the stereometric method’, which are the building blocks of the newly developed technique for this research. Through the application of tensegrity and the stereometric method to embellishment, my practice explores proxemic space with what I have called ‘the tensegrity technique’. The tensegrity technique allows stereometric volume to be added to the surface of the fabric and out to space, to embody volume and complicate notions of boundaries and territories; body/skin/garment/space. I will introduce the tensegrity technique later in this chapter, but first I introduce practice completed prior to the start of this PhD in order to contextualise the trajectory of this research.

## ***The Proxemic Dress and the Body + Space***

### **conference**

Prior to this PhD study, I worked on *The Proxemic Dress* for the *Body + Space* conference in 2014 (see *Appendix 2* for *The Proxemic Dress* paper presented at the conference). The

conference was hosted at Middlesex University where I was employed as a Senior Lecturer in Fashion at the time, and it came at a point in my career when I was considering what to do with my practice after ceasing my fashion brand in 2011. The title of the conference (*Body + Space*) provoked me to think about how a technique I developed for an earlier dress in 2009, as part of the *six dresses*<sup>4</sup> collection for spring/summer 2010 (fig. 1.1), could be further developed. For this dress from 2009, I commissioned the small embellishment workshop in Mumbai, India, that I worked with at the time to hand stitch random groups of three bugle beads onto 'crin' (short for 'crinoline') ribbon. Crin is a stiff ribbon commonly used for millinery, originally made from horsehair, hence its stiff nature. The crin ribbon was then hand stitched along one edge to the surface of a white organza dress-base in a pre-designed 'whiplash' pattern (back and forth), causing the crin ribbon to stand away from the surface of the dress. The technique allowed the embellishment to extend beyond the surface of the dress itself and exist in the immediate proxemic space (see the next section, *Proxemics*) surrounding the body. The embellishment 'leaving' the body and existing in the space surrounding the dress (and model) is particularly evident in fig. 1.1. It was this photograph that began my thought process about the possibilities for embellishment to explore proxemic space, and I started to think about my practice beyond the confines of commerciality and into new, conceptual, territory (see *Appendix 3* for YouTube links to videos 4, 5, and 6 of *The Proxemic Dress*).

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<sup>4</sup> The lower-case capitalisation of *six dresses* is intentional and it is the original title of the collection.



Fig. 1.1 Dress from *six dresses* collection for spring/summer 2010. Photograph © Heathcliff O' Malley.

## Proxemics

One of the first theories I engaged with for the *Body + Space* conference was proxemics. According to the anthropologist Edward T. Hall, every living organism 'has a visible physical boundary- its skin- that separates it from its external environment' (Hall & Hall, 1990: 10). In terms of humans, this visible boundary (the skin) is surrounded by a series of invisible boundaries that are harder to define but no less real. These invisible boundaries begin with a person's personal space and end with their territory. Territoriality is 'the act of laying claim to and defending a territory' (Ibid., 10) and is necessary to survival. Personal space is another form of territory.

Hall coined the term proxemics in 1963 to refer to the distance between people as they interact or more specifically 'the interrelated observations and theories of man's use of space as a specialised elaboration of culture' (Hall, 1966: 1). Hall described four levels of personal space and social distance; 'intimate distance' (0-45cm), 'personal distance' (45-120cm), 'social distance' (120-360cm) and 'public distance' (360-760cm) (fig. 1.2). For the

purpose of this thesis, I also use the term 'proxemic space' when discussing Hall's proxemic distances surrounding the body.

Hall's notions of space raise some interesting questions; how are these boundaries arrived at? Are they personal ('I am aware of my space'), social ('I am aware of your space') or cultural ('we all have a shared concept of space')? If a garment is worn that supplements<sup>5</sup> the proxemic space of the wearer, is the perception of it for the wearer ('this is my space') or the viewer ('that is your space')? These questions are not directly addressed in this study, mainly because in order to answer them they require the interaction of viewer and wearer. Due to COVID restrictions, it was not possible to explore this interaction within the timeframe of this study. However, they are potential areas for further research.

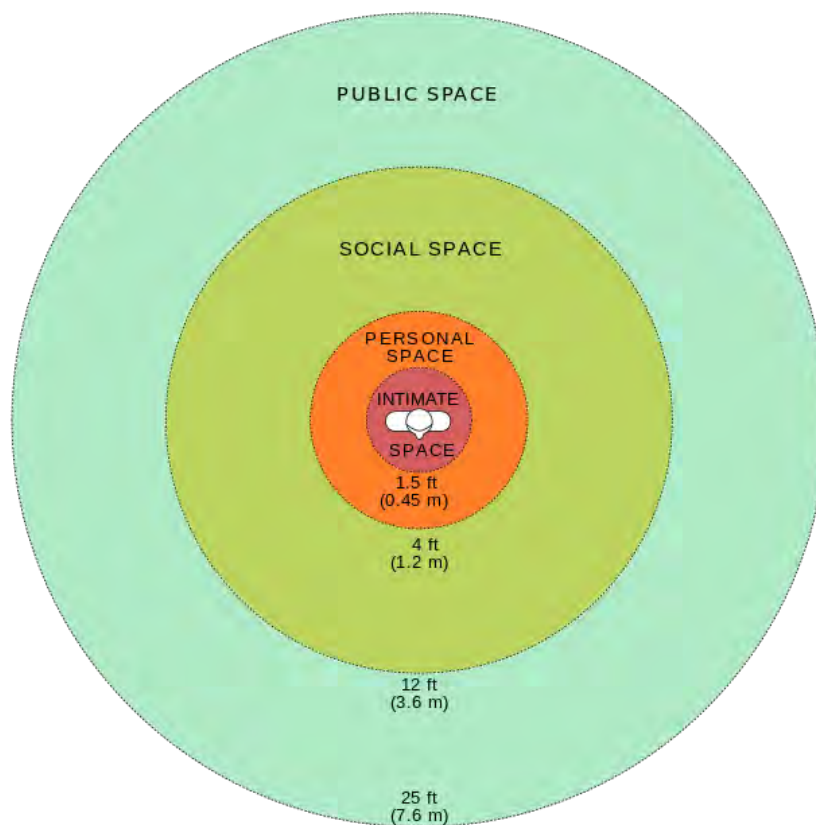


Fig. 1.2 Diagram of Edward T. Hall's proxemics, illustrating circles of interpersonal space. Online image, original source not found.

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<sup>5</sup> In this instance 'supplements' refers to the augmentation or addition to the personal proxemic space of the wearer. The choice of the term 'supplements' is directly related to Jacques Derrida's theory of 'supplementarity' (the supplement is when something is added to complete a thing or to make up for a deficiency) which is a key theme of this thesis and will be discussed further in Chapter 4.

## ***The Proxemic Dress***

*The Proxemic Dress* is a short, fitted dress with long sleeves made in a black wool fabric. The dress base was constructed first and then placed on the mannequin so that I could experiment with the placement of the crin ribbon onto the surface. I used a product called 'fashion tape' which is a fine sticky tape that can be used to 'draw' lines on a mannequin without causing permanent damage. This product enabled me to test out a variety of designs which I photographed so they could be reviewed and a decision on the final design could be made (see figs. 1.3-1.5).

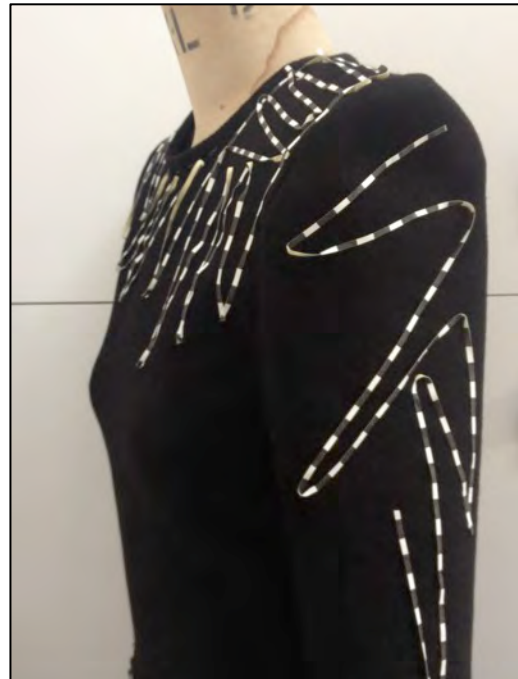
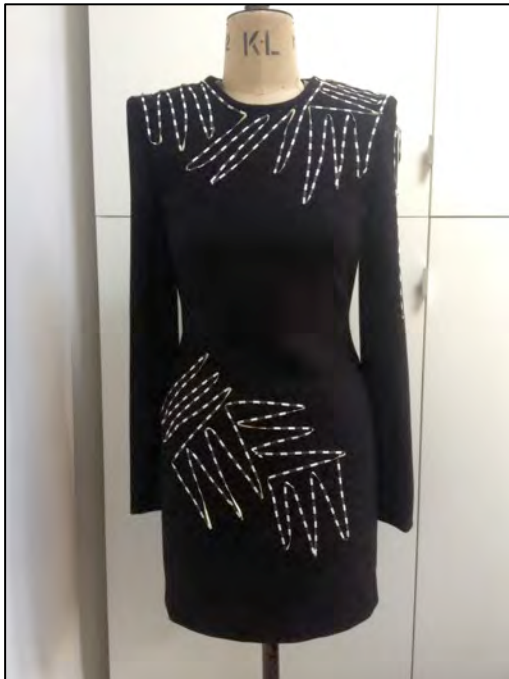


Figs. 1.3-1.5 'Fashion tape' is used to 'draw' lines on the black wool base of *The Proxemic Dress*. Photographs © Richard Sorger.

Just as the dress from *six dresses* (fig. 1.1), I had crin ribbon hand embellished with random groups of three white bugle beads (see fig. 1.6) in the workshop in Mumbai so that when the final design was established, I could sew the crin ribbon by hand onto the dress. The production for *The Proxemic Dress* differs to the 2009 dress because the crin ribbon was applied by me, rather than by the crafts people in Mumbai, allowing me to experiment with iterations of where the ribbon would be most effectively placed on the base dress. I worked on an asymmetric design across the sleeves and the body, and the end result was very different to the 2009 dress produced for the *six dresses* collection (see figs. 1.1 and 1.11-1.15 for a comparison) because it lacked symmetry.



Fig. 1.6 The roll of crin (crinoline) ribbon with hand stitched groups of three white bugle beads prior to being stitched by hand onto the base dress. Eighteen meters were used in the production of *The Proxemic Dress*. Photograph © Richard Sorger.

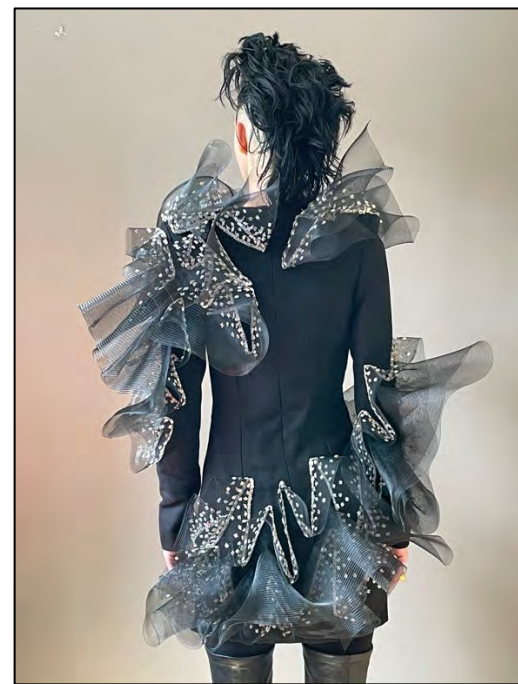


Figs. 1.7-1.8 The final version of *The Proxemic Dress* 'drawn' with 'fashion tape'. Photographs © Richard Sorger.





Figs. 1.9-1.10 *The Proxemic Dress* in the process of having the embellished crin ribbon sewn on by my hand, following the lines of 'fashion tape'. Once the crin ribbon is sewn on, the 'fashion tape' is removed. Photographs © Richard Sorger.



Figs. 1.11-1.12 The finished *Proxemic Dress*, photographed in May 2022. Photographs © Richard Sorger. Model: Hannah Martin.



Figs. 1.13-1.15 The finished *Proxemic Dress*, photographed in May 2022. Photographs © Richard Sorger. Model: Hannah Martin.

As well as producing *The Proxemic Dress* for the conference I presented my first paper, also called *The Proxemic Dress* (see *Appendix 2* for *The Proxemic Dress* paper). This is when I first discussed my practice as research and the use of embellishment to explore notions of space, citing examples such as proxemics, artists whose work can be said to explore space; Naum Gabo's stereometric method (a sculptural technique where implied space or volume became an essential component of the sculpture itself, discussed later in this chapter and see figs. 1.16-1.17), Cornelia Parker's *The Maybe*, 1995 and 2013, and

*Imponderabilia*, 1977, (see Chapter 6, fig. 6.85) by Marina Abramovic and Ulay (Frank Uwe Laysiepen), as well as examples from the history of dress that are concerned with bodies and space such as crinolines. This was the first time I began to frame my practice as research and the first instance of my practice leading research. I revisit some of the examples used in *The Proxemic Dress* paper, such as *Imponderabilia*, in Chapter 6, and examples from the history of dress that are concerned with bodies and space in Chapter 3, part of my contextual review for this thesis.

## Practice as research

The notion of practice as research is complex and still being defined by academics. This section looks at nuanced terms ‘practice as research’, ‘research for design’, ‘research through design’, ‘practice research’, and ‘practice research in design’, using discussions by Frayling (1993), Vaughn (2017), Bulley and Şahin (2021), Kaszynska et al. (2022), and how these discussions are used to frame my practice as research, and how this research is used for design. As mentioned in beginning of this chapter, I have summed up all these discussions with the hybrid term ‘design as research’, and this will be the term most commonly used throughout this thesis.

## The discussions surrounding practice as research

In this section I discuss approaches to research *for* design, research *as* (or *through*) design and how I use these methods in my project. Christopher Frayling, academic and writer, explains that research *through* art and design differs from research *for* art and design in that in the latter the artefact is the research (Frayling, 1993: 5 ; Vaughn, 2017: 10), but this research or knowledge gained by doing research *for* art and design can be applied *through* practice enabling ‘new design knowledge to be seen and exist in the world’ (Vaughn, 2017: 10). Research *through* art and design is where the artist/designer explores materials, the development of work such as augmenting or customising an existing technology or ‘doing something no one had considered before’ (Frayling, 1993: 5). This type of research uses a research diary or journal recording step-by-step practical experiments undertaken by the designer and forms an essential aid to completing action research (Ibid., 5).

My project employs research *for* design because it culminates in the realisation of artefacts in the form of embellished garments. I am also researching *through* design because of my experimentation with materiality and techniques and my use of a research journal has been essential to my methodology; my use of what I term the 'Reflective Design Journal' (a notebook where the practice for this study is recorded) will be discussed in more detail in the section below (see section 'Reflective Design Journal (RDJ)' and figs. 1.26-1.27 and further illustrations throughout this thesis).

The researchers Bulley and Şahin (2021) define 'practice research' as when 'practice is the significant method conveyed in the research output' (2021: 30). Kaszynska et al. (2022) extrapolate from this, discussing 'practice research in design' which has three conditions of a 'Triple S' scheme to be defined as such; 'situational', 'situated' and 'situating' (2022: 2). 'Situational' refers to 'specific situations and through situational transformation, generating insight into those situations' (Ibid., 2). My practice experiments with materiality and technique and situates these on the body and out to space and further discussion of this will take place in Chapter 6. 'Situated' refers to practice 'in relation to existing and relevant bodies of research' (Ibid., 2). I will discuss relevant literature about embellishment and examples of other practice and practitioners in Chapters 2 and 3 which form the contextual review of this thesis. The final of the three S's 'Situating' is a contribution to knowledge which I will discuss in the conclusion to this thesis.

According to the researchers Kaszynska et al (2022), Frayling's discussion of research for design is problematic because his reference to 'research' does not conform to their three conditions ('situational', 'situated', 'situating') because in Frayling's context, 'research' does not necessarily contribute to new knowledge (Ibid., 20). However, Frayling's terms have been useful to signpost the methodological approach to my practice. I apply the principle of 'research for design' and 'research through design' to my practice, but also situating my practice by discussing my contribution to knowledge.

## Post-conference, pre-PhD

It was after the *Body + Space* conference in 2014 that I had a short period of ‘blue-sky thinking’, reflecting on the work I produced for the conference, both practical and theoretical. I made notes about the future possibilities of embellishment and my practice, some fantastical and some more realisable, and how I might develop new techniques that explore proxemic space, develop new techniques for embellishment and how my approach to new work could be framed as research *for* and *through* design and design as research.

Foremost in my mind was the development of new embellishment techniques and how to conceptualise embellishment rather than thinking of it in purely aesthetic and commercial terms, which was required when I was producing designs for my brand. I explored some of these ideas as part of the current research, including growing embellishments using chemistry (salt and copper sulphate crystals) and biology (fungi), and these are discussed further in Chapter 4. However, the most successful outcome of this study is the development of a new technique for fashion embellishment that uses sculptural tools (tensegrity and the stereometric method, discussed later in this chapter) to engage with the body and space and this is discussed below. This new technique is called ‘the tensegrity technique’, but before I can discuss this technique further, I need to introduce some of the sculptural and conceptual tools that make the technique possible; tensegrity and the stereometric method, both founded in sculptural theory and practice.

## The stereometric method

In 1915, The Russian Constructivist artist Naum Gabo developed a revolutionary sculptural technique where for the first-time the implied space or volume became an essential component of the sculpture itself. Gabo termed this revolutionary sculptural technique ‘the stereometric method’ (Sidlina, 2012). ‘Stereometry’ is an archaic word in English, but in Germany in 1895 it was defined as ‘the branch of geometry which deals with three-dimensional space’ (Hammer & Lodder, 2000: 51).

Between 1915 and 1917, Gabo explored the body, space, and volume, through a series of figurative sculptures such as *Constructed Head No.1* (1915), *Constructed Head No.2* (1916) (see fig. 1.16), *Constructed Head No.3* (1916/7), and *Constructed Torso* (1916/7), that had an open cellular construction; ‘they were assembled, like a house of cards, from carefully cut out cardboard planes. The honeycomb-like pockets of air of which the paper and card structure was comprised replaced the volume and mass of traditional stone and bronze sculpture’ (Sidlina, 2012:27). Gabo represented implied space and volume through the absence of traditional sculptural solidity. He implied the mass of the body through the use of space between solid planes. I apply Gabo’s implied space to make visible the proxemic volumes of space that surround the body. There are also direct comparisons between Natalia Sidlina’s description of Gabo’s stereometric sculptures and the tensegrity technique developed for this study; both are assembled like cards and slotted together.



Fig. 1.16 Naum Gabo *Constructed Head No.2*, 1916. Photograph © Nina and Graham Williams.

In 1930, in order to demonstrate the stereometric method, Gabo created two cubes (fig. 1.17) from painted plywood with the intention of illustrating ‘the main differences

between two representations of the same object' (Sidlina, 2012: 30). The first cube was a solid, closed form, which represented a volume of mass. The second cube opened inwards, representing 'the space in which the existing mass is made visible. Volume of mass and volume of space are, sculpturally speaking, not the same thing. Indeed, they are two different materials' (Gabo & Read, 1957: 168). Gabo is making visible the volumes of 'the body', but not the volumes or space that surround the body.



Fig. 1.17 Naum Gabo *Two Cubes (Demonstrating the Stereometric Method)*, 1930. Photograph © Nina and Graham Williams.

The stereometric method is a sculptural tool that, when applied to my practice, has the potential to make embellished volumes visible. This 'implied volume' can extend beyond the surface of the fabric out to the space that surrounds the garment and, when worn, the body. Gabo used the stereometric method to imply the solidity of his sculptural forms and his representation of the body. My use of the stereometric method takes this implied volume beyond the surface of the body. This use of the stereometric method for embellishment, first for *The Proxemic Dress* and then later in the practice produced during this research, allows me to conceptualise, embody and make visible the volumes of space beyond the surface of the body and dress for the first time.

## **The application of the stereometric method to proxemics**

The implied space that surrounds the body, and by extension the individual, are proxemics as defined by Edward T. Hall (Hall, 1966: 1). For the purposes of this study, I am mostly concerned with Hall's notions of 'personal distance' and 'intimate distance' (see

fig. 1.2 and these notions of proxemics will be further explained in Chapter 6); these concepts, according to Hall, are the most immediate proxemic spaces to the body and as such my practice has the potential to explore and make visible these proximities. Personal space is invisible, intangible. It is conceptual rather than concrete. It is an 'implied space'. By using Gabo's stereometric method of implied volume for embellishment it is possible to make visible this invisible, intangible, and implied proxemic space. But to do this, I need to blend these tools and theories with another sculptural tool; tensegrity.

## Tensegrity

Tensegrity enables embellishment to be the intersection between the body and space. It is the tool that enables the application of the stereometric method to the proximity of the body via garment, making the implied intimate distance of the body visible.

Tensegrity is the tool that physically connects the surface of the garment (and by association the body) out to space.

The engineer Richard Buckminster Fuller is credited with first using the term tensegrity in 1962 in relation to the sculptures of the artist Kenneth Snelson (fig. 1.18-1.20). Tensegrity a merging of the words 'tension' and 'integrity' (Dieffenbacher, 2013: 67, Heartney, 2013: 20 and Snelson, 2012: 72/2 of 11), however the architectural researcher Esther Rivas-Adrover in *Deployable Structures* (2015) suggests that it is the merging of 'tensile' rather than 'tension' (2015: 90). Snelson himself refers to his sculptures as 'discontinuous compression, continuous tension structures' (Snelson, 2012: 73/3 of 11). One of the factors, or forces, of Snelson's sculptures is tension; "These mechanical forces, compression and tension or push and pull are invisible—just pure energy—in the same way that magnetic or electric fields are invisible" (Snelson quoted in Heartney, 2013: 20). However, through Snelson's constructs, these forces are made visible (Ibid., 16). Snelson's structural sculptures offer 'visible manifestation of internal forces': tension. The art historian Eleanor Heartney argues that the 'limitations of materials (wire and metal tubing) can become sources of beauty' and that 'the elegance of these sculptures rests on the principle of non-redundancy—that there is nothing extraneous—no element that can be removed without affecting the integrity of the whole' (Ibid., 30). Heartney's statement



about Snelson's sculptures also applies to the technique and the structures produced for this project that I will begin to discuss next.

These interdisciplinary tools and theories are necessary to produce new fashion practice and enable me to build out to, and question, space from the perspective of embellishment, body, and garment.

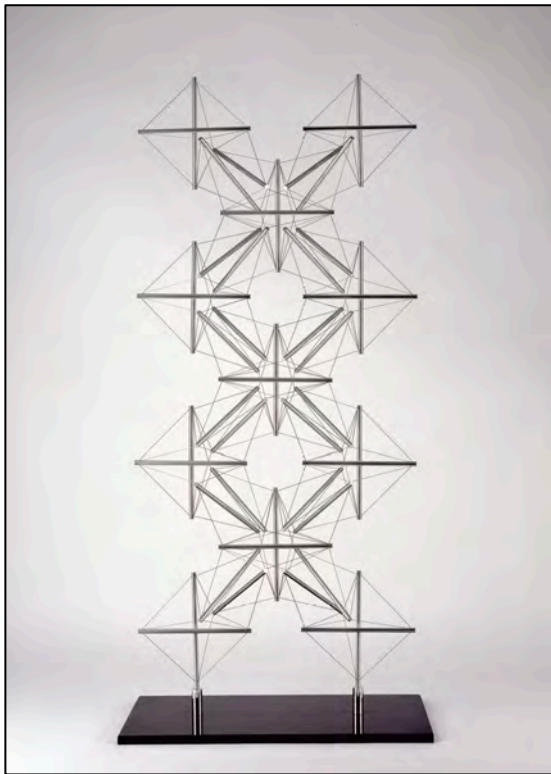


Fig. 1.18 Kenneth Snelson *X-Planar Tower*, 1962-88. Photograph © Kenneth Snelson 2013

Fig. 1.19 Kenneth Snelson *Sigma Data II*, 1975-93. Photograph © Kenneth Snelson 2013



Fig. 1.20 Kenneth Snelson *Audrey II*, 1966. Photograph © Kenneth Snelson 2013

## The Tensegrity Technique

The technique used for the embellishment of *The Proxemic Dress* made visible the implied proxemic space of the body by using Gabo's stereometric method and it was the first time I applied the use of sculptural tools to the production of embellishments, making visible the invisible spaces surrounding the body. The practice I developed using the tensegrity technique differs greatly from *The Proxemic Dress*, in terms of materiality and construction (see figs. 1.1 and 1.24-1.25 for a comparison), but it still explores the proxemic space of the garment and body and employs sculptural tools (tensegrity and the stereometric method) to make visible these implied, personal spaces. The initial idea for this technique came from children's stacking cards (fig.1.21), where one card slots into the other and they can be built out to space, and it was also partly inspired by Gabo's stereometric sculptures.

This is the first time that tensegrity has been used for fashion embellishment. However, it has been used to produce garments by Aura Taylor, an MFA (Master of Fine Arts) in Fashion Design student at the Academy of Art University in San Francisco (Dieffenbacher,

2013: 63). However, Taylor does not use tensegrity for embellishment and the technique is used to space the garment from the body (see figs. 1.22-1.23), whereas my practice explores the space beyond the surface of the garment.



Fig. 1.21 Children's stacking cards. The slots in the cards enable the building of structures and the principle is similar to Naum Gabo's stereometric method of construction. Image from eamesoffice.com.



Figs. 1.22-1.23 Aura Taylor's garment designs using tensegrity to space the garment from the body. This can be seen on the shoulders and lower back of the dress. Photographs © Júrate Veceraite.

It is necessary to now describe how the tensegrity technique is constructed and unless otherwise stated, this basic technique remains the same through all the iterations described in subsequent chapters.

Two sequins (in the first instance, 3cm clear plastic) are folded in half, and these are sewn, or 'grafted', onto the fabric 'back-to-back' creating a 'fin'. I use the term 'grafted' because it suggests that the sequins are inserted, or transplanted, onto the fabric, joining both and becoming one and the same<sup>6</sup>. In future discussions of this technique, I will refer to the fabric as the 'base fabric' and the sequins that are grafted onto the base fabric will be referred to as the 'base sequins'.

The fin of the base sequins is then notched (a cut made in the sequin using a notching tool, more commonly used in the practice of pattern cutting for clothing) and another sequin with a corresponding notch is inserted, slotted, into the notch of the base sequins. This sequin is termed the '1<sup>st</sup> insertion' as it is the first insertion into the base sequins. The 1<sup>st</sup> insertion is then tethered to the fabric and base sequins using tensegrity; thread at a tension, from the base fabric through the base sequins, and then through pierced holes either side of the notch in the 1<sup>st</sup> insertion (fig. 1.26 and Chapter 4, figs. 4.6-4.7 and RDJ pages figs. 4.1-4.4). This sequin can also be viewed as being both inserted and grafted onto the existing base structure and each subsequent sequin added to the structure is a part of the whole.

Further notches can be made in the base sequins' fin in order to add more 1<sup>st</sup> insertions. Notches can also be added to the top edge of the 1<sup>st</sup> insertion so that a '2<sup>nd</sup> insertion' sequin can be added (this technique and iterations will be further discussed in Chapter 4). Both sequins and thread in tension create relatively stable structures that can be applied to the fabric, garment, and body. Each individual structure is termed a 'tensegrity structure' and the application of multiple tensegrity structures to the body, represented by a mannequin, can be seen in figs. 1.24-1.25. These begin to create and make visible

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<sup>6</sup> This notion that fabric and embellishment become supplements of each other will be discussed further in Chapter 4 when I discuss Jacques Derrida's 'supplementarity'.

the stereometric volumes around the mannequin and this will be further discussed in Chapter 5.

As discussed in the previous section, Heartney argues that the ‘limitations of materials (wire and metal tubing) can become sources of beauty’ of Snelson’s structures, and that ‘the elegance of these sculptures rests on the principle of non-redundancy—that there is nothing extraneous—no element that can be removed without affecting the integrity of the whole’ (Heartney, 2013: 30). This ‘principle of non-redundancy’ also applies to the tensegrity technique, where all components are essential to the structure.

The development of the tensegrity technique engages with the materiality of embellishment as well as sculptural applications to the body, enabling discussion about bodies and/in space. This technique, its development, iterations, and outcomes, will be discussed in chapters 4, 5, and 6. I now discuss the practice-led methods and tools used in the production and evaluation of my practice.

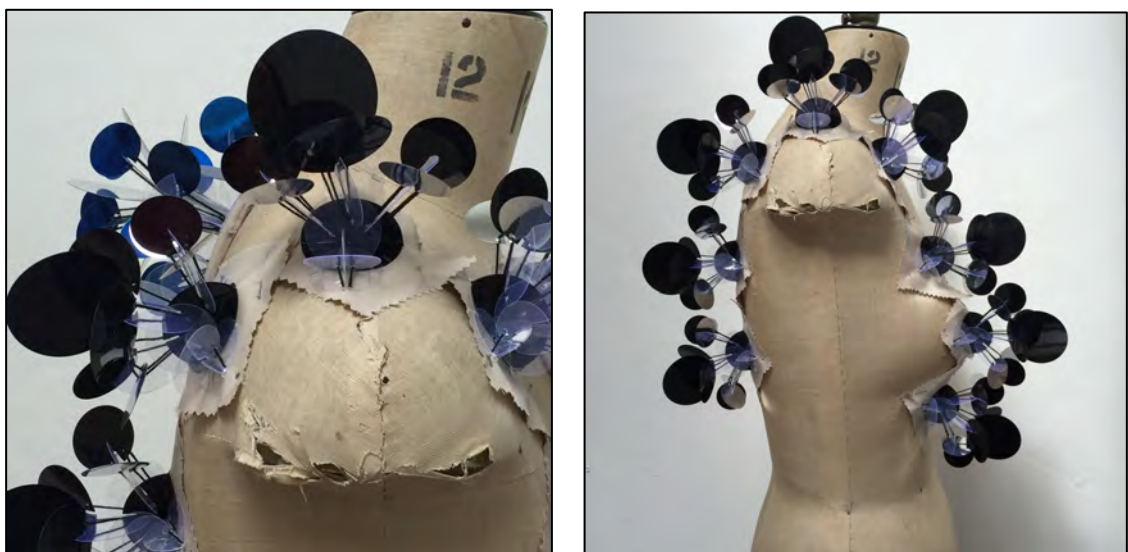


Fig. 1.24-1.25 Example of the tensegrity technique applied to a size 12 dress mannequin. The placement of these tensegrity structure was most effective when seen in profile. Photographs by Richard Sorger.

## How the practice for this study is made

According to the academic writers Binder et al. (2011: 121) ‘theory has a role in explicating why design works, but it does not tell how to create good designs’ as design can be subjective and instinctual. The subjectivity that enables the practice of a designer

can be both a 'tool for making creative jumps as well as being a handicap in research unless one reflexively engages with it' (Crouch & Pierce, 2012: 20) and one of the challenges of a designer who engages academically with research is how to articulate what informs instinctive decision making. In order to articulate this 'gut feeling' approach to design choices, I am applying methods for practice-led research such as 'research for design', 'research through design' and 'reflection as method' to my practice.

## **Reflection as method**

Schön (1983: 49) refers to 'reflection-in-action' which is used by practitioners to deal with situations of 'uncertainty, instability, uniqueness, and value content' (Schön, 1983: 50) where tacit knowledge of previous practice can be employed in the evaluation-in-progress of the task in hand ('knowing-in-action' or 'knowing-in-practice'; Schön, 1983: 50 & 61). Crouch & Pierce (2012) extrapolate from Schön's notion of 'reflection-in-action'; 'reflection on' and 'reflection in' practice. 'Reflection on' practice is actioned after the practitioner has finished the 'task' and is able to consider why certain decisions were made. 'Reflection in' practice is the thinking undertaken during the practice or 'doing' (Crouch & Pierce, 2012: 45). As a designer, this approach to practice is instinctive but not often articulated; for the purpose of this project, it is necessary to formulise this process as a methodology that I employ to enable the evaluation of my practice as evidenced in what I term my 'Reflective Design Journal'; a book of notes and reflections written during and after a period of practice employing both 'reflection on' and 'reflection in' practice and will be discussed below (see the section 'The Reflective Design Journal (RDJ)' and figs. 1.26-1.27).

## **Thinking through making**

'Thinking through making' is another phrase for the nuanced terms for reflection referenced in the section above. It is a methodology that I encourage in my fashion students to test ideas, but it is also where innovation occurs; some things cannot be imagined in 2D on paper and a 3D experiment can lead to further experiments and ideas using reflection and thinking *during* making. Naturally, what is good for the student is also good for the tutor and I employ 'thinking through making' and 'thinking during making',

both reflection as a method, in my practice. However, to further unpack these two methods of reflection, ‘thinking during making’ suggests reflection *in* the process of making, and ‘thinking through making’ is slightly more ambiguous, suggesting that reflection can happen during and *after* practice.

The ‘making’ that I refer to here and in terms of this project is my practice and this takes the form of a series of experiments. These experiments are recorded using my Reflective Design Journal (discussed in the next section) as one of my key practice methods.

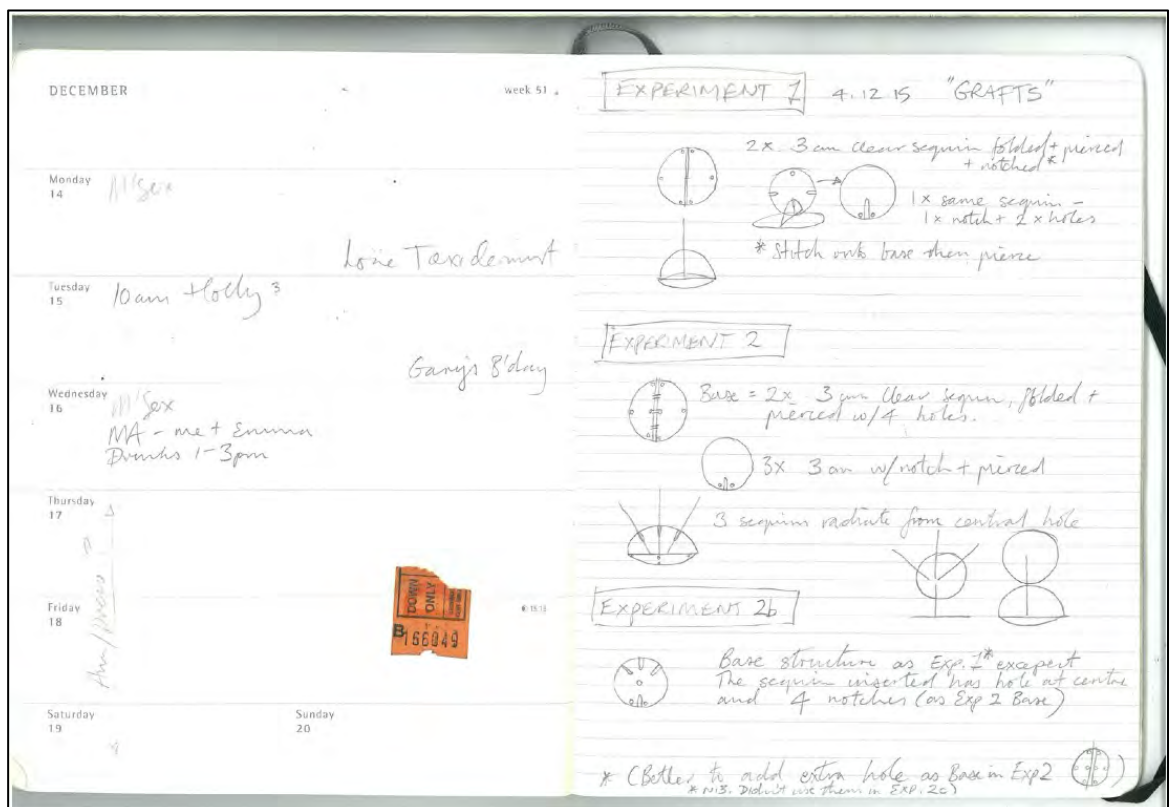


Fig. 1.26 The first page from the Reflective Design Journal 04.12.15. In fact, a page in my Moleskin diary for 2015. A dedicated book was used for the RDJ from 2016 onwards. Photograph © Richard Sorger.

## The Reflective Design Journal (RDJ)<sup>7</sup>

I developed the tensegrity technique (discussed earlier in this chapter) very quickly (see fig. 1.26), but it was through a series of experiments that I was able to test its applications

<sup>7</sup> Illustrations of the pages from the RDJ are included throughout the thesis. Larger illustrations of all the pages from the RDJ can be seen in *Appendix 4*.

for my practice (See chapters 4, 5, and 6) and these were recorded in my Reflective Design Journal (hereafter abbreviated to 'RDJ').

My research focuses on controlled experimentation using 'variables around a theme' (Ambrose and Leonard, 2012: 136) rather than open-ended experimentation which allows for the addition of elements 'together to see what happens without a strict rationale' (ibid., 136). Most of my experiments recorded as part of this project explore the same materiality (sequins/beads/thread) and use the same technique (the tensegrity technique) and these will be discussed in Chapters 4, 5, and 6. Experiments that explore the addition of elements, but which cannot be controlled by me -experiments with chemistry and biology- will be discussed in Chapter 4. However, these experiments proved to be too open-ended and 'without a strict rationale' and were ultimately discarded.

My first experiments were recorded in the early version of my RDJ which was notes made in my 2015 diary, but it quickly became apparent that the RDJ was fundamental to the recording and thinking of my methodology. The RDJ not only records my experiments, but it is also where I reflect on my practice, make diagrams, test ideas, and think.

I began to hand-write notes immediately after completing *Experiment 1* (4.12.15) in December 2015 as a method of recording my experiments, the process, and my thoughts. Through writing about this practice, I began to develop the language I use when discussing the tensegrity technique, such as 'grafts' and 'insertions' (see fig. 1.26). I also immediately developed a visual language for note-making through simple diagrams. By using both types of language to record my practice, my objective is that my experiments can be replicated not only by myself, but by other practitioners.

Experiments are given numbers or names, and the date of the experiment is recorded (DD.MM.YY). If an experiment is a development from another experiment, following the same structural start, then 'a, b, c,' etc. is added after the number. If there is no date next to an experiment number, it means that the experiment happened on the same day as the last date seen. The notes and diagrams are written during and after the experiment



on the date stated (thinking through making). My first entries were made in my large Moleskine diary on 4th December 2015 (see fig. 1.26), but in January 2016 I started to use a dedicated soft-cover Moleskine 19cm x 25cm notebook and this is the book that the rest of my practice for this study is recorded in (see fig. 1.27 for the first page of this dedicated book).

My notes are handwritten in pencil, my media of choice because of its potential for producing a tonal mark, but also because it can be erased. It is also a softer mark than a pen, less permanent and therefore I am less self-conscious about committing thoughts and diagrams to paper.

The drawings in my RDJ are rendered quickly and confidently and I decided in December 2015 when I started to make notes, that I am not concerned with 'perfect' drawings; rather they are visual notes on the construction and application of my experiments. The diagrams are embedded in the text throughout to enable me to recreate the experiments later if I so wish, but they are also a visual record of my practice and in many instances, they are more immediately understood than the text. Very rarely have I used an eraser to correct a drawing and I embraced the imperfection as part of the practice. Drawing so many circular sequins perfectly would have been impossible. The only perfectly drawn circles are the templates used to help with notching the sequins; these are circles that have been bisected by four lines, dividing the circle into eight equal sections (see fig. 1.27). By placing a sequin of the same size over this template, I can mark where I want notches on the sequin using a black indelible felt tip, which is then removed when cut.

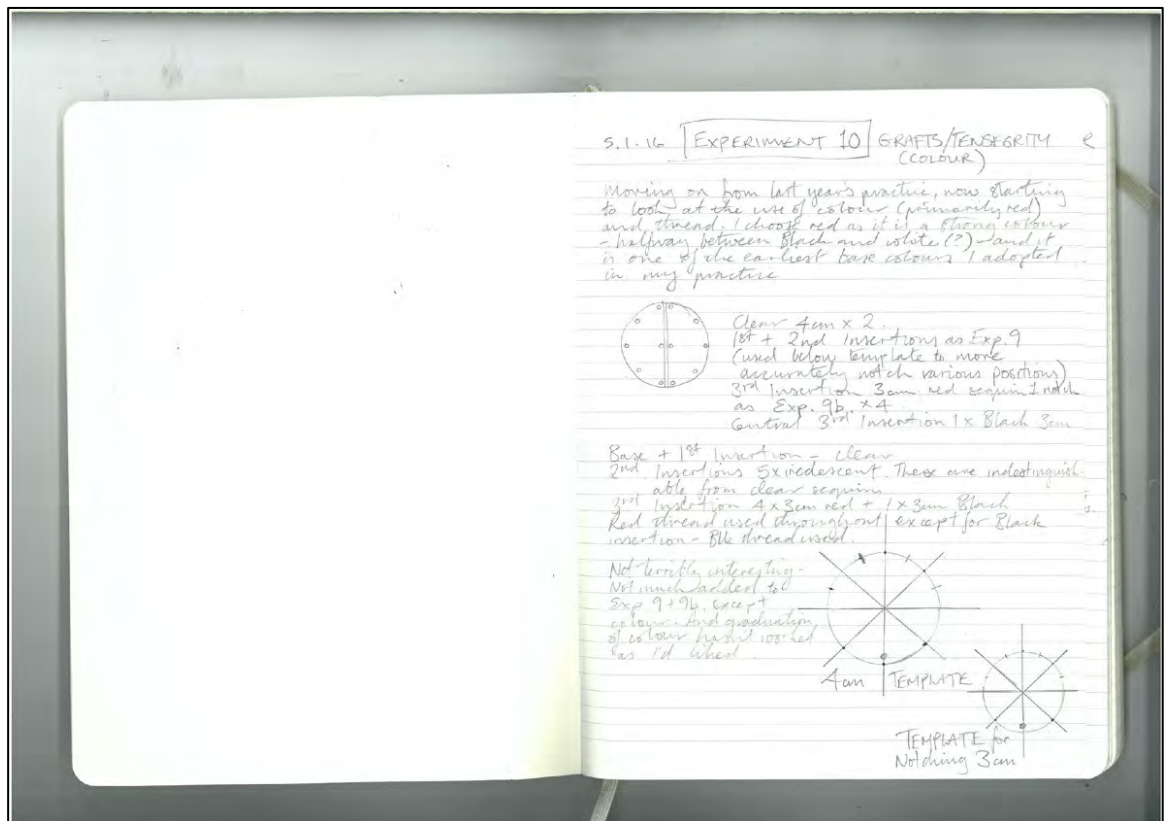


Fig. 1.27 A page from the RDJ 05.01.16, showing a template for sequin notches in the bottom right corner. This is the first entry in a dedicated RDJ book, rather than pages in my 2015 diary. Photograph © Richard Sorger.

The RDJ is unedited in the same way that I rarely used an eraser on a drawing; it is a method of recording my actions and thoughts at the moment they happened, or soon after (reflection in and reflection on practice), and it was intended to be an honest document of my practice.

The RDJ allows me to reflect on my practice during the experiment. Producing each structure can be time consuming and so there is plenty of time during the process of making to reflect on what I am doing and what its application might be. I would pause from the physical act of making a structure to write, using it to record my process and thoughts, as well as using it as a break from the practice itself; the work can be tiring because it is repetitive and requires intense concentration.

## The dynamics of practice versus theory

Practice and theory have developed together, though not at the same time as one or other of the activities is too consuming to divide my focus. There are several key periods

of productivity in terms of my practice, and these would be at erratic points in the year, meaning that there is no clear pattern to this productivity, other than these periods would last several days at a time, as evidenced in the RDJ. However, no practice took place in 2017 and there was a ten month break between June 2018 and April 2019, and a year between September 2019 and October 2020. Although I have not kept as clear a record of when I was in a period of reading and writing for this project, these three long breaks between practice are indicative that I returned to a sustained period of engagement with theory and writing (see *Timeline of practical and theoretical investigation* in the introduction of this thesis).

## Evaluation of my practice

As an experienced designer, I have been required to judge my own practice in terms of if a design or technique is successful. Previous criteria for this evaluation were subjective; aesthetic and commercial. The criteria considered if the design was aesthetic in terms of colour, proportion, etc. and did it have commercial value (would it sell?). This was a form of 'reflection in action'. The initial evaluation of a design was by myself, but there were other stake holders such as sales agents and stylists that I could consult to confirm, challenge, or moderate my opinion.

This study is different to earlier practice in that it is practice-led research, unconcerned with commercial considerations and more concerned with use of, and the development of, theory to conceptualise my practice. The embellishment practice for this study is much more three-dimensional than previous work which generally existed solely on the surface of the fabric and was more graphic and figurative in nature (see Introduction fig. 0.1-0.18, and Chapter 4, figs. 4.16-4.17 and 4.21-4.22). My research and practice are now what the design researchers Ambrose and Leonard refer to as 'pure research; this is research conducted without constraints of commerce' (Ambrose and Leonard, 2012: 30), and engages with notions of practice as research as discussed by Frayling (1993), and Vaughn (2017), Bulley and Şahin (2021), Kaszynska et al. (2022), and using methodologies as outlined by Schön (1983), and Crouch & Pierce (2012) and discussed earlier in this chapter.

The RDJ is where this evaluation takes place. I employ the criteria listed below to evaluate my practice using 'reflection in action'; 'reflection in practice' during the process of doing, and 'reflection on practice' after the experiment is completed; examples of this reflection can be seen in the hand-written notes made during and after experiments in the RDJ.

## **Practice evaluation criteria**

I evaluate if my practice is successful if-

### Intention

- the technique challenges conventional and historical methods of embellishment using evaluation and reference as a measure; 'research for practice'.
- the technique or embellishment explores and embodies practice using the stereometric method and tensegrity.
- the embellishment is stable (N.B. Embellishments are generally not fragile, but neither are they robust enough to survive rough treatment, such as machine washing).
- notions of body and space are embodied through practice, applying the stereometric method and tensegrity to explore proxemics.

### Action

- the embellishment can be applied to a material (fabric).
- the technique/embellishment can be applied to the body through a garment as carrier.
- the structures can supplement the surface of the fabric and build into proxemic space.
- the structures are three-dimensional and enable building out to space incrementally.

After a single experiment or a group of experiments I will reflect on whether the action achieved the intention, using the below table.

Intention	Action		Reflection
1		✓/✗	
2		✓/✗	
3		✓/✗	
4		✓/✗	
	5	✓/✗	
	6	✓/✗	
	7	✓/✗	
	8	✓/✗	

I will record my practice using the below methods-

- Experiments and outcomes will be photographed at key stages during their development, and these will be used to illustrate this thesis.
- Notes and diagrams are made in the Reflective Design Journal recording experiments, iterations, and the development of technique enabling replication by myself or other practitioners.
- ‘Reflection in action’, ‘reflection in practice’, and ‘reflection on practice’ are recorded using my Reflective Design Journal.

## **Rationale; intertwining practice and theory in new ways**

I have developed this study to record a holistic overview of the histories and practices of embellishment, having identified a gap in knowledge about the subject of embellishment, as discussed in the Introduction of this thesis as well as in Chapter 2.

It is also the first time that embellishment has been used to embody selected theories about the body and space. These theories, such as selected fashion theories by Malcolm Barnard and Joanne Entwistle (discussions of the fashioned body, the decorated body, and fashion and clothing as prosthesis, examined in Chapter 5), Jacques Derrida’s concept of supplementarity (as discussed in Chapter 4), selected spatial theories (tensegrity and the stereometric method, introduced in this chapter and further discussed in Chapter 6), are discussed throughout the thesis and how they pertain to my practice.

Finally, for personal reasons I have undertaken this study to develop myself as an academic and practitioner. Through my academic career of thirty plus years (I started teaching in 1991), I have responded to the subject of fashion as a practitioner, following a 'gut instinct'. Through my engagement with this research and in particular theory, my analytical skills have improved greatly, and I am better able to articulate the 'what', 'how' and 'why' in a situation, whether in my teaching or in my role as an academic.

# **Chapter 2: Contextual Review; Material and Technique**

## **Introduction**

Chapter 2 and Chapter 3 of this thesis form the contextual review of my PhD study. This chapter is concerned with the first key theme of my research; 'material' and I will discuss the most common components (materials) for fashion embellishment; sequins, beads, and thread. I examine the selected history and materiality of these components, before discussing new innovations in terms of materiality towards the end of this chapter. In this chapter I will also discuss the development of techniques used for fashion embellishment such as the tambour beading, and the machines that can apply sequins and beads to the surface of a fabric.

## **Part 1: Material; The components of embellishment**

The most common components of embellishment are sequins, beads, and thread. These components are the building blocks of embellishment, and they make possible the exploration of proxemic space for this study.

### **Sequins**

The term 'sequin' is relatively new; Edwards' (1992: 48) research suggests that the term was not in use before the middle of the nineteenth century. The small, perforated discs we now commonly refer to as 'sequins' were previously subdivided into 'paillettes', 'couvettes' (both French words) and 'spangles'. Even though I explore the different definitions for each of these terms in this part of the contextual review, for the purposes of this project, I use the term 'sequin' in relation to my practice as it is commonly used to encompass all types of these perforated discs used for embellishment.

## Origins

Historically, writers on the subject of fashion embellishment such as Saint-Aubin (1770), Edwards (1966) and White (1994), have suggested that the use of embellishment on clothing has existed for as long as records of clothing exist. Garments discovered in King Tutankhamun's (1341 B.C.-1323 B.C.) tomb were found with 'gold sequin-like discs' sewn onto them (Spivack, 2012). Examples of embellishment exist on ecclesiastical clothing in England dating back to the Middle Ages 'enhanced with pearls, enamels, and other ornaments' (Browne, et al. 2016: 1 & 7) (figs. 2.1, 2.3-2.6) and there are examples of embellishment on the clothing of Queen Elisabeth I in paintings dating from the 16<sup>th</sup> century (figs. 2.7-2.8). The Italian painter Ambrogio Bevilacqua (active c. 1481-1512) created the mixed media 'painting' *Madonna and Child* (1495) using actual sequins on the robes of the Madonna (Spivack, 2016).



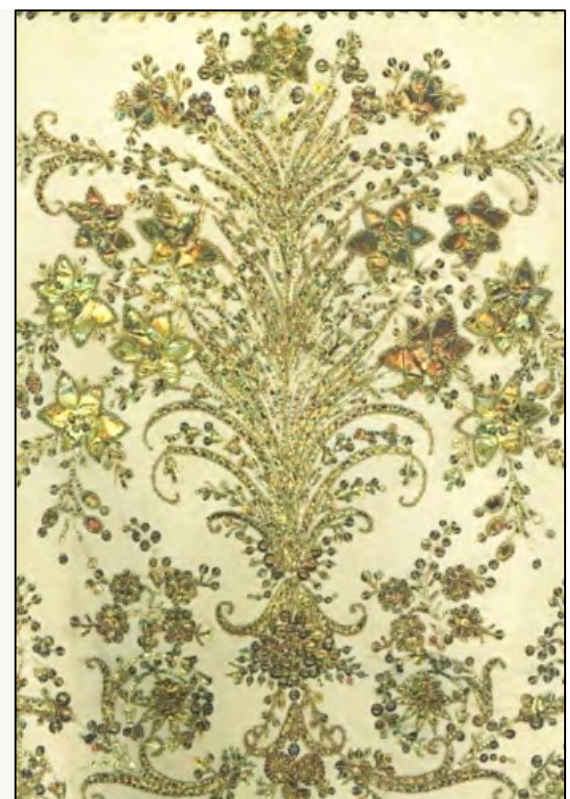
Fig. 2.1 Detail from the Butler-Bowden Cope, English, c.1335-45, showing the early use of pearls for embellishment. Photograph © Lisa Monnas for the V&A Museum.

Fig. 2.2 Detail from fragments of a horse trapper, English, 1330-40, showing the early use of pearls and stones for embellishment. Photograph © Musée de Cluny, Paris.





Figs. 2.3-2.4 Example of embellished ecclesiastical garment from 1854-56. Photographs © Katerina Jebb for the MET Museum, New York.



Figs. 2.5-2.6 Example of embellished ecclesiastical garment c. 1800. Photographs © Katerina Jebb for the MET Museum, New York.



Fig. 2.7 *The Rainbow Portrait* of Queen Elizabeth I (1600-1602), attributed to Marcus Gheeraerts. Photograph © Richard Sorger.

Fig. 2.8 *Portrait of Queen Elizabeth I* (1585), attributed to Nicholas Hilliard (1547-1619), the Queen's court artist. Photograph © Richard Sorger.

The Victoria & Albert Museum's earliest example of sequins used on a garment dates back to 1610 and the fashion curator Sonnet Stanfill suggests that examples of 'coins and precious metals (sewn) on to clothes to show rank' are to be found even earlier than this (Marriott, 2017) (see fig. 2.2). The design writer and curator Emily Spivack (2012) writes that between 1480 and 1482, Leonardo da Vinci sketched the design of a machine that would punch small discs out of a sheet of metal, and although it was never realised one of its applications could have been to make sequins. The design drawing is annotated by da Vinci as 'macchina punzonatrice' (see fig. 2.9) which translates as 'puncher device for the production of sequins' (Spivack, 2016), and if this was indeed the intended purpose of da Vinci's machine it suggests that the use of sequins was both popular and in demand at that time to warrant da Vinci's attention and Spivack suggests that the Sforza family, who da Vinci was possibly retained by at the time of his design, often wore sequins on their clothes.

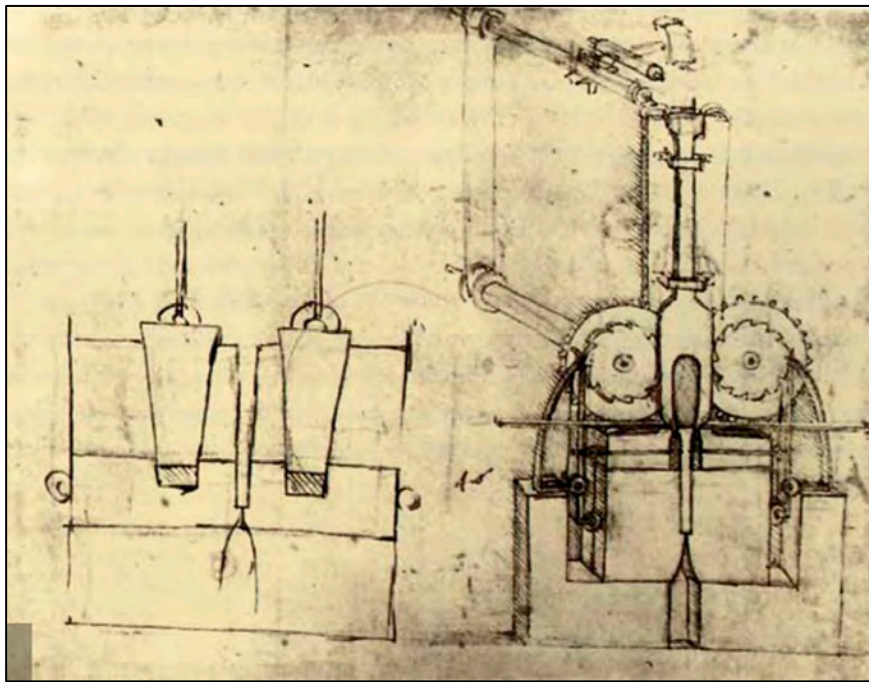


Fig. 2.9 Detail of Leonardo da Vinci's ink sketch for a sequin-making machine, c. 1480-82. Online image, original source not found.

### ***Definition of terms and types***

In the introduction to Charles de Saint-Aubin's *Art of the Embroiderer* (1983), Edward Maeder, Curator of Textiles and Costumes at the Los Angeles County Museum of Art, discusses some of the problems with the translation of the text from the original French to English for the first time. He cites the 'significant shifts in meaning which embroidery terminology has undergone in the course of the two centuries separating Saint-Aubin's time from our own' (1983: 10). Maeder gives the example of the word 'paillette'; 'people generally think of a paillette as a large spangle with two holes along its edge, rather than conceiving of the broader eighteenth-century category which was composed of a great variety of sizes, shapes, and materials' (1983: 11). The first time I encountered the word *paillette* was through the Scottish fashion designer Christopher Kane referring to the use of large sequins in his autumn/winter 2008 collection as 'paillettes' (Barnett, 2008. See figs. 2.10-2.12). In her review of the Kane Autumn/Winter 2008 collection, Leisa Barnett refers to 'paillette sequins' and later refers to just 'sequins', illustrating what is possibly a common misuse and confusion of terms (2008). It is possible that the contemporary use of the French word 'paillette' instead of the English term 'sequin' is because it sounds more sophisticated or exotic.



Figs. 2.10-2.12 Christopher Kane autumn/winter 2008-9. Photographs © Marcio Madeira for vogue.com.

Saint-Aubin briefly addresses the definition of sequins and paillettes in his 1770 text, which is slightly at odds with the definition that Edwards supplies in *Bead Embroidery* (1992) which goes into more detail about the difference between the two. In the translation of Saint-Aubin's text 'paillette' is the word used for all discs with holes in them and in the diagrams that accompany the text they appear to be what we commonly refer to now as sequins; small discs with a central hole. Pierced paillettes ('paillette percées') are also referred to in the text and in the diagrams (Pl.5, 1983: 44. See fig. 2.13). These are small 'infinitely varied' metal shapes with multiple holes around the edge. Saint-Aubin (1983: 45) notes that paillettes of darkened steel and black glass were introduced in 1756 for the use on mourning dress. 'Hardly a year goes by that someone does not invent some little novelty that fashion adopts and in turn dismisses' (1983: 45). In the glossary for Saint-Aubin's text, he cites other names for types of spangles, such as the 'comptée' and the 'Balzac', but it is not clear from the diagram of these sequins if there is a difference other than their size (Saint-Aubin, 1983: 70).

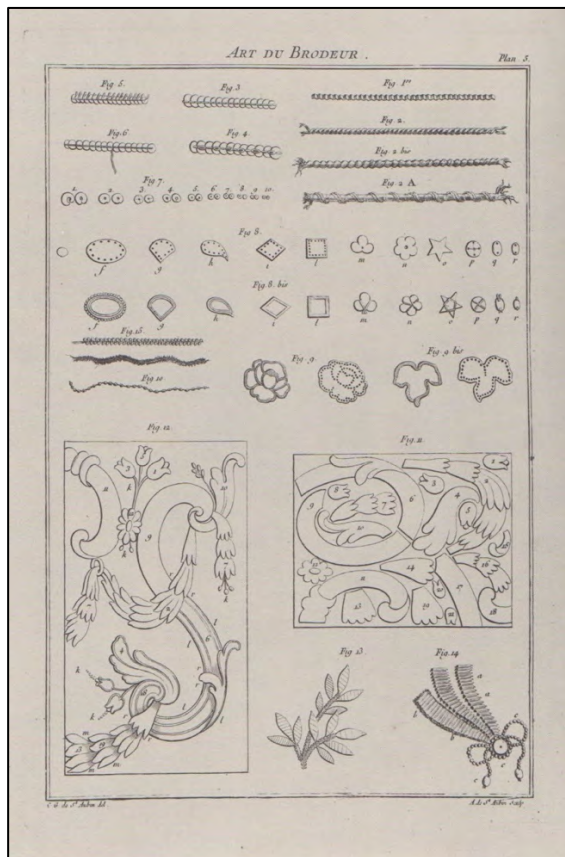


Fig. 2.13 Plate 5 from Charles de Saint-Aubin's 1770 text *Art of the Embroiderer* showing different sequin (paillette) shapes. Image from *Art of the Embroiderer* (1770), reproduced in Saint-Aubin, C. (1983). *Art of the Embroiderer*. Los Angeles and Boston, USA.



Fig. 2.14 Plate 4 from Charles de Saint-Aubin's 1770 text *Art of the Embroiderer* showing drawings of different embellishment designs. Image from *Art of the Embroiderer* (1770), reproduced in Saint-Aubin, C. (1983). *Art of the Embroiderer*. Los Angeles and Boston, USA.

The embroidery writer Mary Eirwen Jones refers to 'laminae' ('lama', 'paillons', 'spangles') which is the plural of 'lamina' and is defined in the Oxford English Dictionary as 'a thin plate, scale, layer, or flake (of metal etc.)'. Jones suggests that the term relates to cut shapes that are then applied to the surface of the fabric (Jones, 1984: 118). Saint-Aubin refers to these as 'lames' (foil). 'Paillons' are spangles cut from metal that have been varnished in different colours; 'larger than paillettes, they are sometimes coloured by Workers (sic) after being sewn in place' (Saint-Aubin, 1983: 75). Saint-Aubin describes a cutting tool (an 'emporte-pièce') that was used to cut a diverse range of paillette shapes from thin sheets of silver or gold (Saint-Aubin, 1983: 72 & 70).

Emily Spivack (2012) suggests that the etymological origin of the word sequin can be traced back to the Arabic word 'sikka' meaning 'coin' as well as the thirteenth century Italian word for gold coins produced in Venice; 'zecchino'. Edwards also suggests that the

term sequin originates from golden coins that were minted in Italy during the thirteenth century. In Italy, as well as being known as 'zecchini' (the plural of 'zecchino') they were also known as 'magete' and 'bysantini'. Edwards states that 'sequins have a trade name and are known commercially as *paillettes*; or if the disc is slightly concave as *couvettes*' (Edwards 1992: 48). If the sequin has a hole towards the edge of the disc and not in the centre, then it is known as a 'sequin'. Edwards refers to Denis Diderot's *L'Encyclopedie raisonne des sciences, des arts et des metiers Vol. II* (1762) where the illustrative plates refer to discs of all shapes and sizes as 'paillettes'. Edwards also refers to 'oes'; small eyelets of metal, mainly gold and copper, used for the embellishment of garments and became fashionable c.1575 when 'a certain Robert Sharp was granted a patent to manufacture 'spangles and oes of gold'' (1992: 50).

According to Leslie Piña et al. (1999), 'paillettes' 'originally referred to circular discs, measuring 2mm to 8mm, stamped from metal with a hole in the middle. In Elizabethan times, there also was reference to a 'spangle' which, like the paillette, was also circular and metal (sometimes gold) with a central hole (Ibid., 26). 'Spangle' was a term much used in the sixteenth century, with references to spangles or 'spangill's in the New Year gifts received by Queen Elizabeth I in 1577 (Edwards 1992: 50). The word paillette is unsurprisingly used in French texts about embellishment, whereas spangle is more common in English.

## **Materials**

Paillettes, spangles, and couvettes were all made from metal until the development of plastics in the early twentieth century. According to Cristina Balloffet Carr's essay in Morrall and Watt's *English Embroidery from the Metropolitan Museum of Art, 1580-1700: Twixt Art and Nature* (2008), 'expanded trading and developments in technology had led to an increased availability of gold, silver...' in the latter half of the sixteenth century (2008: 99). Here, Carr is arguably, though not explicitly stated, referring to the use of precious metals for embroidery, but their availability possibly meant that they were increasingly used for spangles. Spivack writes that in 1482 the Milanese Goldsmiths Guild denounced the use of brass and copper to produce lesser quality sequins that 'harmed the city's reputation' (Spivack, 2016). These early spangles were made using two

methods; there were either stamped out of sheet metal, or metal wire was coiled and then flattened (Ibid., 100) (see figs. 2.15-2.16).



Fig. 2.15 Detail from a cushion cover, England 1590-1610, with examples of spangles flattened from wire. Photographs © The MET Museum, New York.



Fig. 2.16 Detail of a pair of gloves, English, 1620s, with examples of spangles that have been stamped out of a sheet of metal. Photograph © The MET Museum, New York.

According to Spivack (2012), in the 1930s a technique was developed to electroplate gelatine, producing a lighter-weight alternative to metal sequins. However, these sequins were unstable and would melt if exposed to warm temperatures or if they became moist. These are possibly the same type of sequin Albert Lesage attempted to develop made from beef gelatine (ox gall) which he bought from butchers in Les Halle, Paris, France. He layered these, presumably, semi-transparent sequins on top of each other to create a fish scale effect. White recounts anecdotally that Lesage was woken one night by an angry

client whose dress had melted in the heat of the Paris Opéra, 'leaving her drenched in consommé' (White, 1994: 51).

Post the Second World War (1939-1945), Lesage turned to the use of rhodia, a plastic derived from cellulose acetate, and 'other synthetics' -not specified- in response to the needs and desires of the couturiers and 'what fabrics and textiles they might well push or develop' (White, 1994: 78). Rhodia and rhodoid are incombustible plastics made from cellulose acetate, a non-flammable version of cellulose nitrate (Mossman, 2008: 70), and in the form of transparent plastic sheets, would prove to be an appropriate material to make sequins from.

The American Herbert Lieberman developed a fragile acetate sequin with Eastman Kodak from acetate film (McCormack, 2005) The sequins were coated with coloured silver on one side so that light would be reflected back through the acetate, like a mirror. His company Algy Trimmings Co. based in New York, began manufacturing a more stable plastic sequin as well as producing the costumes they were used on. These sequins were plastic with a thin layer of Mylar coating (Mylar is a polyester resin developed by DuPont in 1952) and were durable enough that they could be put through a washing machine unscathed. Eventually vinyl plastic replaced these Mylar-coated sequins. Sequins made from metal mainly varied in shape and size, but with the advent of plastic a variety of colours and textures became possible (see fig. 2.17).

According to a caption in White (1994), in 1961 Cristóbal Balenciaga 'announces the arrival of plastic embroidery in Paris fashion' (1994: 108) The sample that was developed used indeterminate clear or pink plastic from sheets, hand cut into rough circles and embroidered over with chenille yarn, what looks like lurex thread, and rhinestones onto pink faille fabric (figs. 2.18-2.19). However, a detail from an embellishment developed by Lesage from Summer 1950 for Balenciaga shows the use of elongated and embossed plastic sequins to represent leaves (1994: 104) (fig.2.17). So, it can be argued that it was Balenciaga's use of plastic from sheets grafted to the surface of the eveningwear fabric that was revolutionary in 1961, rather than the use of plastic sequins which occurred earlier.





Fig. 2.17 Lesage for Balenciaga summer 1950 utilising various plastic shaped sequins. According to White (1994:104), this is one of the earliest examples of plastic used for embellishment in Parisian fashion. Photograph © Patrice Stable.

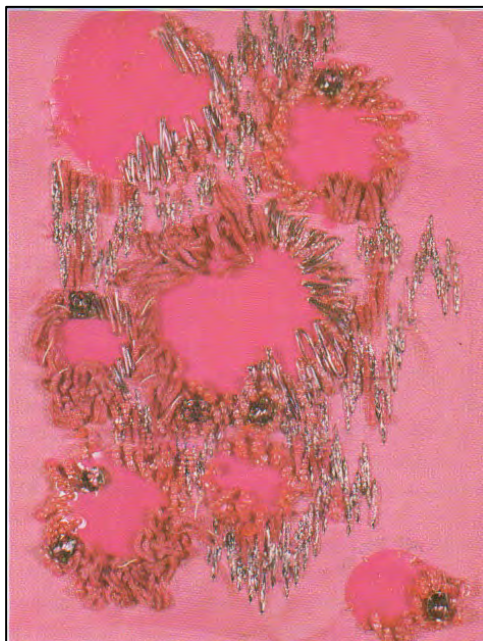


Fig. 2.18 Detail sample of embellishment by Lesage for Balenciaga 1961-62 using chenille, Melinex polyester film, and crystal beads. Photograph © Patricia Stable.

Fig. 2.19 The pink tunic embroidered by Lesage with chenille, Melinex polyester film, and crystal beads for Balenciaga 1961. Photograph © Gjon Mili for Getty Images.

From the 1960s to the present day, the main materials of sequins has remained static (metal and plastic) although their forms are not; such as the plastic six-petaled flower shapes used by Marc Bohan for Christian Dior in 1970 (White, 1994: 114) (fig. 2.20), Marc Jacobs' oversized plastic flowers for spring/summer 2012 (fig. 2.21), and Prada's

miniaturised metal ‘clockwork gears and tubes’, kitchen utensils such as knives, forks, spoons and corkscrews, and flattened bottle tops for autumn/winter 2006-7 (Bolton and Koda, 2012: 154) (figs. 2.22-2.23). One exception to the use of metal and plastic for sequins is the use of leather for sequins by designers such as Maurizio Pecoraro in autumn/winter 2004 (Rocca, 2006: 154), Ralph Rucci (date not specified) (Steele, 2007: 28) (figs. 2.25-2.26) and Prada’s cut out leather and suede sequins in the shape and size of maple leaves for autumn/winter 1999-2000 (Bolton and Koda, 2012: 116-117) (fig. 2.24).



Fig. 2.20 Detail of Lesage embellishment developed for Marc Bohan for Christian Dior in 1970. Photograph © Patricia Stable.

Fig. 2.21 Marc Jacobs spring/summer 2012. Laser-cut blue and white oversized plastic flowers attached to the surface of the fabric with clear crystals and metal studs. Photograph © Nicholas Alan Cope for the MET Museum, New York.



Fig. 2.22 Prada autumn/winter 2006-7. Double page spread from the book *Schiaparelli and Prada: Impossible conversations* (2021). Photograph © Toby McFarland Pond for the MET Museum, New York, 2012.



Fig. 2.23 Prada spring/summer 2007. Double page spread from the book *Schiaparelli and Prada: Impossible conversations* (2021). Photograph © Toby McFarland Pond for the MET Museum, New York, 2012.



Fig. 2.24 Prada autumn/winter 1999-2000. Double page spread from the book *Schiaparelli and Prada: Impossible conversations* (2021). Photograph © Toby McFarland Pond for the MET Museum, New York, 2012.



Figs. 2.25-2.26 Ralph Rucci's use of leather sequins (date not specified). Photograph © William Palmer.

### ***Sequins and sustainability***

According to the design writer Purva Chawla (2018), 33% of the material used to make sequins is wasted during the manufacturing process. To address this issue, the designer and researcher Rachel Clowes started the Sustainable Sequin Company to respond to the 'polluting and non-biodegradable materials that last much longer than the fleeting active

life of the (special event) garment' (Chawla, 2018). The company produces recycled PET sequins in various colours and shapes and are looking into developing biodegradable sequins in the future. Clowes' MA project at the UAL London College of Fashion saw her developing an organic bio plastic-sequin made from starch, natural dye, water, and fruit glycerine which disintegrated after a few wears of the garment, releasing the natural dyes of the sequin onto the garment (Chawla, 2018). Clowes refers to them as 'bio-sequins' and she has collaborated with Bangor University's BioComposites Centre in Wales, on developing another iteration of a 'bio-sequin' that will biodegrade after a few wears (Marks, 2019). In 2022, Rachel Clowes was working in collaboration with University of Leeds and the Royal College of Art, using a biodegradable film they have developed to produce biodegradable sequins (see fig. 2.27-2.28) and in 2023 she showcased sequins that are 100% biobased, washable, durable, as well as biodegradable at end of life.

Rahel Guiragossian, a graduate from ESMOD (École Supérieure des Arts et Techniques de la Mode) Berlin's Sustainable Fashion Masters programme, replaces 'conventional threads, base fabric, and the disks with biodegradable alternatives' (Honigman, 2014). She collaborated with Jakob Schlaepfer, a Swiss luxury textile manufacturer and according to the website [notjustalabel.com](http://notjustalabel.com), Guiragossian is now collaborating with the chemical company BASF (Badische Anilin und Soda Fabrik; German for 'Baden Aniline and Soda Factory') to develop a biodegradable plastic for sequins.

Another example is a sequin dress developed by H&M in 2017 using sustainable materials (Carder, 2017). Designer Elissa Brunato, a 2019 graduate from the MA Material Futures course at UAL Central Saint Martins, London, and founder of the UK company Radiant Matters, has developed an alternative to petroleum plastic-based sequins using wood cellulose for her *Bio Iridescent Sequin* project working alongside the RISE Research Institute of Sweden, extracting the crystalline form of wood cellulose to create a lightweight and iridescent compostable sequin (<https://www.elissabrunato.com/info.html>).

Aura Olarean is a 2019 graduate from the Fashion MA course at Kingston University who produced plastic sequins and floral embellishments using plastic salvaged from a forest in her home country of Romania.

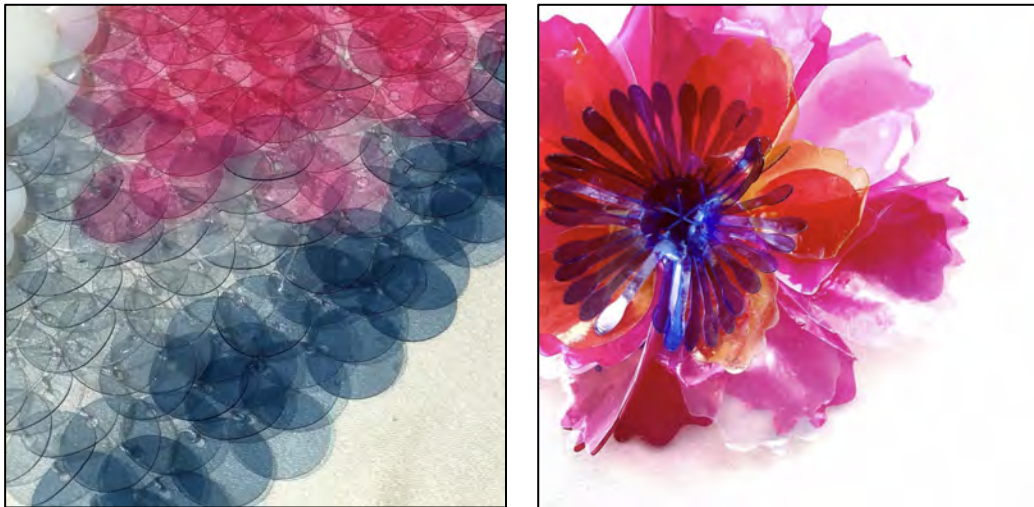


Fig. 2.27 Sequins made by Rachel Clowes of the Sustainable Sequin Company from a biodegradable film produced by University of Leeds. Photograph from Instagram: @thesustainablesequincompany.  
Fig. 2.28 Floral embellishment produced by Rachel Clowes of the Sustainable Sequin Company in collaboration with University of Leeds, using a biodegradable film they have developed to produce biodegradable sequins. Photograph from Instagram: @thesustainablesequincompany.

## **Beads**

No contextual review of embellishment is possible without the discussion of beads. The practice I completed prior to this project utilised beads much more than this study, for example *The Proxemic Dress*. The practice I discuss in Chapters 4 and 5 focuses on the use of sequins and thread, however I return to the use of beads in the practice I discuss in Chapter 6.

## **Origins**

The history of beads has been written about significantly much more than that of sequins, for example, Dubin, L. S. (1987), Francis, P. Jr. (1994), Edwards, J. (1992), Sciana, L. and Eicher, J. (2001), and have been used in a variety of contexts, not just for embellishment; historically they have been used for adornment and decoration and they have been used for trade between cultures. However, according to the academics Sciana et al. (2011) scholars have not given the study of beads the relevance that archaeologists have; beads are made from materials that last a long time and therefore survive to be discovered on archaeological sites and so the study of the subject crosses academic disciplines.

Edwards, Spivack and Saint-Aubin have speculated about the origins of beads and their use for decoration,

He saw the summer flowers and autumn berries; seeds, and slender beautifully marked shells, the frail, mottled eggs discarded from a bird's nest; and piercing them with a fishbone or a thorn, he threaded them on a straw or a length of fibre, and hung them around his neck. (Edwards, 1992: 15)

Peter Francis, Jr., a prolific writer about the subject of beads, also suggests that early beads were made from 'easily gathered attractive materials' (Francis, 1994: 9) such as seeds, berries, flowers, leaves, and feathers, but these materials do not survive burial and therefore they cannot be verified.

Edwards suggest that as the process of creating beads was slow and labour-intensive 'occupying sometimes days and weeks of constant, patient drilling and rubbing' (Edwards, 1992: 18), with the most difficult issue being how to perforate the bead (Francis, 1994: 11). The maker valued his beads, and they gradually became accepted as representing wealth, property, position, and precedence in the family/tribe (Edwards, 1992: 18). Spivack (2012) suggests that 'Sewing gold and other precious metals onto clothing was multifunctional, serving as a status symbol, a theft deterrent or a spiritual guide'. Beads could be handed down through the family, traded for livestock, clothing, tools or wives (!), developing 'into a complicated system of currency in which, for many, many centuries, much of the trade of the world was carried on' (Edwards, 1992: 18). Here Edwards is referring to the use of trade beads, which I will discuss further below.

The collectors of beaded fashion garments Piña et al. noted that the translation of the word 'bead' in European languages is derived from the materials they were traditionally made from and according to Piña et al. 'demonstrates the importance of these materials (pearls, glass, and coral) in history: in French, 'perle'; in German, 'glasperle'; and in Italian 'perla'. The Dutch were particularly fond of coral beads in their early history and have as their word for bead, kraal' (Piña et al., 1999: 6). Incidentally, the Egyptian word sha

means 'luck' and 'sha sha' is the Egyptian work for 'bead' which suggests that beads can have talismanic properties (Dubin, 1987: 42).

Edwards charts the etymology of the work bead and makes the connection, in her text, to beads used superstitiously; 'bede' is an Anglo-Saxon word for prayer. The archaeologist and curator Margret Carey suggests 'bead' comes from the Old English word 'biddan' which means to pray (Carey, 1986: 7). Edwards refers to several examples of beads being used to ward off certain ailments. For example, 'children in the East End of London wore 'bronchitis beads' to prevent them catching colds and fevers' (Edwards, 1992: 23). This use of beads can still be seen today in the use of prayer beads, worry beads and rosaries.

As a researcher, Edwards has managed to gather information pertaining to the history and origin of beads and bugles<sup>8</sup> (and sequins and paillettes) as well as researching the import and export of these components, and their uses (1992: 53). She also categorises different periods, styles and techniques for embellishment offering up a wealth of facts presumably gained from the extensive bibliography in *Bead Embroidery* (1992).

### ***Materials***

Early beads were made from materials found in the immediate environment of humankind; seeds, berries, coal and stone, and the by-products of hunting and food; bone and shell (Francis, 1994: 9) (see figs. 2.29-2.30). Tools were developed that could create perforations to allow the 'beads' to be strung (Dubin, 1987: 27 and Francis, 1994: 11). Sciama suggest that beads 'are among the most ancient and widespread of human ornaments' (Sciama et al., 2001: 1) and that 'the mere fact of wearing them derives from a deep-seated aesthetic impulse and a need for self-expression which, as evidence shows, is almost universal' (Ibid., 15).

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<sup>8</sup> A tubular bead.





Fig. 2.29 Necklace of Upper Paleolithic beads made from various fossilised shells, c.28,000 B.C. found in present-day Czech Republic. Photograph © Moravske Muzeum, Brno, Czech Republic.

Fig. 2.30 Beads from the second millennium B.C. The bead on the left is made from olive shell, the middle bead is a red deer tooth and the example on the right is made from bone. Photograph © Peter Francis, Jr.

Lois Sherr Dubin, an author of several books about beads, writes that the first examples of beads were found in La Quina, France, and are dated back to approximately 38,000 BC. These early examples of beads were grooved animal teeth and bone and were worn as pendants by Neanderthal man (Dubin, 1987: 21). The Egyptians developed a technique for making beads using faience, which was a ceramic using quartz sand instead of clay, and a coloured glaze (Ibid., 42). Faience is considered to be the precursor to true glass and is possibly the first mass produced synthetic material (fig. 2.31). The Egyptians were also the first to manufacture beads made from glass c. 2181-c. 2160 B.C. (Ibid., 42). An early example of beads used as an embellishment on clothing was found in Kamchatka in the far east of Russia; stone beads sewn onto the garments found on the bodies in a grave site that date back to 12,000 to 11,000 B.C. (Ibid., 25). Natural pearls were the most popular component for embellishment in the Middle Ages (Browne, 2016: 12); large pearls were popular in the Levant (a historical geographical area that covered the Eastern Mediterranean and Western Asia), while smaller beads were preferred in the UK and Europe (Ibid., 12).



Fig. 2.31 Collar of faience beads, Amarna period (1379-1362 B.C.), Egypt. Photograph © The MET Museum, New York.

In *Bead Embroidery* (1992), Edwards goes into relative detail about bugle beads and the glass bead makers of Venice, and the diverse types of the glass industry produced in the Middle Ages. Glass beads began to be manufactured in Europe from the fourth century when glassmakers from Syria and Alexandria relocated to Europe. Venice in particular was a large producer of glass beads intended for markets outside of Europe, especially in the fifteenth and sixteenth centuries and most of the glass beads found in Africa since the fifteenth century are European in origin (Sciama et al., 2001: 1, 27). Although glass beads were manufactured in other parts of Europe, such as France, Spain, Switzerland, England, Germany, and Belgium, according to Dubin 'Venetian glassmakers dominated the world market in volume, quality, and diversity until the twentieth century' (Dubin, 1987: 107) (Figs. 2.32-2.33).



Figs. 2.32-2.33 Glass beads used in the Africa trade (*trade beads*). According to Dubin (1987: 108), most of these beads could be Venetian in origin, but the bead merchant associated with these cards also traded in beads from Bohemia and Germany. Photographs © British Museum, London.

Edwards claims that the etymology of *bugle* (bead) is not known but finds a reference to this type of bead in the 1604 Rate Book from the H.M Customs archives and that ‘bugles’ are distinct from beads. By looking at H.M Customs historic records, Edwards was able to piece together where beads and bugles were produced (mainly Germany, Holland, and Italy) and that these beads and bugles were then heavily exported to Africa where they were used for trade with local tribes since the fifteenth century (Sciama et al. 2001: 1) (Figs. 2.32-2.33). For example, the people of Benin have embellished articles of clothing made with coral beads brought by the Portuguese (Ibid., 1). Beads were traded with Africans for ‘incense, ivory, tortoiseshell, rhinoceros horn, palm and coconut oils, timber, pig iron and gold’ (Dubin, 1987: 132).

Jet beading became very fashionable on Victorian mourning dress. Jet was primarily found in the coastal town of Whitby in North Yorkshire. Edwards refers to the confusion caused by Saint-Aubin’s use of the word ‘jais’ (the French word for jet) in his 1770 text *Art of the Embroiderer* (1983) which is used as a general term for beads in Saint-Aubin’s work

rooms (Edwards, 1985: 8). The authors of *Beads in Fashion 1900-2000* (1999) suggest that the word for jet itself comes from the French 'jais'. The jet industry in Whitby peaked 1870-72 when supplies were depleted by demand.

### ***Cut glass beads***

Austrian Daniel Swarovski founded Swarovski in 1895, a producer of lead glass (Francis, 1994: 73 and Saillard, 2013: 8), which the company refers to as 'crystal' (Saner, 2007). In 1935 the company diversified into optical lenses for binoculars and telescopes and in 1977 the company entered the jewellery market. Originally established as a crystal cutting factory, Swarovski were able to mass produce these 'crystals' for the first time due to the machine Swarovski invented in 1892. Charles Worth and Paquin both exhibited dresses embellished with Swarovski in the 1900 *Pavillon Français de l'Élégance* at the *Exposition Universelle in Paris* (Saillard, 2013: 8). In 1956 Manfred Swarovski created the *Aurora Borealis* crystal in association with Christian Dior (Saillard, 2013: 9); a bead with a thin coating of vaporised metal ions which gives the bead a 'rainbow' effect (Francis, 1994: 61) which is still in production today<sup>9</sup>. In 1962, Marilyn Monroe famously made an appearance at the then American President John F. Kennedy's birthday party dressed in a Swarovski embellished gown (Saillard, 2013: 9)<sup>10</sup>. In 1976, Swarovski began to produce components using zirconia, a synthetic crystal often used to simulate diamond. Swarovski make a multitude of faceted 'crystals' in a wide variety of colours for the use in embellishments for the fashion industry. As a company and product, most of the information that is available comes directly from Swarovski itself, for example, the sponsors' introduction to Saillard, O. and Zazzo, A. (2013) *Paris Haute Couture*.

Swarovski are a brand, and their products are referred to as 'Swarovski', but other more anonymous but similar products of cut or faceted glass beads are referred to as 'rhinestones', which translates from the French 'caillou de Rhin', meaning 'pebble of the Rhine' and defined as 'a. A variety of rock crystal. b. A colourless artificial gem of paste or strass, cut to imitate a diamond' (Oxford English Dictionary, 1984: 2536). Palmer White

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<sup>9</sup> *Aurora Borealis* was one of the main 'crystal' types I used on the wedding dress I produced for the *Swarovski: Unbridled* exhibition (fig. 0.1).

<sup>10</sup> Kim Kardashian wore Marilyn Monroe's Swarovski embellished dress to the 2022 MET Gala in New York.

(1994), writing about Lesage in the 1980s, mentions that glass blowers and enamellers as a trade were disappearing and 'the traditional suppliers of rhinestones in Austria and bugle beads in the Czech Republic Czechoslovakia (Bohemia) can no longer guarantee quantity and delivery dates. Moreover, quality has declined' (1994: 147). This is perhaps a reference to Swarovski in Austria and the manufacturer Preciosa in the Czech Republic.

In the next chapter I will discuss two examples by the Cypriot fashion designer Hussein Chalayan who has had a long-standing working relationship with Swarovski (Bolton, 2016: III). Although Chalayan is not a designer associated with a heavy use of embellishment within his collections, there are two examples worthy of mention; garments from his *Readings* spring/summer 2008 (Chapter 3 Fig. 3.59) embellished with Swarovski crystals and fitted with moving lasers that refract through the crystals, and the *Floating Dress* from *Kaikoku* autumn/winter 2011-12 (Chapter 3 Figs. 3.53-3.54), fitted with Swarovski crystal components that are spring-loaded out to the surrounding space of the garment.

## **Thread**

Mary Eirwen Jones states that a supple thread is essential for the craft of textile making and that these can come from a variety of natural sources; weavers use silk and wool from the animal kingdom, linen, and cotton from the vegetable world. 'The embroiderer, making use of metal threads... can also obtain his material from the mineral world' (Jones, 1969:7); this is a simplistic categorisation of thread-usage as modern day textiles can utilise a variety of thread-types in their production. Swift (1984: 209) suggests that the most common threads used for embroidery, and therefore embellishment, are made from wool or mercerised cotton and linen. Silk and metal threads are much more specialised and are less readily available.

### ***Cotton, silk, and metal***

Mercerised cotton thread is the most readily available embroidery thread today. The process of mercerisation increases the lustre of the thread, but also means that the thread becomes smoother and is therefore more practical. The embroidery author Gay Swift suggests that 'six-stranded silks or floss' produced for use in embroidery are in fact mercerised cotton. Higher quality cotton thread is marketed as 'floss' cotton, possibly

because the term 'floss' is more commonly associated with the qualities of silk thread (Swift, 1984: 54).

Silk thread is available in several subtly different forms, such as 'filoselle', which is medium quality silk thread as it comes from the courser outer fibres of the silkworm's cocoon, and 'filo floss' (filo silk) which is thicker and has a slight twist but less gloss than filoselle (Swift, 1984: 192). Silk thread was bought in the sixteenth century as loosely spun floss (Carr in Morrall, A and Watt, M. 2008: 99). Floss silk has a desirable lustre but is not very strong. It also has varied weights such as 'bobbin', 'church' and 'tram', and 'horsetail', 'Maltese', 'mallard' and 'mitorse' which are varieties of twisted silk threads (Swift, 1984: 192).

Associate conservator at the MET, New York, USA, Cristina Balloffet Carr suggests that through increased trade routes (Carr does not specify where these new trade routes are) in the second half of the sixteenth century, silk, gold, and silver became more available for the use of embellishment and embroidery. Carr also states that embroideries prior to this period tended to limit the use of metal thread to the surface of the fabric where it would be 'couched'<sup>11</sup> onto the surface using silk thread (Carr in Morrall, A and Watt, M. 2008: 99 and Saint-Aubin, 1983: 27) where it would be most effective and seen.

In ancient times gold thread was used in sewing. Since gold was too pliable for the threads to serve in embroidering, it occurred to embroiderers in the Middle Ages to envelop cotton thread in a metallic thread of gold, silver, or tinted silver which they called *laminette*. (White, 1994: 62)

Another version of this method for creating metallic thread is called 'filé' where a metal strip is wound around a silk thread (Carr in Morrall, A and Watt, M. 2008: 99). Filé made from 'almost pure gold' was used on tenth-century embroideries found in St Cuthbert's tomb, Durham Cathedral, in the UK (Browne, 2016: 10). The term 'purl' also refers to metal-wound thread with fine wire used for the core instead of silk or cotton (Jones,

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<sup>11</sup> 'Couching' is a method of embroidery where thread is laid on the surface of a fabric and a second thread grafts it onto the fabric.

1969: 8, Carr in Morrall, A and Watt, M. 2008: 99). Purl looks like 'small pearls lined up next to each other' (Pile, 2018: 83), hence the name. The appearance of this thread could be affected by the colour choice of the core thread or by the direction the metal was wrapped around (Carr in Morrall, A and Watt, M. 2008: 99). Albert Lesage updated this technique for 'laminette' but White is vague about how exactly it differed from the previous use of it, preferring to describe what Lesage did with it rather than explicitly stating a difference. According to White, while working for Elsa Schiaparelli, Lesage also reintroduced a 'spiral-twisted metal thread' called 'bullion' or 'canetille' (White, 1994: 62). 'Frisure' and 'bouillon' (presumably the same as White's reference to 'bullion', see above) also augment a core thread; Both are made from spiral of metal wire rolled around a large needle to make a tube which can be cut into the desired length. Frisure is made from matt gold wire, whereas bouillon is made from other metals (Saint-Aubin, 1983: 65 & 71).

## **New materials for embellishment**

In the above text, I have discussed the components used for embellishment. In the next section, I discuss designers who are pushing the materiality of embellishment, using new materials for embellishment such as concrete and silicone, and in the case of Naomi Bailey Cooper, using materials to mimic or replace materials from the natural world. These new developments in terms of the components for embellishment are neither beads nor sequins and therefore require a separate section.

The (historic) use of materials such as feathers and furs (see figs. 2.34-2.36) for embellishment is problematic; the use of materials from rare and exotic animals is now generally frowned upon as they are recognised as cruel and endangering to animals, such as the bird of paradise feathers used by Yves Saint Laurent for an evening dress, 1969-70 (fig. 2.37-2.38 ), the fur used by Lesage for Jacques Fath c.1952 (2.34), and the ermine tails used by Lesage in samples produced for Givenchy in 1953-4 (fig. 2.35).



Fig. 2.34 Jacques Fath c. 1952. Photograph © Karin L. Willis for the MET Museum.

Fig. 2.35 Lesage embellishment for Hubert de Givenchy 1953-54. Photograph © Patrice Stable.

Fig. 2.36 Lesage embellishment for Hubert de Givenchy, summer 1969. Tightly twisted drake feathers, coloured rhinestones, pearls, and coral, inspired by a thorn bush. Photograph © Patrice Stable.

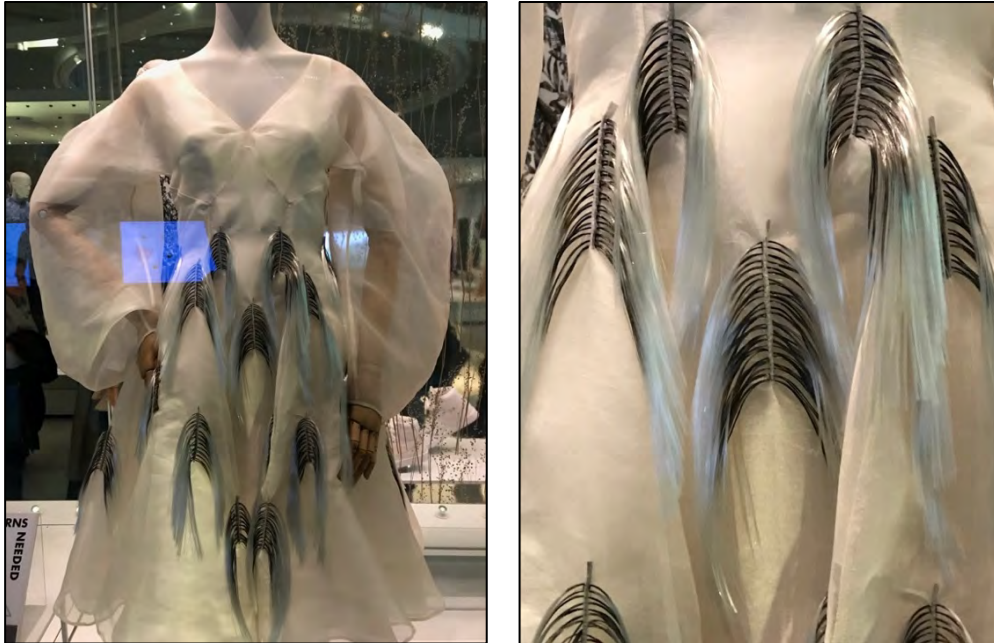


Figs. 2.37-2.38 Dress by Yves Saint Laurent 1969-70 using bird of paradise feathers. Photographs © Karin L. Willis for the MET Museum.

The researcher Naomi Bailey Cooper explores how socially responsible materials and methods can create embellishments that replicate problematic materials such as feathers, furs, and exotic animal skins. One of her garments on display as part of the V&A Museum's *Fashioned from Nature* exhibition (2018-2019) features a feather-like embellishment utilising ahimsa silk (also known as 'peace silk', a technique for silk



production that does not kill the silkworm when harvested), spun glass and wild rubber (figs. 2.39-2.40). Iris van Herpen has also explored the use of other materials to represent feathers, such as the laser-cut silicone 'feathers' hand stitched onto a base dress of cotton twill for autumn/winter 2013-14 (Figs. 2.41-2.42)



Figs. 2.39-2.40 Naomi Bailey Cooper; dress from *Fashioned from Nature* exhibition at the V&A Museum 2018-19; feather-like embellishment utilising ahimsa silk, spun glass, and wild rubber. Photographs © Richard Sorger.



Figs. 2.41-2.42 Iris van Herpen; autumn/winter 2013-14 featuring laser-cut silicone 'feathers'. Photograph © Nicholas Alan Cope for the MET Museum.

Concrete as a material for embellishment has been explored by Karl Lagerfeld, for Chanel autumn/winter 2014 haute couture collection (Bolton, 2016: XXV) and Middlesex University Masters' student Jodie Ruffle who graduated in 2015. Lagerfeld and Ruffle are exploring the materiality of embellishment by utilising a substance (concrete) that is more commonly associated as a building material in social spaces rather than a material used in the production of fashion and embellishment. In Ruffle's practice, the concrete embellishment is 'printed' over the thread embroidery, adding another material (component) to the work. The concrete will eventually crumble away, revealing more of the concealed embellishment (thread and sequins) underneath; the embellishment is not 'fixed' or static and therefore also explores notions of time and ephemerality (see figs. 2.43-2.44). However, this project is not concerned with notions of time and ephemerality, and Ruffle's practice is cited because of its use of an unconventional material.

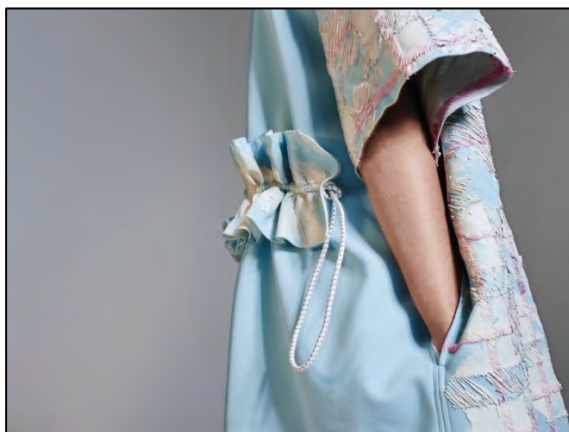


Fig. 2.43 Jodie Ruffle (2015). Photograph © Bartosz Pajak.

Fig. 2.44 Jodie Ruffle (2015). Concrete was printed over thread and sequin embellishment as part of Ruffle's 2015 MA project. Photograph © Jodie Ruffle.

## Laser cutting components for embellishment

New technologies such as laser cutting, defined as 'a subtractive digital fabrication process' (Genova and Moriwaki, 2016: 158), have enabled the development of new components for embellishment, for example, Marc Jacob's layered plastic over-sized flowers for spring/summer 2012 (fig. 2.21) and Iris van Herpen's silicone feathers for autumn/winter 2013-14 (fig. 2.41-2.42). The practical work developed as part of Joyce Fenton-Douglas' PhD project focuses on fashion embellishment, with particular emphasis on how laser cutting and etching can be used to facilitate unique components. Mirror is

used as a material from which various shapes (flowers, tiles) are cut out and etched into. The use of mirror for embellishment is not new; it is traditionally used in Indian 'shisha' (mirrorwork) embroideries but designers such as Elsa Schiaparelli used mirror in 1938 for her spring 1939 collection (fig. 2.47). Prada for spring/summer 1999 (fig. 2.48) and Antonio Berardi for autumn/winter 2003 and spring/summer 2004 (figs. 2.45-2.46) have used it more recently in their designs (Bolton & Koda, 2012: 196-197 and Rocca, 2006: 49). It is the engraving techniques which gives Fenton-Douglas' practice its newness. The same techniques are applied to plywood and satinwood (Fenton-Douglas, 2015). The embellishment designer Karen Nicol (2012) also discusses how the use of laser cutting could be utilised in the production of sequins that differ from the readily available shapes such a circles and squares. Guoxiang Yuan et al. (2012) are also exploring the use of laser engraving for what they confusingly refer to as 'the embellishment of the fabric surface'. By their own admission, laser engraving is a 'subtractive method and can produce a modified fabric surface with simple or complex patterns through laser beam scanning'. Therefore, I would argue that this 'subtraction' does not fit with my definition of embellishment as an addition.



Fig. 2.45 Antonio Berardi autumn/winter 2003. Photograph © Marco Revenna.

Fig. 2.46 Antonio Berardi spring/summer 2004. Photograph © Marco Revenna.



Fig. 2.47 Elsa Schiaparelli winter 1938-39. Photograph © The Met Museum, New York.

Fig. 2.48 Prada spring/summer 1999. Photograph © Toby McFarland Pond for the MET Museum, New York.

## Part 2: Technique; the development of embellishment practices

In this section, I discuss the development of the key embellishment techniques used to produce embellishment, focusing on eighteenth, nineteenth, twentieth, and twenty-first century developments in Paris, France. My research has only uncovered discussion in relation to developments in France, perhaps because as the birthplace of haute couture, Paris and France were/are the hub where these developments needed to happen.

However, the earliest text I have discovered during this study that discusses the subject is Charles de Saint-Aubin's *Art of the Embroiderer*, written in 1770 (Saint-Aubin, 1985).

Saint-Aubin was the royal embroiderer for the French King Louis XV and pre-dates the development of haute couture, although the production of royal garments would presumably be the eighteenth century's equivalent in terms of quality and execution.

### The Parisian embellishment ateliers

Lesage et Cie (also known as Lesage and Co., Maison Lesage, House of Lesage, or just Lesage) is arguably the best-known French 'House' of embroidery, perhaps because Lesage was the only supplier of embroideries and embellishments to have its own

monograph (White, 1994) until the publication of *Rébé: Broderies haute couture* (Albertini, 2021). Lesage produced work for some of the best-known fashion houses in Paris such as Madeleine Vionnet, Jeanne Lanvin, Christian Dior, Cristóbal Balenciaga, Yves Saint Laurent. Lesage was established c.1924 when Albert Lesage bought the already established Michonet, a producer of embellishments and embroideries for 'over sixty years' for designers such as Charles Worth and Madame Vionnet (White, 1994: 25). The house of Lesage enabled the embroideries for many recognisable garments produced by the aforementioned design houses that are in public collections world-wide and reproduced in books and online.

Lesage was not alone in producing embroideries and embellishments in the twentieth century France; Maison Hurel (est. 1879 as Tetrel & Cie), Maison Michonet (est. 1868 and acquired by Lesage in 1924), Atelier Montex (est. 1939), Maison Rébé (1911-66), Maison Rodier (est. 1852), Broderies Vermont (est.1956) were all supplying work to established fashion designers of the time (Bolton, 2016: 237). In the book *Hommage à Balenciaga* the author refers to embroidery ateliers who produced work for Balenciaga; Bataille, Ginisty-Quenolle, Goby, Lanel, Lesage, Lisbeth, Mesrine, Métral, Rébé, Roy-Poulet, Vermont and Vincent (Musée Historique des Tissus de Lyon, 1985: 57). It is not specified if these ateliers produced both embroideries and embellishment for Balenciaga. Fashion historian and curator Olivier Saillard mentions several embroidery houses that operated in the 1920s such as Kitmir who started by working exclusively with Chanel in 1922 and Myrbor (Saillard, 2013: 123), but again it is not known if these were houses concerned with thread work exclusively or if they also produced embellishments; in the chapter *Embroidery in the 1920s* (ibid., 122), the book *Paris Haute Couture* uses the term 'embroidery' when discussing embellishment.

Chanel bought Lesage in 2002 when they became part of their 'métiers d'art' (the small, specialist ateliers owned by Chanel). Lesage as an atelier still exists, but a large part of the work is now outsourced to workshops in India and less is produced in-house. Since 1992 Lesage offer short courses as the Ecole Lesage (Lesage School) in how to produce embellishments, focusing on traditional styles, materials, and techniques.

## Techniques for embellishment

The techniques used for embroidery and embellishment, with a few exceptions (embellishment by machine, hotfix components), have been static since their origins; in the case of embroidery, thread is applied to the fabric using a needle and in terms of embellishment, components are applied to a 'base' or 'ground' fabric using a needle and thread, by hand or by machine. The techniques mentioned below are the main techniques that enable the production of embellishments that utilise sequins, thread, and beads.

### The Lunéville method

Writing in 1770, Saint-Aubin mentions the introduction of the tambour hook for producing a chain stitch embroidery. 'In French the hook was (called) *un crochet* but in English took its name from the frame and became the tambour hook' (Saint-Aubin, 1985: 12) (fig. 2.49). Saint-Aubin suggests that the use of the tambour hook supplanted the needle and thread ten years before he wrote his book, making the approximate date for the inception of this technique 1760. Edwards (1992: 101) writes that a hundred years passed after this development before a man called Louis Ferry (referred to as Louis Ferry-Bonnechaux in Bolton, 2016) developed the use of the tambour hook to produce beaded fabrics for dresses. The technique he developed came to be known as the 'Lunéville' work, named after the French manufacturing town, east of Strasbourg, where Ferry's workroom was located. This technique is also known as 'tambour' beading. Artisans using the Lunéville method and a tambour hook work on the reverse side of the fabric, creating a chain stitch that links the component to the fabric. Most components can be applied using this method except rhinestones and metallic strips (White, 1994: 43).

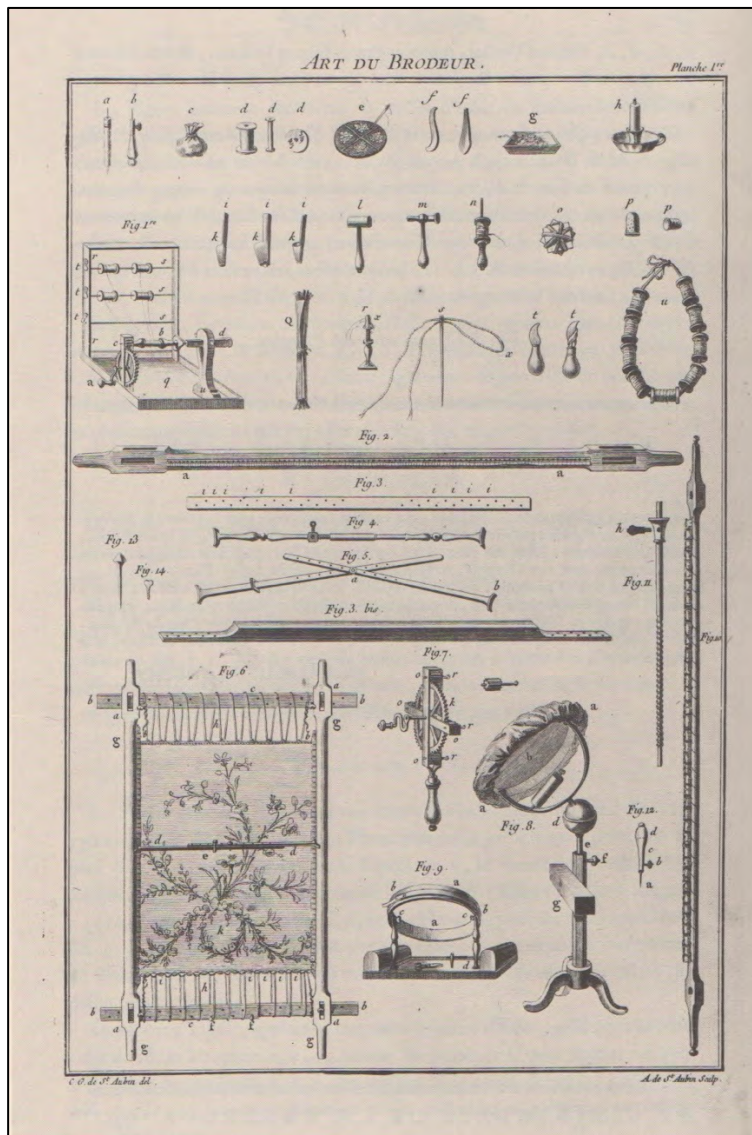


Fig. 2.49 Plate 1 from Charles de Saint-Aubin's *Art of the Embroiderer* 1770, illustrating the tools used to create embroideries and embellishments, including frames and tambour hooks. Image from *Art of the Embroiderer* (1770), reproduced in Saint-Aubin, C. (1983). *Art of the Embroiderer*. Los Angeles and Boston, USA.

## Lesage

Lesage developed versions of traditional techniques, such as tambour beading, to align with techniques for making clothes. For example, Madeleine Vionnet pioneered the use of bias cut (cutting the fabric at a forty-five-degree angle) and this necessitated developing an embroidery technique which could stretch with the fabric and not hinder the fabric from moulding to the body. Albert Lesage adapted the existing vermicelli technique, 'long, extremely filiform, serpentine lines' (1994: 49) which would allow the fabric to move on the bias, because each stitch was either in the direction of the warp or the weft of the fabric, therefore dividing the weight of the embellishment evenly

between the two threads in the fabric (the warp and the weft). This technique was called 'vermicelli droit fil' or 'Lunéville au carré' (Saillard, 2013: 123) (fig. 2.50). According to White in 1976 François Lesage, Albert Lesage's son and heir, developed a technique for beading onto jersey fabric, but White does not go into detail about how Lesage achieved this (1994: 122). In my experience, when beading onto jersey the motif or design needs to be kept small or isolated; the threads attaching the embellishment are continuous only over a small area, so that when the fabric stretches the thread does not break.

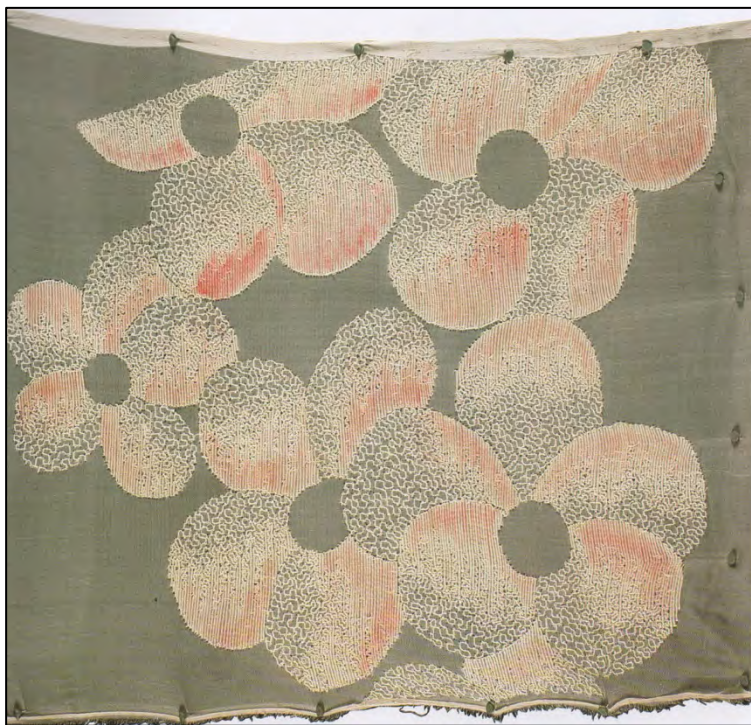


Fig. 2.50 Lesage for Madeleine Vionnet 1932-33. This is the reverse side of the sample showing Lesage's use of Lunéville method to change the stitch from a straight line into a vermicelli (a snaking line). Photograph © Patrice Stable.

In 1978, François Lesage started to use 'thermopasted' films to collage fabrics on top of each other. 'Thermopasted' is not a term that is associated with the production of clothes today; it is possible that he is referring to a material that can be inserted between fabrics and when heated glues them together, much like the fusible interfacing commonly used for garment manufacture. Bolton in *Manus x Machina* (2016) mentions 'thermoplastic film', 'which allows for elements to be heat transferred to a textile surface without stitching' (2016: 165) and this possibly refers to 'hotfix' components, commonly manufactured and sold by Swarovski that can be ironed on directly to the surface of the fabric.



## **Beading by machine**

Jessica Jane Pile, the Production Director of the London-based embroidery house Hand & Lock, writes that machine embroidery is more commonly used to produce high street designs rather than haute couture, but ready-to-wear uses a mixture of hand embroidery and machine embroidery determined by 'sustainability, cost and the target market' (Pile, 2018: 12). The use of machines to produce embroidery and embellishment has democratised these techniques, allowing them to be used for high street and fast fashion (ibid., 12).

Machines capable of simple embroideries (thread work only) were working from 1828. In 1891 the head of a Parisian embroidery house, Monsieur Schweizer, in collaboration with a mechanical engineer called Langret, built machines that could attach beads to fabric (Edwards, 1992: 94). These machines were ultimately not very successful; it proved difficult to source beads that could be fed into them as the holes were too small for the needles.

The first version of the chain-stitch machine that would later become known as the Cornely machine, was developed in 1865 by Antoine Bonnaz, a silk machine engineer, and solved the later issues experienced by the 1891 machine by stringing the beads onto the bobbin, which would then be attached to the fabric via hook-shaped needle (Holmes, 2008: 37-39). The use of these machines also enabled the highly beaded dresses of the 1920s; Lanvin utilised as many as twelve Cornely machines in the 1920s (Saillard, 2013: 125).

## **Conclusion**

In this chapter I have focused the materials and technique of embellishment. Firstly, I discussed the components of embellishment; sequin, beads, and thread, their history and materiality. It is these traditional components that my practice employs for the production of spatial embellishments.

I then discussed the development of techniques for embellishment to contextualise my practice which is also concerned with the development of a new technique for embellishment; the tensegrity technique.

In the next chapter, I first discuss key practice and practitioners for whom embellishment is essential to their work. I move on to discuss key embellishment practitioners and practice which is concerned with bodies and space, citing examples of embellishment as well as garments, both historical and from contemporary fashion, that supplement the body and explore the proxemic space surrounding the body.

# Chapter 3: Contextual Review; Practice, Body, and Space

## Introduction

In this chapter I bring together three of the main themes of my project; 'practice', 'body', and 'space'. I discuss practices which are concerned with these themes, citing examples of garments as well as embellishment, both historical and from contemporary fashion, that supplement the body and garment, and explore the surrounding proxemic space drawing on Edward T. Hall's division of proxemic space surrounding the human body into four categories. This is explained further in Chapter 1)

This chapter is divided into three sections; *Part 1: Practice; key embellishment practice and practitioners*, *Part 2: Body and Silhouette*, and *Part 3: Body and Space*. In part 1, I examine practice and practitioners for whom embellishment is essential to their work. In part 2, I discuss examples of practices that engage with the themes of the body and the silhouette by extending the silhouette out to proxemic space. These examples do not use embellishment to question notions of proxemics and personal space, but I argue that they challenge these notions through the enhancement of the body's silhouette.

The use of sculptural tools for embellishment, the stereometric method and tensegrity (introduced in Chapter 1), are not directly addressed by the current practice of other designers, and in this thesis, I describe how my practice uses these sculptural tools for embellishment for the first time. The use of embellishment to explore spatial concepts, such as proxemics (introduced in *Chapter 1: Methodology* and discussed further in Chapter 6), is also under-explored by both theoreticians and practitioners. In *Part 3: Body and space* I discuss examples of practices that can be viewed as such.

# **Part 1: Practice; key embellishment practice and practitioners**

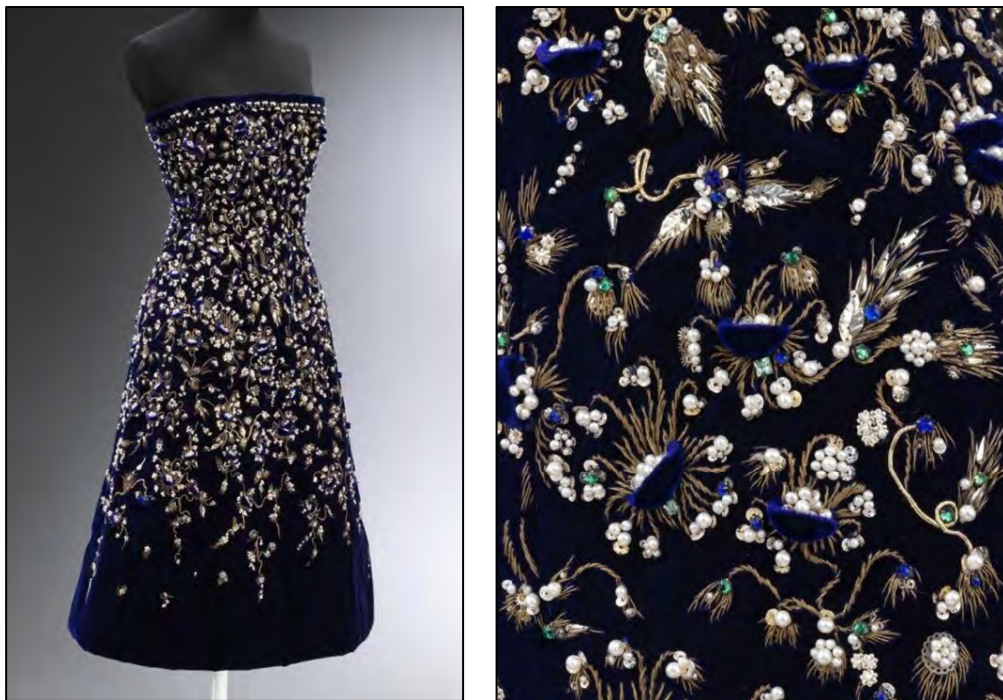
In this section, it is necessary to briefly discuss haute couture and the role of embellishment in its production. This contextualises subsequent discussions about key practitioners who are worthy of note either because embellishment is essential to their practice or because of their conceptual approach to the use of embellishment.

## **Haute Couture and embellishment**

The Englishman Charles Worth established his business, and the notion of haute couture, in Paris in 1858 (Wilcox, 2007: 12 and Breward, 2003: 31) and Worth was the first example of the 'named designer' (Breward, 2003: 49); clients visited the salon and chose designs from a pre-existing collection by the designer, rather than instructing a designer/dressmaker what they, the client, wanted in terms of style, fabric and colour; a dress maker that 'answered to clients but took its initiative from the concepts of the fashion designer... (an) independent creator' (Koda & Martin, 1995: 15).

According to the fashion curator Claire Wilcox (2007: 136), there were over forty embroidery ateliers operating in Paris at their peak; the date is not specified, but possibly between 1947-57 which was 'the zenith of French couture' (Wilcox, 2007: 12); the post-World War Two period, beginning when Christian Dior first showed his famous 'New Look' in 1947 and ending with his death in 1957, when haute couture thrived (Ibid., 136). Parisian embroidery ateliers would produce collections of embroidery and embellishments in response to 'current cultural sensibilities of the season' (Alexandra Palmer in Ibid., 70) approximately two months in advance of showing these samples to the haute couture houses. Suppliers of embroideries and embellishments were forced to create more samples (Lesage created roughly 300 per season (Ibid., 136)) than they could sell to couturiers in the hope that they would sell between 50-75% of their samples; designers would put a sample on hold, and this meant that the supplier couldn't show it to another designer until it had been definitely rejected (Ibid., 70-72). In London, Norman Hartnell's embroideries were made in-house, and other London couturiers sent their work out to Paris House in Mayfair (Ibid., 136).

Paris as the birthplace of haute couture was a particular hub for embroidery and embellishment ateliers ‘that constitute essential elements of the couture’ (Koda & Martin, 1995: 73); the role of embellishment in the haute couture garment is not just a ‘luxe augmentation’ (Ibid., 74), but intrinsic to the garment itself. The use of embellishment in haute couture suggests that without embellishment there is no design, no garment. Wilcox cites the example of the *Bosphore* cocktail dress by Christian Dior, embellished by Rebé in 1956 (figs. 3.1-3.2), a midnight-blue velvet strapless dress with a simple structure and lacking in obvious details other than the elaborate embellishment of velvet bird’s nests and clusters of pearl ‘eggs’ (Wilcox, 2007: 136); this dress is a showcase for the craft of embellishment without any other structural distractions. This example of the *Bosphore* dress can be viewed conceptually as not existing without the ‘luxe augmentation’, embellishment is essential to the design and without embellishment there is no design. In Chapter 4, I expand upon this idea by discussing how, in terms of my practice, embellishment can be viewed as essential to the garment by using the French philosopher Jacques Derrida’s theory of ‘supplementarity’ to put forward the argument that there is a Derridean ‘lack’ that the embellishment ‘supplements’.



Figs. 3.1-3.2 *Bosphore* cocktail dress by Christian Dior, embellished by Rebé, 1956. Photographs © V&A Museum.

Koda & Martin (1995) and Wilcox (2007) argue that embellishment is essential to the existence of the haute couture dress. This argument that the haute couture dress *is* the embellishment and not just 'luxé augmentation' (Koda & Martin, 1995: 73), can also be seen in the work of Belgium fashion designer Raf Simons whilst at the helm of Christian Dior (2012-2015). Simons produced haute couture for Christian Dior that was heavily reliant on embellishment (fig. 3.3), making the role of embellishment in the haute couture garment intrinsic to the garment itself. The Simons' dress for Christian Dior haute couture spring 2013 (see fig. 3.3) can be viewed as a direct descendant of the *Bosphore* dress. Shown here in the context of an exhibition and not on a mannequin or a model, the dress lacks an obvious waist (unlike the 1956 dress), and this makes it more abstract as there are no obvious references to the female form. The dress is only embellishment without the distractions of the body or detail. Without the embellishment it would be detail-less, and I argue that there is no design without the embellishment; it is essential to its existence.



Figs. 3.3 Embellished dress by Raf Simons for Christian Dior haute couture spring 2013. Photograph © Richard Sorger.

## Elsa Schiaparelli

The Paris-based fashion designer Elsa Schiaparelli (1890-1973) was one of the earliest designers to use embellishment in a figurative manner, representing objects rather than

just floral or abstract pattern, and her work was directly inspired by the artists she was mixing and collaborating with such as Salvador Dali, Jean Cocteau, and Christian Bérard, producing 'the first true hybrids of clothing and art' (Bolton and Koda, 2012: 28) (figs. 3.4-3.5). Blum (2003: 121) suggests that Schiaparelli's contribution to the surrealist movement of 1930s Paris is not yet fully acknowledged and that her designs of that time reflected the zeitgeist. Without embellishment it would not have been possible for Schiaparelli to produce this work. She could have used textile print to render the artwork, but it would not have had the same luxurious connotations. Elsa Schiaparelli's surrealist embellishments, such as a Jean Cocteau inspired linen jacket from 1937 (fig. 3.5), depicting a woman's profile on the body of the garment with hair of gold bugle beads and sequins flowing down the sleeve, or the wedding veil with the trompe l'oeil sapphire blue bugle bead wavy locks of hair from summer 1938 (fig. 3.6). These were produced by Lesage between 1937-1952 (White, 1994). Koda and Martin's statement that it is not possible to imagine Schiaparelli without the work of Lesage, facilitates my argument that without embellishment the realisation of these designs was not possible. Therefore, embellishment was essential to the creation of the design where fabric on its own was not enough. The fabric *lacked* the ability to express Schiaparelli's designs and embellishment *supplemented* it.



Figs. 3.4-3.5 Elsa Schiaparelli and Jean Cocteau. Photographs © Philadelphia Museum of Art, USA, 2003  
Fig. 3.6 Wedding veil with trompe l'oeil sapphire blue bugle bead wavy locks of hair, Elsa Schiaparelli, summer 1938. Photographs © Philadelphia Museum of Art, USA.

Schiaparelli was part of a larger movement of interdisciplinary artists and designers using surrealism within their practice, blurring the line between art and design. Artists such as Swiss Méret Oppenheim (1913-1985) who produced objects referencing articles of clothing such as gloves, the Spanish artist Oscar Dominguez's (1906-1957) *Brouette* (wheelbarrow) (c.1937), and the Austrian Mexican Wolfgang Paalens ivy-covered chair (1940) (Cruz Porchini, 2017: 6 and Wood, 2007: 6). Man Ray's (1890-1976) photograph from 1937 of a model wearing a silk satin gown by the couturier Madelaine Vionnet reclining in the *Brouette* 'cemented' the relationship between surrealism and high fashion (Wood, 2007: 6) which Schiaparelli contributed to.

## **Manish Arora**

Manish Arora is an Indian designer based in New Delhi who first showed his highly decorative collections at London Fashion Week in 2005 and has shown his collections during Paris Fashion Week 2007-2020 (Black, 2006: 31 and Black, 2012: 178). For this reason, I have included him in the discussion of Western European fashion and embellishment in this study. His collections do not exclusively use embellishment- his collections also feature printed textiles- but his use of traditional Indian craft techniques is central to his brand (figs. 3.7-3.9). According to Phyllida Jay (in Black, 2012: 178) 'his work with Indian craftspeople has been compared to the model of the French couture atelier', which in turn 'opens up new markets for traditional skills' that might otherwise have been dismissed as lesser than the work produced in French houses (2012: 178). Arora's use of embellishment is highly decorative, meaning that it is reliant on pattern, colour and texture, but by utilising traditional Indian heritage, in terms of techniques and materials, he exposes them to a Western fashion system and audience.





Fig. 3.7 Manish Arora autumn/winter 2019. Photograph © Daniele Oberrauch for vogue.com.

Fig. 3.8 Manish Arora spring/summer 2019. Photograph © Yannis Vlamos for vogue.com.

Fig. 3.9 Manish Arora autumn/winter 2018. Photograph © Yannis Vlamos for vogue.com.

## Ashish

The fashion designer Ashish Gupta (known simply as Ashish) was trained in the UK, first at Middlesex University and then at Central Saint Martins and he is currently part-based in both the UK and India; he spends up to six weeks a season in India developing his designs and this is reflected in Gupta's designs which combine 'contrasting influences such as Eastern and Western cultures... traditional and contemporary design with high-quality textiles and Indian hand-crafting techniques' (Black, 2006: 34).

Few fashion designers use embellishment as their sole unique selling point. Gupta uses embellishment at the core of his designs for clothing and fashion. His use of embellishment utilises traditional techniques and the materials traditionally associated with embellishment (sequin/bead/thread) (figs. 3.10-3.12). Whereas Schiaparelli produced clothing that did not need embellishment in order to exist, Gupta rarely produces work that is not heavily reliant on embellishment (particularly sequins), and therefore it can be argued that his design work supplements fabric with sparkle (sequins) and embellishment is fundamental to his designs.

Gupta discusses his use of sequins by referencing the British-French philosopher Mark Alizart's 2015 TED talk *Pop Theologie* and '(the) human's fascination with blinking lights

and the human interest in “fireflies, water reflecting light; there is almost a primal need for light and water. There are scientific experiments that prove that humans are attracted to glossy, shiny things” (Marriott, 2017). Here, Gupta makes the connection between this human interest in light and reflections and the effect of sequins used on a garment. Alizart discusses ‘blinking’ objects that operate in a liminal state, such as flashing lights of an advertising hoarding or sign, citing a door Marcel Duchamp constructed for an interior that opened one room as it closed the other (*Door: 11 rue Larry, 1927*), and this ‘blinking’ is used to great effect by Ashish and other designers that utilises sequins and other shiny components for embellishment; ‘blinking creates light’ according to Alizart in his 2015 TED Talk. Gupta also references the performance artist Leigh Bowery who said, “The reason I use sequins at the moment is because if I cannot cast the light, at least I can reflect it” (Marriott, 2017).

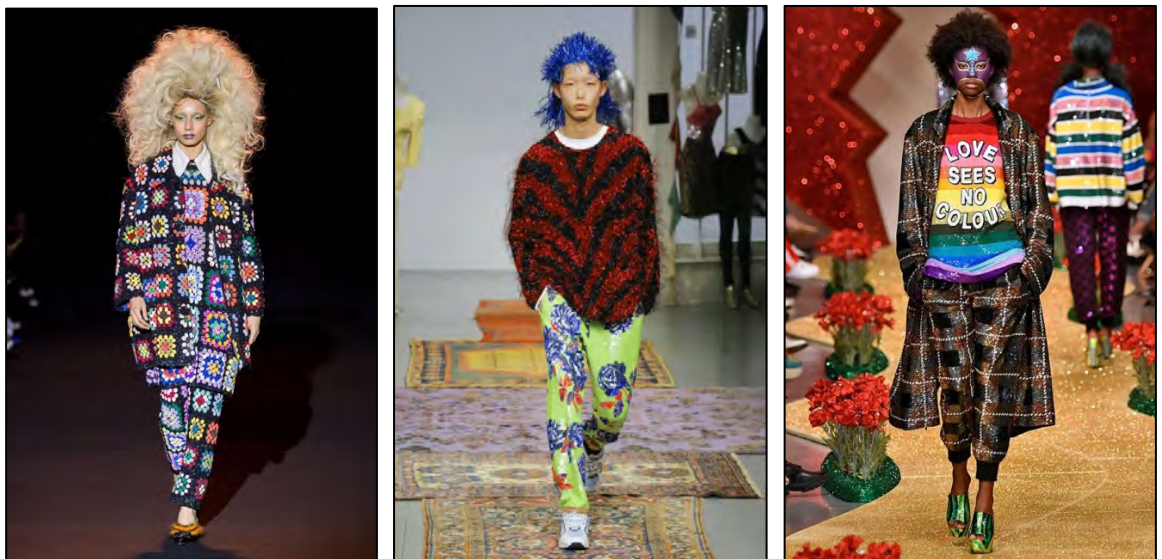


Fig. 3.10 Ashish (Gupta) autumn/winter 2019. The crochet design on this ensemble is created with sequins. Photograph © Carlo Scarpato for vogue.com.

Fig. 3.11 Ashish (Gupta) autumn/winter 2018. Photograph © Luca Tombolini for vogue.com.

Fig. 3.12 Ashish (Gupta) spring/summer 2017. Photograph © Kim Weston Arnold for vogue.com.

## Embellishment as concept

As mentioned in the introduction of this thesis, (selected) theory underpins this practice-led project<sup>12</sup> which enables me to conceptualise both my practice and embellishment itself. The below designers, Prada, and Viktor & Rolf, employ aspects of post-modern

<sup>12</sup> The use of selected theory (Derrida’s notions of supplementarity, fashion theory, and spatial theory) for this research will be discussed respectively in Chapters 4, 5, and 6.

design, particularly irony and humour and therefore make the leap from embellishment as solely an addition of pattern to an addition of meaning.

The design curators Glen Adamson and Jane Pavitt refer to post-modern design as 'antagonistic towards authority' (2011: 9), self-knowing and ironic; objects were designed with their 'museumification in mind', self-referential and giving a knowing wink to the viewer if they are in on the joke (Ibid., 9). Post-modernism allows for plundering of historical references and interdisciplinary influences (Jencks, 2002: 3), for example Vivienne Westwood's use of 18<sup>th</sup>-century men's clothing for her 'Pirate' autumn/winter 1981-2 collection (Wilcox, 2004: 47). It is not my intention to employ these exact concepts in my own practice, but rather I am citing examples of practice that can be interpreted as employing conceptual approaches to embellishment to contextualise my own research which aims to further conceptualise embellishment. I will explain how I have conceptualised embellishment practice in the conclusion to this thesis, bringing together the practice and theory discussed in chapters 4, 5, and 6.

### ***Prada and irony***

The Italian fashion brand Prada often employ the use of embellishment in their designs and as Miuccia Prada comments, they take a technique and material (embellishment) more associated with eveningwear and use it for casual wear and day wear (Miuccia Prada in Bolton & Koda, 2012: 164-5). Prada also innovate in terms of creating new components for embellishment, such as the tiny knives and forks mixed with similarly small corkscrews and watch cogs for a dress in their autumn/winter 2006-7 collection 'to give them a tough look, a kind of punk sensibility' (Ibid., 154) and the bottle tops used for spring/summer 2007 (fig. 2.23). The fashion curators Andrew Bolton and Harold Koda also make a connection between Prada's subversion of the everyday with Schiaparelli's use of surrealism for the *Schiaparelli & Prada: Impossible Conversations* exhibition at the MET in 2012. Miuccia Prada recognises that these components can also be interpreted as surrealist, in that they are unexpected, removed from the 'expected context' of the kitchen onto high fashion clothing (Wood, 2007). They also play with 'scale and displacement of everyday objects' (Bolton and Koda, 2012: 154). By using everyday

objects such as knives and forks, Prada is subverting the narrative that high fashion is exclusive.

When Prada embellish representations of everyday objects onto garments such as knives and forks, she imbues the garment with irony and humour which can be interpreted as post-modern according to Adamson and Pavitt. Conceptually it raises a question; is the garment embellished only with the knives and forks, or is it embellished with *irony* itself, where irony is now a component. Obviously, irony is conceptual and implied, invisible in itself, and there are other designers who use embellishment to supplement the garment above and beyond the visual components used, and these will be discussed in the next section.

### ***Viktor & Rolf***

For Dutch designers Viktor Horsting & Rolf Snoeren's spring/summer 1998 collection *First Couture Collection*, the designers presented a show where 'each outfit was a study in the different elements that make up a couture garment' (Evans & Frankel, 2008: 56). They 'wanted to isolate the elements involved' (Grumbach et al., 2000: 9) such as fabric, colour, ornament, accessory, and embroidery. A grey polyamide evening dress simply titled *Embroidery* highlights 'the process of embroidery' (and I would suggest that what they mean is 'embellishment'); There are three large circles of embellished beads and paillettes (the term used in Grumbach et al., 2000: 21), two are complete but the third on the upper chest of the dress is half finished, still framed within the wooden embroidery frame (fig. 3.13). This embellishment refers directly to the craft and production of embellishment, making visible one of the tools that enable production. The embellishment is also unfinished and so it can be argued that this is an example of the deconstruction of an embellishment.



Fig. 3.13 Viktor & Rolf spring/summer 1998 collection *First Couture Collection*. Photograph © Inez van Lamsweerde and Vinoodh Matadin.

Viktor & Rolf's autumn/winter 2000-1 collection *Bells* (figs. 3.14-3.15) used actual bells instead of pearls (“we saw all these bells almost like pearls” Grumbach et al., 2000: 11) heavily embellished onto the garments; they wanted to make clothes that would be seen before they were heard; “how can we make something that can’t be seen, or can’t be seen at first?” (Grumbach et al., 2000: 11) and presented the collection by having the models emerge through smoke, creating a ‘shimmering, sonorous effect of great elegance and mystery’ (Evans & Frankel, 2008: 102). Their use of embellishment in this instance was primarily for the sound produced rather than the visual effect and can be conceptually imagined that they are embellishing sound onto a garment. Their work in this instance questions the materiality of embellishment, pointing to multisensory and a different approach to materials themselves. Embellishment that creates sound is also explored by the American artist Nick Cave who creates ‘outfits as masks’; his ‘soundsuits’ (Bolton, 2014: 27). Some of these ‘soundsuits’ create sound when ‘performed’ (i.e., worn) by the artist and this links with the idea of embellishment as performance that Viktor & Rolf explore in their autumn/winter 2000-1 collection. However, embellishment

as performance is not something that I explore in my practice, but the above examples of embellishment explore a more conceptual approach to embellishment that my research also explores.



Figs. 3.14-3.15 Viktor & Rolf autumn/winter 2000-1 collection *Bells*. Photographs © Peter Tahl for the Groninger Museum, The Netherlands.

## Part 2: Body and silhouette

In this section I discuss historical garment types that affect the body's silhouette as well as contemporary fashion designers whose work is worth noting because of their exploration and development of the fashioned silhouette. Through my practice I have supplemented the body's silhouette (see *The Arnhem Bodice*, Chapter 5, and *The Eclipse Dress*, Chapter 6) and so it is necessary to contextualise this practice through the discussion of other examples, both historical and contemporary, and how they interact with Hall's notion of proxemics (the term refers to the distance between people as they interact and is discussed in Chapter 1).

Entwistle argues that we do not see our bodies as 'finished' or complete and that we use clothing to change the body through dress (Entwistle, 2000: 19). One of the changes that we can affect on our bodies through clothing is the silhouette. And through this alteration of silhouette, we extend the 'natural' (or naked) boundaries of the body out to personal

space, the first boundary of the 'natural' (or naked) body being skin. All fashion designers are concerned with silhouette, so I limit my discussion to examples and practitioners that problematise silhouette (and personal space). I start with selected historical examples of clothing and dress that problematised personal space for both subject and object (wearer and viewer), and then move onto examples of fashion from the twentieth and twenty-first century.

The examples cited in this first section on the body and silhouette are all 'solid' forms. So, the wearer's silhouette is supplemented by garment, but these examples do not use embellishment and fabric manipulation techniques which complicate where the boundary of the garment, and by extension the body, 'finishes'.

I then move on to discuss examples of embellishment and fabric manipulation which can be said to apply Gabo's stereometric method (as discussed in Chapter 1) to augment the silhouette and create visible volumes beyond the surface of the fabric, starting with ruffs and then citing examples from contemporary fashion.

## **Panniers, crinolines, and bustles**

In this section I briefly discuss a selection of archetypal 'underlying structures' that enhanced and augmented (mainly) female clothing and silhouettes in Western Europe between 1800-1890<sup>13</sup> by extending the boundary of the body (not those compressing the body such as corsets) and therefore extending personal space (Bruna, 2015: 155 and Hesselbein, 2019). I limit my discussion to these three types of garments, or more accurately 'undergarment', as their iterations and impact on dress can still be seen today in the practice of contemporary fashion designers, some of which are discussed below.

### ***Panniers***

Panniers were fashionable from the eighteenth to nineteenth centuries after which the crinoline became the dominant fashion silhouette in Western Europe. They are undergarments attached to the waist to exaggerate the hips and were originally

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<sup>13</sup> The time 1800-1890 has been chosen because it was a period of radical silhouette enhancement using the undergarments cited in this chapter.

constructed from whalebone, metal, and fabric (fig. 3.16). The size (width) and use of panniers would depend on social status (Bruna, 2015: 116). The most extreme silhouettes produced with panniers would see the dress extending from the waist at a right angle to the body, making access to the wearer from either side almost impossible. The French writer, art and literary critic Théophile Gautier (1811-1872) mentions that the interior spaces of salons and theatres had to be changed to accommodate the fashion for panniers; armrests were taken off chairs and doorways were widened (Gautier & Lehmann, 2015: 211).

The pannier is an undergarment that supports the outer dress. It is the dress that becomes the extension of the boundaries of the body. However, the pannier also creates space between the 'under-body' and itself, creating a pocket of space between the body and pannier, which is then covered by the dress. I discuss this liminal space between a body and a garment in the section *The Japanese concept of 'ma'* later in this chapter.



Fig. 3.16 Corset, pannier, chemise c. 1760-1770, c.1775, c.1780. Photograph © The Kyoto Costume Institute.

### ***Crinolines and bustles***

The crinoline and bustle are associated with the recognisable silhouettes of the Second Empire (1852–70) and the beginning of the Third Republic (1870-1940) in France; the crinoline between 1845-1870 and the bustle between 1870-1890 (Bruna, 2015: 177).



Originally a crinoline was made from a ridged woven fabric made from cotton or linen and horsehair. From 1830 onwards the term crinoline was used to refer to the bell-shaped metal and fabric cages worn under skirts to give support to the silhouette of the garment (and body) (fig. 3.19). Critiques of the crinoline as an 'unwieldy object' were common in the press of the time (Ibid., 189); in Bruna (2015), there are several illustrations depicting how interpersonal distance become problematic for the wearer and anyone wanting to get closer to the wearer; in one photograph from 1855 a male suitor is trying to reach across the expanse of a dress with a large crinoline to kiss the wearer under the mistletoe (Ibid., 191) (fig. 3.17). In a detail from an illustration c. 1845-60 titled *Le Règne de la crinoline (The Reign of the crinoline)* a man can be seen awkwardly leaning across an expanse of crinoline and skirt to offer his arm to the wearer (Ibid., 181) (fig. 3.18). These skirts did not invite an invasion of the wearer's personal space and it can be argued that they helped to visually delineate the wearer's personal territory. I discuss the notion of personal territory further in Chapter 6.



Fig. 3.17 *The ardent suitor finds it difficult to reach across the crinoline to steal a kiss under the mistletoe, 1855* (from Bruna, 2015).



Fig. 3.18 Detail from *Le Règne de la crinoline*, c. 1845-60 (from Bruna, 2015).

The bustle augments the behind (bottom) of the wearer (fig. 3.20). Either constructed in a similar manner to crinolines from metal and fabric or in the form of cushions tied around the waist. The bustle did not create the same personal space issues attributed to the crinoline because of its size and placement but is mentioned here as a development in the hourglass silhouette, discussed in the next section. It is also worth noting that the technique of using padded ‘cushions’ to affect form and silhouette is used by some of the designers, also discussed in the next section.



Fig. 3.19 Crinoline, c. 1865. Photograph © The Kyoto Costume Institute.

Fig. 3.20 Two examples of bustle made from wire mesh and cotton tape, 1800s. Photographs © The Kyoto Costume Institute.

Both the crinoline and the bustle create a liminal space between the body and the undergarment, as mentioned in the above section on panniers. However, as with the pannier, they are then covered with a dress creating a new, outwardly solid, boundary of the body and therefore they are all included in my discussion here.

## **The hourglass silhouette and its development in contemporary fashion**

The hourglass silhouette of wide shoulders, narrow waist, curved hips, has in one iteration or another been the fashionable silhouette in the Western Europe since the fourteenth century (Bruna, 2015: 31). The historical (under) garments discussed in the sections above have, in conjunction with the corset which I do not discuss here<sup>14</sup>, enabled this exaggeration of the natural hourglass female form. The use of versions of these garments and this traditional silhouette continues in the twentieth and twenty-first centuries. For example, Christian Dior's New Look in 1947 used subtle padding to soften the shoulders and the cut of the hips was exaggerated (Palmer, 2018) to create a new post-war iteration of the hourglass silhouette (fig. 3.21).

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<sup>14</sup> The corset is a garment which suppresses the body and contracts the waist. It does the opposite of the garments that create and enhance the silhouette and body such as panniers, crinolines, and bustles and therefore, as a garment, it is beyond the scope of this PhD study.



Fig. 3.21 Christian Dior *Bar* ensemble, haute couture spring/summer 1947. Photograph © V&A Museum.  
 Fig. 3.22 Alexander McQueen *It's a Jungle Out There* autumn/winter 1997. Photograph © Robert Fairer.

### ***Alexander McQueen and transformation***

According to Geczy and Karaminas (2019) Alexander McQueen was rarely inclined towards treating the body as some natural, autonomous core on which garments were hung. Rather, he played with the silhouette, widening hips and shoulders, or created garments to which the body had to conform (Geczy & Karaminas, 2019: 73-102). Stephen Seely (Ibid., 2019) takes this concept further and suggests that McQueen, through his reference to animal features in his designs, points 'to spaces that exist beyond the "normal," "natural" body, which includes the conventional body-garment relation. What is generated is a rhetorically performative space' (Ibid., 73-102). However, the body as a 'performative space' is not the key focus of my thesis. What Seely suggest is that McQueen could transform bodies conceptually through the combination of animal and human in his designs (fig. 3.22). In the below section I discuss other designers who transform the body and silhouette in new ways as well as explore the transformative relationship between body and dress.

## **Georgina Godley**

Before Comme des Garçons' seminal *Body Meets Dress-Dress Meets Body* spring/summer 1997 collection, also known as the *Lumps and Bumps* collection (Perthuis, 2020: 667), there was the 1986 collection by Georgina Godley called *Hump and Bump* (Bolton, 2017: 15) or according to Arzallus et al. *Lump and Bump* (2016: 115) (figs. 3.23-3.24). Godley's collection 'celebrated the female form in exaggeration ... distorting the body's curves by using padded shapes which could be slipped on and off' (Arzalluz et al., 2016: 115), pre-dating the designer of Comme des Garçons Rei Kawakubo's use of a similar technique by eleven years. One image from this collection shows a short white stretch dress in profile (ibid., 97) (fig. 3.24), clearly displaying a padded 'bustle' form at the rear of the dress and model, a contemporary take on a historic silhouette.

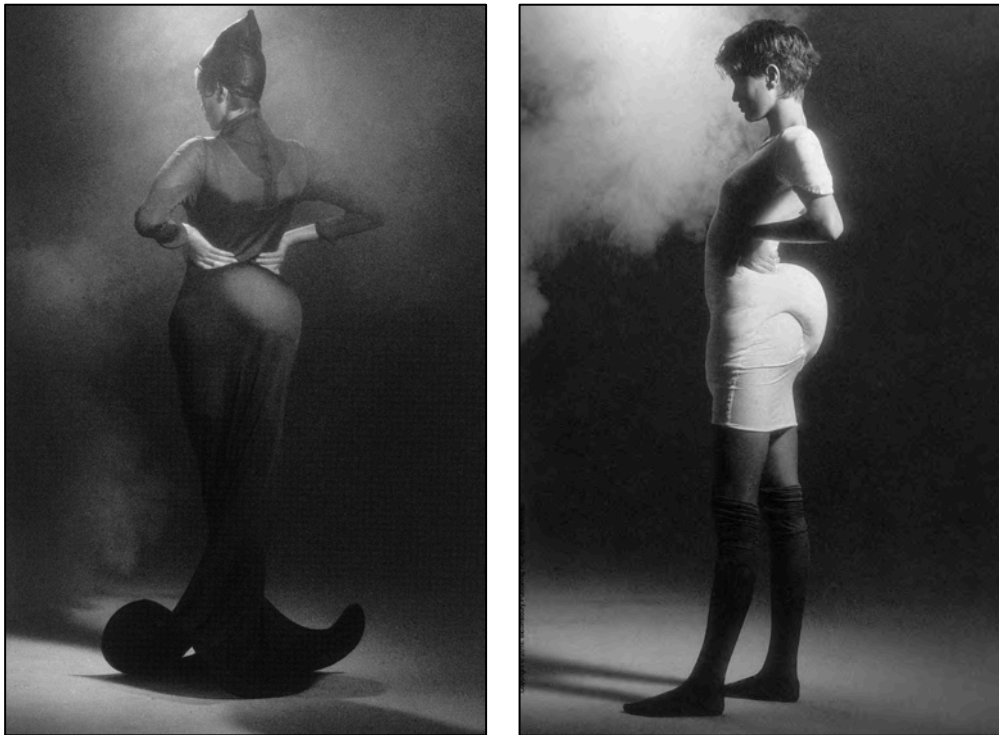


Fig. 3.23-3.24 Georgina Godley *Lump and Bump* autumn/winter 1986. Photographs © Cindy Palmano.

## **Comme des Garçons**

Much has been written about Rei Kawakubo's Comme des Garçons' *Body Meets Dress-Dress Meets Body* collection (Bolton, 2017; Wilcox, 2001; Betsky, 2017; Perthuis, 2020; Frankel et al., 2010; Arzalluz et al., 2016) or as Kawakubo is quoted by Amy de la Haye in

Wilcox (2001: 32) “body become dress becomes body” (figs. 3.25-3.26). Here, Kawakubo is articulating a concept mentioned in Gautier’s writing from 1872 (Gautier & Lehmann, 2017: 207) that body and clothing are inseparable, and this is further explored by Entwistle; that ‘human bodies are *dressed* bodies’ (Entwistle, 2000: 6). Bolton suggests that Kawakubo’s collection blurs the boundaries between ‘subject and object, which the designer presents as mutually inclusive (rather than exclusive) terms’ about wearer and viewer (Bolton, 2017: 15).

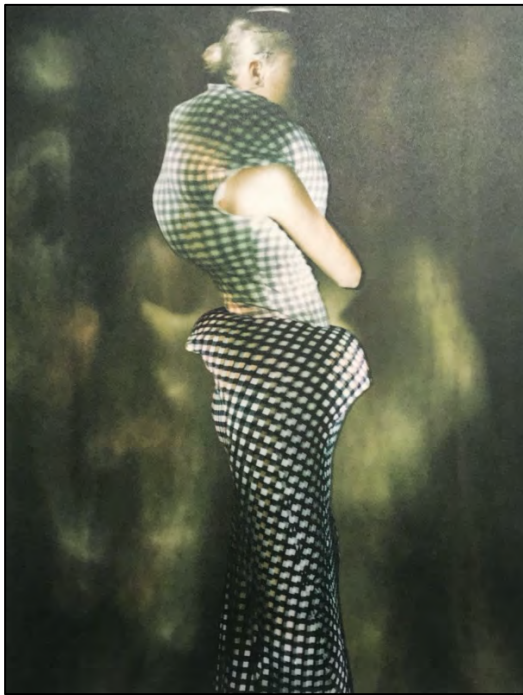


Fig. 3.25 Comme des Garçons *Body Meets Dress-Dress Meets Body* spring/summer 1997. Photograph © Paolo Roversi.

Fig. 3.26 Comme des Garçons *Body Meets Dress-Dress Meets Body* spring/summer 1997. Photograph © Kishin Shinoyama.

In Kawakubo’s manifesto released at the same time as her spring/summer 2014 *Not Making Clothing* collection, she discusses her creative process and makes much of trying to create newness “bereft of expectation” by avoiding what already has been done (Bolton, 2017: 17). For *Body Meets Dress-Dress Meets Body* Kawakubo felt she couldn’t create new clothes, so instead she used the technique of pads placed in non-traditional and asymmetric places on the body (such as to one side of the back, or high on the one hip only) to create ‘new bodies’ (Perthuis, 2020: 668). This is only possible because Kawakubo states that bodies and clothing are the same, but what marked this collection as particularly note-worthy, and indeed revolutionary, was her redefinition of traditional

(symmetrical) silhouettes; 'A 'new' body that – whether perceived as repulsive or attractive – makes us question the established assumptions, offering us a new understanding of the world' (Arzalluz, 2016: 153). Kawakubo's work, that started in the 1970s with the Japanese concepts of 'ma' (ma is a reading of a Sino-Japanese character describing time or space in between things, people, or events, discussed later in this chapter and in Chapter 5) and then fused body and garment together, now challenges preconceptions of the human body and silhouette extending both out to proxemic space in a revolutionary manner. The journalist Aaron Betsky suggests that with *Body Meets Dress-Dress Meets Body* Kawakubo was able to explore in new ways the 'sculptural and spatial' possibilities inherent in haute couture clothing construction (Betsky, 2017), possibly meaning that the handcraft used in the production of haute couture, as well as its less commercially minded approach to designing clothes, allows for innovation to occur.

Although *Body Meets Dress-Dress Meets Body* is the Comme des Garçons collection most academically written about, her creation of 'new bodies' through padding, and asymmetrical pattern cutting is a theme that she has returned to in subsequent collections, particularly since spring/summer 2014 onwards (figs. 3.27-3.28) where Kawakubo is no longer making clothes in the traditional sense but is instead making "objects for the body" (Bolton, 2017: 21). The silhouettes have become larger and sometimes, unlike *Body Meets Dress-Dress Meets Body* they have little reference to the actual silhouette of the body, becoming more sculptural and abstract; the subject becomes object.



Figs. 3.27-3.28 Comme des Garçons *Not Making Clothing* spring/summer 2014. Photographs © Fabio Iona for vogue.com.

### **Fabric manipulation; ruffles and pleats**

The example of garments and contemporary fashion discussed in the previous section create a 'solid' voluminous silhouette. Here, I discuss the use of fabric manipulation techniques to augment the silhouette, by building from the surface of the fabric out to the proxemic space surrounding the body. While techniques such as pleating and gathered fabric (ruffles) are not strictly embellishments because they are not components added to the surface of a fabric, but rather fabric added to another fabric, it can be argued that they employ Gabo's stereometric method and it should be noted that examples of fabric manipulation were included in the *SMUK* exhibition, Modemuseum Hasselt, Belgium, March 2020 and form part of their definition of embellishment; the curators make a connection between 'embellishment' and 'adornment', where the 'power of adornment lies not only in the art of decorating, but in concealing and revealing' (*SMUK* exhibition guide, 2019). Through fabric manipulations, the below examples supplement and transform the silhouette. They do not create solid volumes as discussed earlier in this chapter, but stereometric volumes that blur the lines between body, garment and proxemic space.

#### ***Ruffs***

Ruffs are essentially exaggerated collars, that at their most extreme circle the entire neck and can be seen in paintings from the end of the sixteenth century onwards (fig. 3.29).



The construction, size and material of ruffs varied from country to country (Bruna, 2015: 71), but some of the materials used were lace, pasteboard, whalebone, wire, and starched linen (fig. 3.30). Adopted by the aristocracy they were worn with dark clothing, framing the face, and serving the head on a platter of fabric. Bruna writes that the ruff restricted activity and was therefore an emblem of ‘aristocratic privilege’ (Ibid., 71), it can also be argued that they would inhibit interpersonal interactions within the personal and intimate distance of the wearer (for example kissing). It can be argued that ruffs were the first stereometric ‘garment’ due to the folding back and forth of the material that radiates from the neck; it is not a solid volume like the examples cited previously, but also incorporates implied volume. I see a direct connection between ruffs and *The Proxemic Dress* (2014) (an embellished dress produced prior to this study, discussed in the introduction of this thesis and in Chapter 1, see figs. 1.11-1.15), which used a similar, but looser, ‘back and forth’, whiplash, application of crin ribbon to the surface of the material and dress.



Fig. 3.29 Detail from *Portrait of Louis de Balzac d'Entragues*, anonymous, sixteenth century (from Bruna, 2015).



Fig. 3.30 Linen ruff with six layers, Basel c. 1685. Photograph © Jean Tholance for Les Arts Décoratifs, Paris.

### ***Ruffles, pleating and the stereometric method***

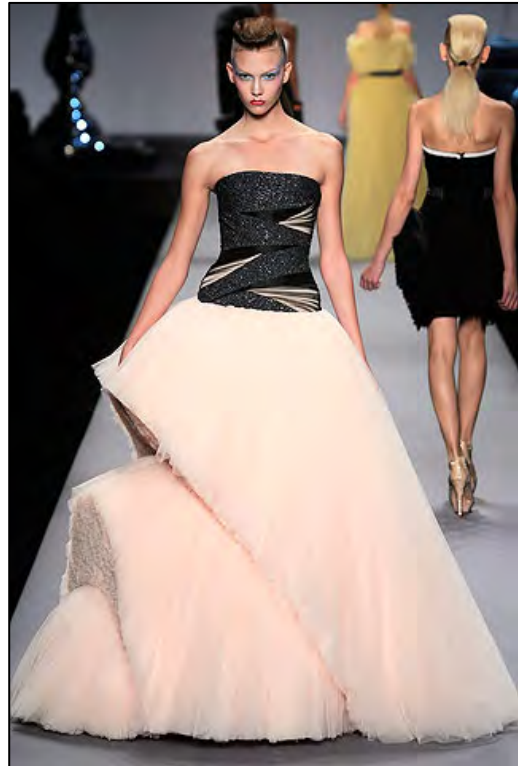
Hussein Chalayan’s pink tulle ruffle dress (*Before Minus Now* spring/summer 2000) (fig. 3.31) and Junya Watanabe’s use of complicated three-dimensional pleating in autumn/winter 2000-2001 (fig. 3.32) also employ the stereometric method of implied volume (see *The stereometric method*, Chapter 1), where the proxemic space surrounding

the body is not solid but occupied by as much air as it is by fabric. Returning to Viktor and Rolf, their spring/summer 2010 ready-to-wear collection (figs. 3.33-3.34) features intensely pleated tulle dresses which are literally cut through, as if with a chainsaw, back to the body (or at least the garment underneath). A direct comparison to Gabo's *Two Cubes (Demonstrating the Stereometrics Method)* (1930, fig. 1.17) can be made here; by cutting away the volume of the fabric it is still represented by *implied* volume.



Fig. 3.31 Hussein Chalayan pink tulle dress spring/summer 2000 (on the right) from the *SMUK* exhibition at Modemuseum Hasselt, Belgium, 2019-2020, seen here with two 'performative sculptures' by Walter van Beirendonck spring/summer 2011 that also employ the use of ruffles. Photograph © Richard Sorger.

Fig. 3.32 Junya Watanabe autumn/winter 2000-2001. Photograph © Condé Nast Archive.



Figs. 3.33-3.34 Viktor & Rolf spring/summer 2010. Photographs © Marcio Madeira for vogue.com.

These examples are cited because they supplement the naked silhouette of the body, but this addition to the form is not solid; they use fabric manipulation and the stereometric method of implied volume rather than solid mass. These examples of designers using pleating and ruffles in their work address some of the thematic concerns of my project, but the designers do not, as I am aware, directly engage with the conceptual implications of their work.

### **Part 3: Body and space**

In the next section I move my discussion from the body and silhouette to the body and space, first by discussing the space between the body and garment; the Japanese concept of 'ma'. Then I move on to discuss examples of embellishment practices that extend out to the proxemic space beyond the surface of the body and garment, such as those produced by Givenchy, Halpern, Iris van Herpen, and Hussein Chalayan.

In the introduction to this thesis, I introduced the term 'proxemic embellishment' (a term used in this study to describe an embellishment that extends beyond the surface of the

garment out to surrounding proxemic space) to categorise this type of spatial embellishment. In this chapter I will further categorise proxemic embellishments into 'hard' and 'soft'.

## **The Japanese concept of 'ma'**

'Ma' is a Japanese concept concerned with the space between the body and garment<sup>15</sup>. The fashion historian and curator Miren Arzalluz suggests that twentieth and twenty-first century designers, using ma and the exploration of radical new silhouettes allow us to re-think our bodies for the twenty-first century and that these clothes are not a 'defence against the world. But a bridge towards it' (Arzalluz, 2016: 119); the enhancement of silhouette, in terms of added ma, expands the surface boundary of the garment and body, supplementing personal space, and extends the boundaries of the body whilst reaching out spatially into the world. The ma of a garment can be seen in the work of Arkadius, a graduate from Central Saint Martins (in the 1990s, but exact date unknown) (figs. 3.35-3.36). Arkadius created unusual silhouettes and volumes using boning (a stiff material more commonly used in the production of corsets), but due to the semi-transparent quality of the fabrics used to make the garments, it is possible to visualise the space between body and garment; the ma. The sleeves of Alexander McQueen's dress design for *Sarabande* spring/summer 2007 also makes visible its ma (fig. 3.37). I discuss ma in greater detail in Chapter 5.

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<sup>15</sup> The focus for this project is examples of dress and embellishment in Western Europe. Although 'ma' is a Japanese concept, it is a spatial concept as well as essential to the discussion in Chapter 5 of how body and garment can be viewed as inseparable.



Figs. 3.35-3.36 Examples from Arkadius' graduate collection from Central Saint Martins (date not specified). Photograph © Arkadius.



Fig. 3.37 Alexander McQueen *Sarabande* spring/summer 2007. Photograph © Sølve Sundsbø for the MET Museum.

## ***Fashion and architecture***

Before I move 'out to space' in the next section of this chapter, I discuss below two examples of designers who have blurred the line between fashion and architecture. They are worth noting here because the structure of their garments creates space for 'ma' to exist between the body and the interior surface of the garment itself. The below examples occupy space through their enhanced silhouette and volume, but it is the space below the surface of the garment that I am concerned with here.

There are strong links between fashion and architecture (Quinn, 2003; Crewe, 2010; Hodge, 2006); according to the academic Louise Crewe 'the two are united through a focus on the body and its wrapping, revealing and sheltering in space' (Crewe, 2010); the body inhabits clothes just as it inhabits architectural spaces (Quinn, 2003: 123). According to Quinn, both disciplines 'developed in tandem' and are concerned with protection of the body (Ibid., 15). This line between garment and architecture is blurred in some of the examples I cite below, such as Lucy Orta and Rick Owens, where the space between the body and the garment is increased through the building of a structural garment to the extent that, like the above examples of Arkadius and McQueen (figs. 3.35-3.37), the garment has an increased ma between the body and the garment.

Lucy Orta is not a traditional fashion designer, but her work concerns the interface of body, garment, and space as a way of discussing wider social issues such as homelessness. Her 'wearable structures' (Ibid., 5) in her own words 'breaks down barriers between clothing and architecture to remove many of the limitations they represent, with the intention of eventually leading to some sort of transformation' (Ibid., 155). Orta's garments also reference tents (like Owens) and are portable shelters, but according to Quinn her point of difference from conventional fashion is her 'use of clothing to produce and define urban space' (Ibid., 157) as well as refuting 'the premise that clothing and shelter are separate entities' (Crewe, 2010). In Orta's work the subject becomes object to raise awareness of social issues and her work creates safe personal space for the wearer which, unlike Rick Owens' garments below, function as proper habitats (figs. 3.38-3.39).



Fig. 3.38 *Refuge Wear* (1998), Lucy Orta. Photograph © Lucy Orta.

Fig. 3.39 *Habitent* (1992-93), Lucy Orta. Photograph © Lucy Orta.

The American Rick Owens designed ‘wearable tents’ for his spring/summer 2019 menswear collection *Babel* (Leitch, 2018) in the form of parka jackets that project out from the body, underpinned by structures such as tent poles (figs. 3.40-3.42). Although these garments are habitable (they can be worn), they do not perform as habitats but rather *evocations* of habitats. However, they increase the ma between wearer and garment as well as project the body’s silhouette out to the surrounding space using an architectural technique.



Figs. 3.40-3.42 Rick Owens spring/summer 2019. Photographs © Luca Tombalini for vogue.com.

## Proxemic Embellishment

In this section I discuss examples from contemporary fashion that use 'proxemic embellishments'; a term I introduced to describe embellishment that extend beyond the surface of the garment out to surrounding proxemic space. These examples are a relatively recent development in the practice of embellishment; the oldest example I reference is a Balenciaga dress from 1965 (fig. 3.57), which uses ostrich feathers, but most of the examples I discuss here are from 2008 onwards. As can be seen in these examples, the use of proxemic embellishment has the possibility to supplement the silhouette in new and interesting forms and rather than the 'solid' silhouettes discussed earlier in this chapter, they create an ambiguous personal space surrounding the wearer.

The examples of proxemic embellishments discussed the below sections differ from the practice produced for this study because they do not use traditional embellishment components or techniques in their production. Although the tensegrity technique is a new embellishment technique (developed for this study employing tensegrity in its construction and the stereometric method to make solid the implied volumes between components, introduced in Chapter 1), it employs traditional components and basic embellishment application techniques (components are applied to the surface of the fabric with thread). The exemptions from this are the examples of dresses by Givenchy, Balenciaga, and Halpern cited below (figs. 3.55-3.58) that use feathers to create proxemic silhouettes.

I have subdivided my discussion of proxemic embellishments into the categories 'hard' and 'soft' but bridging these two concepts is the notion of 'movement' which can be seen in examples of both hard and soft proxemic embellishments. These subcategories relate to the two garments produced as part of this research project; *The Arnhem Bodice* which will be discussed in Chapter 5 uses 'hard' proxemic embellishment, and *The Eclipse Dress* which will be discussed in Chapter 6 uses 'soft' proxemic embellishment and also embodies movement, but both utilise the tensegrity technique. 'Hard', 'soft' and 'movement' are all properties of my practice.



### ***'Hard' proxemic embellishments***

The term "hard proxemic embellishment" primarily refers to the choice of materials used for the structure and the outcome of the embellishment. *The Arnhem Bodice* (an embellished garment produced for this study, see Chapter 5) uses a version of the tensegrity technique to produce a mass of sequin structures that are held rigid through the tension of the thread. In the below section I discuss examples of practice by fashion designers that can also be termed as hard proxemic embellishments. Hard proxemic embellishments keep the outside world at bay; hard proxemic embellishments utilise materials, such as metal and plastic -and in the case of the tensegrity technique plastic sequins, thread, and tension- that inhibit the flexibility in the structure, and this means that it is not easy for another person to encroach on the personal space of the wearer, much like the example of the crinoline cited earlier in this chapter (fig. 3.17).

The Japanese designer Noir Kei Ninomiya's *Metal Couture* autumn/winter 2021 collection featured garments embellished with metal spikes, projecting outward, 'great for nonnegotiable (sic) social distancing' according to the fashion journalist Luke Leitch (figs. 3.43-3.45). Ninomiya's use of metal spikes for this collection is reminiscent of the fashion academic Andrew Groves' graduate collection from the MA Fashion course at Central Saint Martins in 1997, which featured a mask covered with nails (sharp ends facing outwards) which engages with proxemics and personal space as it aggressively discourages close contact.

Ninomiya's practice often engages with proxemics through the diverse techniques of material manipulation that he uses, many of which are reminiscent of the stereometric method to create implied volumes and silhouettes around the wearer.



Figs. 3.43-3.45 Noir Kei Ninomiya *Metal Couture* autumn/winter 2021. Photographs © Noir Kei Ninomiya

The Dutch fashion designer Iris van Herpen does not make a direct reference to embellishment in her work, and it is possible that she does not view her work to use embellishment at all. However, using my definition of embellishment as outlined in the *Introduction* of this thesis, aspects of her work are concerned with ‘the application or addition of components or materials to the surface of an existing fabric creating a three-dimensional relief or pattern’ I argue that aspects of her work can be defined as such.

I have already referenced the work of Iris van Herpen in the previous *Chapter 2: New materials for embellishment* which discussed her use of new materials and forms for embellishment (her laser-cut silicone ‘feathers’ for a dress in her autumn/winter 2012-14 collection, Chapter 2, figs. 2.41-2.42). Van Herpen’s work is also led by new technologies and innovative processes such as laser-sintering, stereolithography, high-speed digital photography (Johnston, 2015:247), and kinetic movement (see fig. 3.52) in the production of ready-to-wear fashion or haute couture. Her work is included in this section because her embellished dresses (and her practice is mainly dresses) explore the proxemic space of the body further than dresses that use conventional or traditional embellishment techniques.

Iris van Herpen’s *Capriole* collection from July 2011 uses an acrylic material to create jagged spikes ‘reminiscent of ice floes’ (Herpen, et al., 2016: N/A) when attached to the surface of the garment (fig. 3.46). The forms are in effect giant triangular sequins,

attached along one edge, they project out to space and as an embellishment they explore proxemic space. Van Herpen uses laser-cut three-dimensional transparent acrylic and three-dimensional printing to create crystalline forms that are attached to dresses in *Voltage* January 2013, which also begin to explore proxemic space through their forms (fig. 3.50-3.51).



Fig. 3.46 Iris van Herpen *Capriole* Couture 2011. Photograph © Michel Zoeter for Iris van Herpen.

Fig. 3.47 Iris van Herpen *Chemical Crows* autumn/winter 2008. Photograph © Michel Zoeter for Iris van Herpen.

Iris Van Herpen employed the use of umbrella spokes in her *Chemical Crows* January 2008 collection (fig. 3.47). The spokes were not an embellishment emanating from the surface of the fabric, but the actual form of the garment. In her *Refinery Smoke* July 2008 collection (fig. 3.48) van Herpen used metal gauze, gathered onto the body, but allowed to form smoke-like volumes of material beyond the body's natural parameters (Herpen, et al., 2016). The semi-transparent property of the metal gauze is a solid form but suggests something more ephemeral. This solid but transparent, ephemeral building into the proximity of the body is used again in *Crystallization* spring/summer 2011; van Herpen developed a technique using a hot air gun and pliers on plastic to create the effect of water splashing around the dresses (fig. 3.49). These last two examples are more akin to 'fabric manipulation' than embellishment, but both examples have strong proxemic properties.



Fig. 3.48 Iris van Herpen *Refinery Smoke* spring/summer 2009. Photograph © Michel Zoeter for Iris van Herpen.

Fig. 3.49 Iris van Herpen *Crystalization* spring/summer 2011. Photograph © Michel Zoeter for Iris van Herpen.



Figs. 3.50 Two dresses by Iris van Herpen *Voltage* couture 2013 in the SMUK exhibition, Modemuseum Hasselt, Belgium, March 2020. Photograph © Richard Sorger.

Fig. 3.51 Iris van Herpen *Voltage* couture 2013. Photograph © Michel Zoeter for Iris van Herpen.

### ***Proxemic embellishments and movement***

The finale dress from Iris van Herpen's couture 2019 catwalk (fig. 3.52) features a kinetic embellishment made in collaboration with the American kinetic sculptor Anthony Howe that is reminiscent of wings, made from stainless steel, aluminium, and feathers, which rotate while the model walks (Phelps, 2019). Embellishment and movement are under explored, and further problematise proxemic embellishments, though we can assume that the Givenchy dresses made with feathers (see figs. 3.55-3.56) also move, but in a more natural manner rather than van Herpen's mechanised wings. The embellishments produced for the *Eclipse Dress* (Chapter 6, figs. 6.70-6.72 and 6.107-6.110) also have kinetic properties as a by-product of their materiality and construction, and this can be seen to full effect in the video of the model wearing it (see YouTube Video 11: *The Eclipse Dress (Movement)* [https://youtube.com/shorts/Dm8FC\\_1Vf8E](https://youtube.com/shorts/Dm8FC_1Vf8E)). The kinetic potential of proxemic embellishments, while interesting and a possible area to be explored in my future practice after this project, is not the focus of this thesis. However, movement is an element of *The Eclipse Dress* that I will introduce and discuss in Chapter 6.



Fig. 3.52 Iris van Herpen couture 2019. Photograph © Alessandro Lucioni for vogue.com.

Hussein Chalayan's *Floating Dress* from *Kaikoku* autumn/winter 2011-12 is made from cast fibreglass (figs. 3.53-3.54). Chalayan has applied components associated with embellishment (Swarovski crystals) in a non-traditional manner i.e., they have not been attached to the dress using thread or glue. Instead Chalayan has used technology to develop an unconventional new technique where it can be suggested that the embellishment is allowed to (temporarily) exist in the space/proximity around the dress and body; paper 'petals' appear weighed down by a small crystal droplet and each pairing is attached to the fibreglass dress and spring-loaded via a small metal rod which are released into the air and descend out to the proxemic space around the dress, much like sycamore seeds and it is another example of a kinetic proxemic embellishment.

This dress is interesting as it is not a dress in the traditional sense; it is not made from fabric, it is rigid and moves on wheels, and although it can be worn by a model it is more akin to a kinetic sculpture than clothing. It is the concept of a dress rather than an actual garment. The *Floating Dress* is further problematised by the embellishment's temporary nature; the 'fly and fall' of the components. However, it does address themes that I discuss in my practice; the use of a new embellishment technique which extends from the surface of the body and garment and out to proxemic space.



Figs. 3.53-3.54 Hussein Chalayan; the *Floating Dress* from *Kaikoku* autumn/winter 2011-12. Photographs © Nicholas Alan Cope for the MET Museum 2016.

### ***'Soft' proxemic embellishment***

"Soft' proxemic embellishment' again refers to the choice of materials used by the designers cited in this section. The structures of the embellishments used on the garments (all dresses) are less rigid and perhaps invite more interaction between wearer and viewer because of their tactility, particularly where feathers are used. *The Eclipse Dress* (Chapter 6) is 'softer' than *The Arnhem Bodice* because of the sequin film used in the construction of its proxemic embellishment, which bends and moves.

Evening dresses from Givenchy's autumn/winter haute couture 2019 collection use feathers as a proxemic embellishment (figs. 3.55-3.56) that supplements the silhouette. The use of feathers in this way is not unique and very possibly references the Givenchy dress from 1969, and the Balenciaga dress from 1965 (see fig. 3.57). However, when viewed through the lens of my project's themes and key terms, my reading is that this embellishment employs Gabo's stereometrics method to imply the invisible aura of intimate space as defined by Hall (see Chapter 1 *Proxemics* and Chapter 6). Halpern's spring/summer 2021 presentation featured a large orb mini dresses made of feathers, making the wearer into a giant 'powder puff' (fig. 3.58). As mentioned previously, the

fashion journalist Chloe Street cites this as an example of ‘socially distanced dressing’ (Evening Standard 22.09.20); clothes that do not allow close proximity, useful in the times of the COVID-19 pandemic. These examples directly address notions of proxemics, and particularly personal space (Leslie Hayduk defines personal space as ‘the area individual humans actively maintain around themselves into which others cannot intrude without arousing discomfort’ (Hayduk, 1983: 118), and this is discussed further in Chapter 6), by keeping the world at arms-length. However, Halpern’s dress appears more spherical and solid, whereas the Givenchy examples have a more conventional dress base to which the proxemic embellishment extends, making them more relevant to my own practice; Halpern’s feathers add little to the spherical base silhouette of the dress, whereas Givenchy’s dresses supplement the silhouette.



Figs. 3.55-3.56 Givenchy autumn/winter haute couture 2019. Feathers are embellished on the garment but exist in the proxemic space of the garment. Photograph © Alessandro Lucioni for vogue.com.

Fig. 3.57 Givenchy dress 1969, and Balenciaga dress 1965, both embellished with ostrich feathers. Photographs © Karin L. Lewis for the MET Museum.





Fig. 3.58 Halpern spring/summer 2021 Photograph © Halpern.

The fashion designer Hussein Chalayan directly addresses the use of space in his practice. The fashion editor Susannah Frankel in discussing Hussein Chalayan claims that; ‘Space is also central to his vision: clothing is an intimate zone around the body, architecture is a larger one’ and can also perform as territory (Frankel in Wilcox, 2001: 53). Chalayan himself states;

Everything around us either relates to the body or to the environment. I think of modular systems where clothes are like small parts of an interior, the interiors are part of the architecture, which is then part of an urban environment. I think of fluid space where they are all a part of each other, just in different scales and proportions. (Chalayan in Quinn, 2003: 122).

Here, Chalayan is establishing the links, and lack of distinctions between his thinking about clothing, (interior) space and architecture and his intention to create ‘new geographic forms and structures’ for the body (Crewe, 2010), suggesting that he is also questioning where the body and garment exist in relation to the surrounding space.

For *Readings* spring/summer 2008, Chalayan collaborated with the photographer Nick Knight on a film for Knight’s fashion broadcasting company SHOWstudio. The film documents a series of garments by Chalayan embellished with Swarovski crystals and fitted with moving lasers giving off red beams of high intensity light expressing Chalayan’s

concept of 'the collections' sun-worshipping origins, mapping out an icon's projected and received energy using lasers' (Violette, 2011: 183). The lasers radiate from the surface of the body/garment, much like the bubble of personal proxemic space, but are able to extend much further marking out a 'territory' through light projection. As the body/garment moves in space, so do the lasers but always with the body/garment at its epicentre (fig. 3.59). It can be argued that the lasers are an embellishment of light projection that problematise the boundaries of body/garment and their interactions in space because they are far-reaching and without a definite 'end'.

This example was initially hard to categorise in terms of where it sits in the above terms of embellishment. The use of light as an embellishment was referred to by Ashish, cited in Chapter 2, and Chalayan's use of lasers is an extension of this idea. I conclude this section on soft proxemic embellishments with Chalayan's dress from his *Readings* collection because the light is not solid and as can be seen on the dancefloors of nightclubs, it can actively invite interaction with the viewer.



Fig. 3.59 Hussein Chalayan *Readings* spring/summer 2008. Photograph © Moritz Waldermeyer.

## Conclusion

In this second part of the contextual review, I have discussed practice and practitioners whose work touches upon some of the concepts that my practice embodies; the use of embellishment as essential to the work and practice that can be read as using a more conceptual approach to embellishment. These are my readings of the practitioners' conceptual use of embellishment, but again, this adds to this study's contribution to new knowledge and the later discussion of how my practice is conceptualised in chapters 4, 5, and 6 and which will be summed up in the conclusion of this thesis.

I then discussed the body and silhouette, citing examples of archetypal historical garments as well as specific examples from twentieth and twenty-first century Western fashion designers, and how the body can be transformed through a supplemented silhouette.

Finally, I have moved my discussion to the body and space, first by discussing examples from contemporary fashion that embody the Japanese concept of 'ma'; the space between the body and garment and then I move beyond the surface of the garment to discuss and define hard and soft proxemic embellishments.

In the next chapter I discuss materiality and technique in relation to this practice-led PhD project and I begin to conceptualise embellishment through engagement with Jacques Derrida's theory of supplementarity, applying it to embellishment practice for the first time.

# Chapter 4: MATERIAL into PRACTICE

## Introduction

In Chapter 2 I discussed the history and materiality of embellishment as well as the development of the techniques used in the production of embellishment. In this chapter I discuss the development of a new technique for embellishment, the tensegrity technique which I introduced in Chapter 1. I move on to discuss the materiality of components in relation to my practice, past and present, as well as early experiments at 'growing' embellishments which explore new materials and techniques. Exploring the materiality of embellishment and testing different forms and structures enables me to investigate the relationship between embellishment, fabric, and space.

I then move beyond the practicalities of embellishment to discuss the conceptual implications of my practice; What happens when the raw materials of embellishment - bead, sequin, thread- are applied to the fabric (also called 'material') through technique to create an embellishment? As discussed in previous chapters, embellishment is undervalued as a concept, which is reflected in limited (in comparison to, for example, embroidery) sources that examine its histories and theorisations; and as practice, which usually prioritises the decorative aspects of embellishment, setting aside its potentials for the negotiation of space around the body.

I discuss how I conceptualise my practice using Derrida's theory of 'supplementarity' to argue that the embellishment and the fabric are essential to, and supplement, each other. Developing the argument put forward by Koda & Martin (1995) and Wilcox (2007) in Chapter 3 and their discussion of the essential nature of embellishment to the production and realisation of haute couture, in terms of my practice the fabric is not complete until it has been embellished and therefore the garment and design cannot exist if it is not embellished. This notion that without embellishment there is no design in itself, can also be read in the practice of Manish Arora, Ashish Gupta, and Elsa Schiaparelli, also discussed in Chapter 3.

## The use of technique in my practice

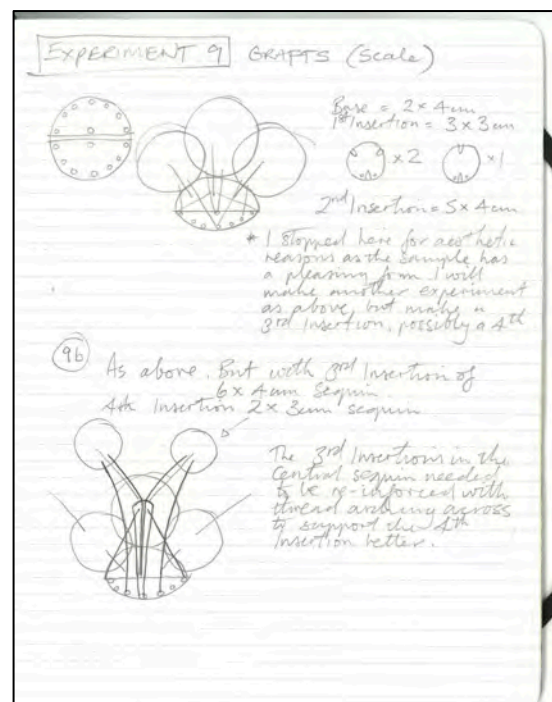
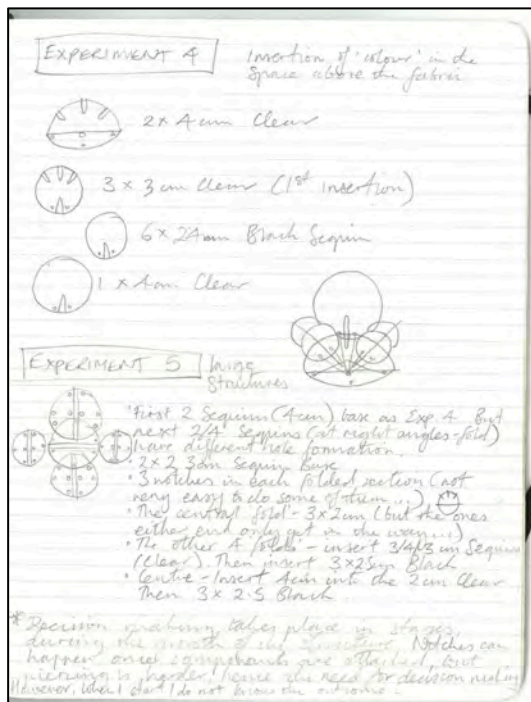
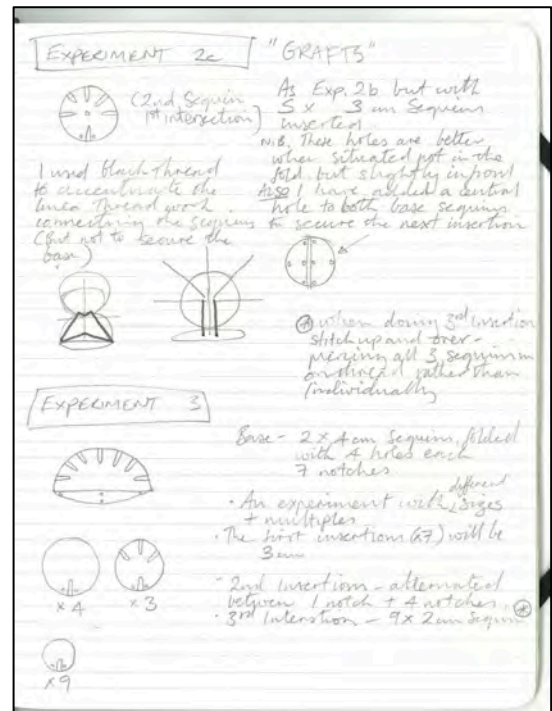
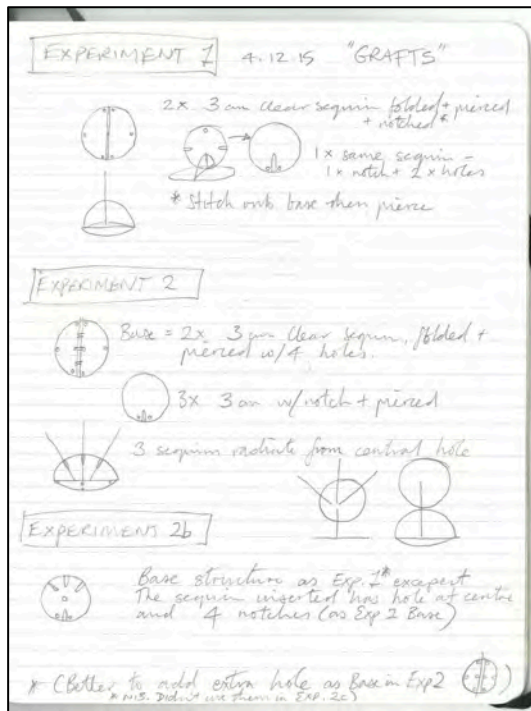
The practice prior to this PhD study relied heavily on the production of embellishments in small workshops based in Mumbai, India. The technique that was commonly used was the 'Lunéville' method, also known as 'tambour' beading (an embellishment technique that uses a tambour hook, like a crochet hook, to work on the reverse side of the fabric, creating a chain stitch that links the component (bead or sequin) to the fabric, see Chapter 2). Some initial sampling was made in my studio either by myself or assistants. *The Proxemic Dress* (see Chapter 1) was produced collaboratively with the Mumbai workshops, who sewed the bugle beads onto eighteen metres of crin ribbon, and I then sewed the ribbon onto the dress by hand.

The practice for this research developed a new technique for embellishment I call the tensegrity technique (introduced in Chapter 1); the originality of the technique lies in its use of sculptural tools such as tensegrity and the stereometric method; both sequins and thread in tension create relatively stable structures that, when applied to the body via the garment as a carrier, make possible the visualisation and exploration of the body's stereometric proxemic space.

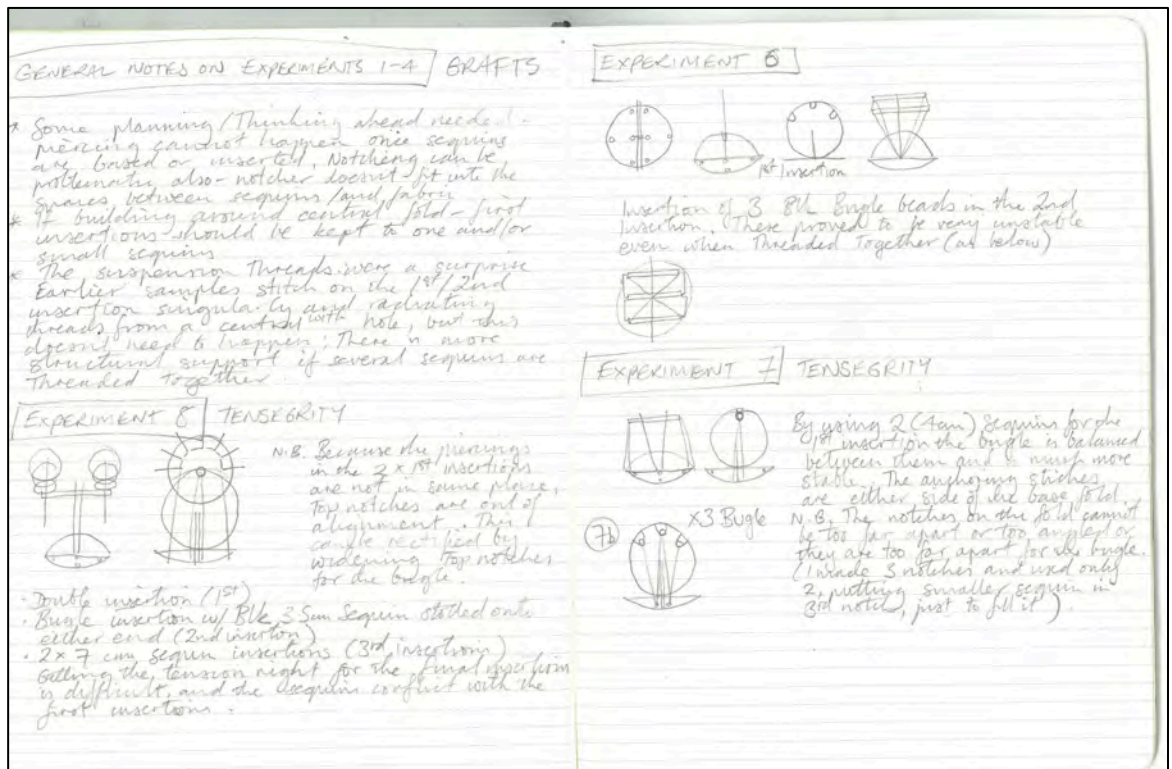
### A new technique: the development of the tensegrity technique

This novel technique has not been used before in the production of a fashion embellishment. Its development was partially inspired by the work of Naum Gabo, a sculptor, painter and theorist, who, instead of traditional sculptural techniques such as carving or moulding, built his sculptures from interlocking elements, engaging with processes close to architectural construction. Stereometric construction was foundational to his work, which can be seen in *Constructed Head No.2* (1916) (see Chapter 1, fig. 1.16). As discussed in Chapter 1, Gabo's stereometric method made visible implied volumes for the first time. The development of the tensegrity technique was partially inspired by Naum Gabo's stereometric sculpture *Constructed Head No.2*, 1916, as well as children's slotted building cards (see Chapter 1, fig. 1.21). The initial experiments happened quickly, almost as soon as I sat down at the table in my studio with the components, quickly producing a series of experiments in December 2015 (see figs. 4.1-4.10).

As discussed in Chapter 1, two sequins are folded in half and sewn (grafted) next to each other onto the surface of the base fabric. A notch is made into the raised 'fin' of both sequins and another notched sequin is inserted into this. This sequin is termed the '1<sup>st</sup> insertion'. The 1<sup>st</sup> insertion sequin is then tethered to the structure with thread and tension, sewn through holes either side of the notch in the inserted sequin.

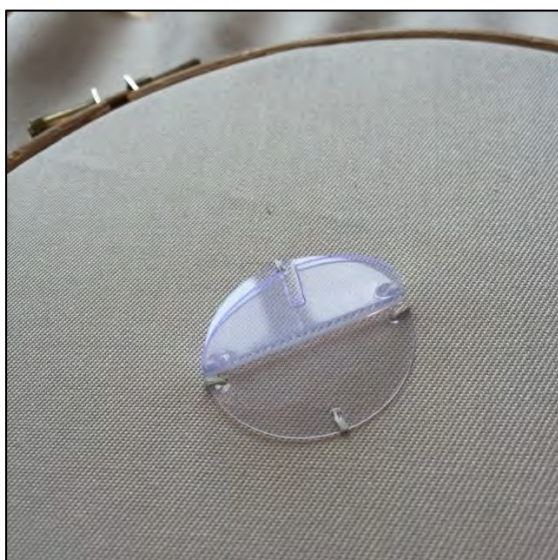


Figs. 4.1-4.4

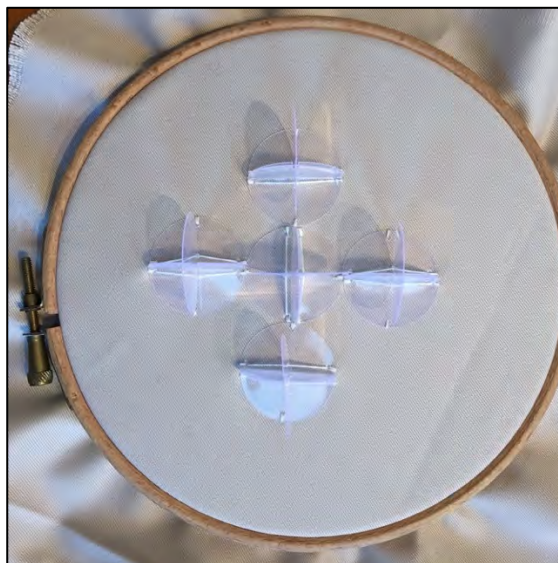
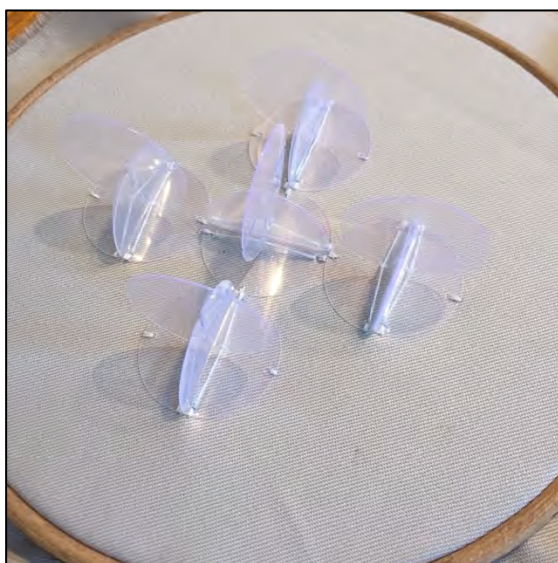


Figs. 4.1-4.5 The first pages of what would become the Reflective Design Journal (RDJ) made in early December 2015. These notes were made on the pages of my Moleskine 2015 diary, but starting in 2016 I used a dedicated Moleskine notebook. Photographs © Richard Sorger.

In *Experiment 1* (04.12.15) (figs. 4.1-4.9) two 3cm sequins are folded in half and grafted onto the base fabric. A notch is cut and a 3cm clear sequin inserted into it (the 1<sup>st</sup> insertion). This is tethered by thread sewn at a tension through the base fabric and sequins, and through holes either side of the notch in the inserted sequin. The form has then been repeated five times. Further experiments are iterations of this basic technique, though the size of the components can vary and this produces diverse tensegrity structures.



Figs. 4.6-4.7 The first two stages of the nascent tensegrity technique and *Experiment 1*. A notch has been cut into the 'fin' of two folded sequins. Then a third notched sequin is inserted into the fin's notch and secured with thread from either end of the base sequin, through holes created either side of the third sequin. The third sequin is referred to as a '1<sup>st</sup> insertion' as it is the first insertion into the base sequins. 30mm clear plastic sequins, white thread, cotton fabric. Photographs © Richard Sorger.



Figs. 4.8-4.9 The first structure was then repeated four more times making an initial grouping of the technique. 30mm clear plastic sequins, white cotton thread, cotton fabric. Photographs © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 1</i>
1		✓	<i>Experiment 1</i> ; these initial experiments produced a new technique (1) using tensegrity and embodying the stereometric method (2). The structures are stable when applied to fabric (3 & 5) and their three-dimensional structures build out to the space above the fabric (7 & 8). Criteria 4 and 6 are not applicable here as it is too early in the development of practice to think about application onto the body. This initial practice is a key moment in this study and immediately it became apparent that there were many possibilities for experimenting with structure and form. Subsequent practice will explore iterations of this technique.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.



## The tensegrity technique; iterations and scale

Early experiments in December 2015<sup>16</sup> and January 2016 explored form and scale; how many notches could be inserted in either the base sequins or the 1<sup>st</sup> insertions and what size sequin could be inserted into these without the structure becoming too ‘crowded’ with sequins? After the initial success of *Experiment 1* (04.12.15), *Experiment 2*, *Experiment 2b*, *Experiment 2c*, and *Experiment 3*, I explored the basic technique in terms of where notches and pierced holes were best placed to enable a more stable structure (see RDJ figs. 4.1-4.2), and my writing in the RDJ focuses on these observations and adjustments. Experiment 4 is quite a minimal presence in the RDJ with only notes about which sequins were used for the insertions, however, the drawing of the end structure is familiar- versions of this form are returned to and repeated when first applying my practice to a mannequin (see Chapter 1, figs. 1.24-1.25 and Chapter 5).



Fig. 4.10 *Experiment 2*, *Experiment 2b*, *Experiment 2c* (04.12.15). *Experiment 2c* uses black thread for the first time. 30mm clear plastic sequins, white and black thread, cotton fabric. Photograph © Richard Sorger.

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<sup>16</sup> Please note that the first iteration of my Reflective Design Journal was in the back of my 2015 diary. The date for the first experiment was 04.12.15, but there are no further dates. While some of the following experiments (Experiments 2-9b) no doubt occurred on 04.12.15, some of them would have been completed on other days in mid-December.



Fig. 4.11 *Experiment 3* (December 2015). 20mm, 30mm and 40mm clear plastic sequins, white thread, cotton fabric. Photograph © Richard Sorger.

Fig. 4.12 *Experiment 4* (December 2015). 30mm and 40mm clear plastic sequins, 25mm black plastic sequins, white thread, cotton fabric. Photograph © Richard Sorger.

General notes written about experiments 1 to 4 include information about planning ahead when starting a structure- I might not know how it will turn out, but adding notches and pierced holes while the structure is being made is problematic; in terms of marking out and executing the notches or holes while the sequin is part of the structure. Also, I noted that the tension (or ‘suspension’ in this entry of the RDJ, see fig. 4.5) threads do not need to ‘radiate’ or originate from a central hole in the base sequins and they can also tether several sequins together at the same time rather than individually.

Intention	Action		Reflection on experiments 2-4
1		✓	Experiments 2-4 use the tensegrity technique to embody practice (1 &2). They are stable (3), they can be applied to fabric (5). They have the potential to be applied to the body via a garment as a carrier (6), and the structures supplement the fabric and build out to its proxemic space (7). There is a potential to build larger and taller structures (8). However, at this stage they are very small structures (approximately 5cm) because of the size of the components used, and they, as yet lack visual impact if and when applied to the body through a garment. Increased visual impact through scale will be explored later in this study, particularly in Chapter 6.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✓	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

Of particular note is *Experiment 5* (December 2015) which uses multiple bases and forms a complicated dome-like structure of 1<sup>st</sup> and 2<sup>nd</sup> insertions that I have not repeated since, because I cannot imagine its application on a garment (figs. 4.13-4.15). However, it was a very successful experiment in terms of repetition and form, and gave me confidence that this practical work had potential. It is also worth noting that the photographs do not do

the experiment justice as they highlight the imperfections of symmetry that are very hard to control. However, it should be emphasised that when several of the same structures are put together in real life, these imperfections are less noticeable.

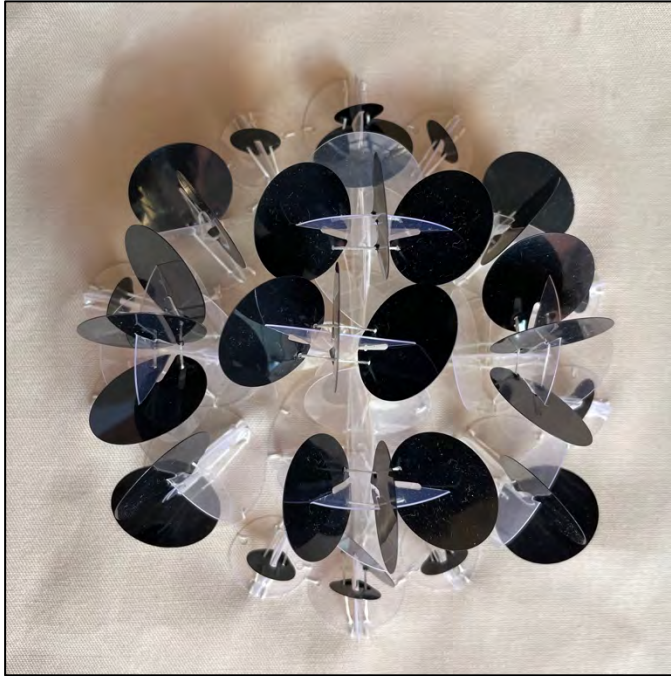
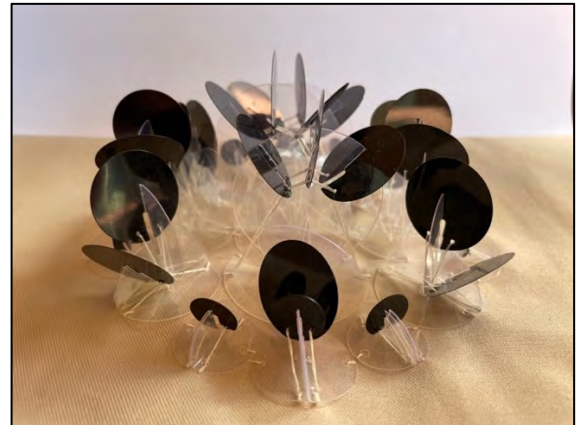


Fig. 4.13 *Experiment 5* (December 2015), aerial view. 20mm, 30mm and 40mm clear plastic sequins, 10mm and 25mm black plastic sequins, white thread, cotton fabric. Approx. 140mm diameter. Photograph © Richard Sorger.



Figs. 4.14-4.15 *Experiment 5* (December 2015), side views. 20mm, 30mm and 40mm clear plastic sequins, 10mm and 25mm black plastic sequins, white thread, cotton fabric. Photographs © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 5</i>
1		✓	The intentions and actions for <i>Experiment 5</i> are the same as the previous experiments 1-4 and it is successful in terms of the use of technique (1 & 2), stability (3), application to fabric (5) and the three-dimensional structure (7). However, action 6 was deemed not possible, because it has a self-contained dome-like structure, pleasing in itself, but I could not envisage repeating the form successfully on the body or garment; due to the structure's width, it would be difficult to repeat on fitted garment.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✗	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

Experiments 6 to 8 were less successful. They concerned my attempts to introduce 30mm bugle beads into the structures, but they lacked structural integrity; getting the tension of the thread connecting the bugles to the structure proved to be difficult and so this line of investigation was abandoned. I have not photographed them and they have not 'survived', i.e. I did not keep them intact.

Experiments documented in the RDJ from 05.01.16 (*Experiment 10*) to 22.03.16 (*Experiment 12b*) are not sequential as I revisit *Experiment 9* and *Experiment 4* on 16.02.16 (*Rework of Experiment 9b* and *Experiment 4 Expanded*). And these are the last experiments before I move my practice onto the mannequin (as a representation of the body) which will be discussed in the next chapter.

Intention	Action		Reflection on <i>Experiment 4 Expanded</i> , experiments 6-10, and <i>Experiment 12b</i>
1		✓	These are early experiments and as such most of the intentions and actions are being examined (1 & 2). However, experiments 6-8 were not structurally stable (3) and the introduction of bugle beads was not successful at this stage (5 & 7). As a result, they were disassembled and not recorded with photography. This was the first totally unsuccessful experiment, slightly disheartening, but I felt there was still potential to explore the use of beads in this practice, discussed later in this chapter and in Chapter 6.
2		✓	
3		✗	
4		N/A	
	5	✗	
	6	N/A	
	7	✗	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## The materials of my practice

In the above section I discuss the development of the tensegrity technique. In this section I discuss the materials and components used in the production of tensegrity structures. In each sub-section (*Sequin, Thread, Bead*) I first discuss the use of these components in my previous practice, before moving on to their use in the practice for this study.

## Sequins

Between 1999-2002 I collaborated on a brand called Sorger Kirchhoff with Benjamin Kirchhoff, later of the design duo Meadham Kirchhoff. The initial focus of the brand was short-run and bespoke pieces that I embellished by hand with beads. When I started to sample embellishment ideas prior to 2006 (exact date unrecorded, possibly 2004-5) with a small workshop in India sourced through the designer Ashish Gupta that would lead to the launch of my brand Richard Sorger, I again focused on the use of beads. For example, c.2004-5, I produced an apron dress with artwork based on a marabou stork on a black geometric background. Apart from the stork's head, throat, and wings, which are sequins, the rest of the artwork is made with bugle beads, making the silk chiffon dress very heavy (figs. 4.16-4.17). However, after producing a few very ambitious pieces in terms of their scale, it became obvious that beads *en masse* were too heavy for the silk chiffon and organza base fabrics I was using and so I then made (lighter) sequins 'the star of the show'.



Figs. 4.16-4.17 Richard Sorger silk chiffon apron dress and detail produced c.2004-5. The artwork is based on a marabou stork on a black geometric background. Apart from the stork's head, throat, and wings, which are sequins, the rest of the artwork is made with bugle beads making the silk chiffon dress very heavy. Photographs © Richard Sorger.

Plastic sequins are lightweight and are available in various shapes, sizes, colours, and finishes, and ultimately this made them much more interesting to me as a designer than the use of bugle beads. I primarily worked with a ‘sequin bible’<sup>17</sup> (see figs.4.18-4.20) where I could choose from a variety of finishes; metallic, transparent, matt, shiny, holographic, and even patterned, which meant they were much more versatile than bugle beads for the figurative embellishments I was designing at the time (see figs. 4.21-4.22).



Figs. 4.18 – 4.20 Example of pages from my ‘sequin bible’, used throughout 2006-2011 when designing for my eponymous brand. Used primarily for colour and finish, sequins could then be ordered in a variety of sizes. Photographs © Richard Sorger.

<sup>17</sup> ‘Sequin bible’ is my term. This ring binder of 18 pages of sequin types was my go-to starting point when deciding on colours and finishes for embellishment samples. It is actually the sequin sample book for Yusufi Stores in Mumbai (yusufistore.tradeindia.com), but the sequins were generic types available through multiple stores and dealers in India.



Figs. 4.21-4.22 Two silk georgette t-shirts based on the artwork of Roy Lichtenstein for Richard Sorger spring/summer 2008, using a combination of matt and shiny, holographic, and iridescent sequins. Black bugle beads were used to outline ('draw') most of the artwork which was then infilled with sequins. Photographs © Richard Sorger.

For the purposes of this doctoral study, based on my previous experience and outcomes as a fashion designer, I have focused on the use of plastic sequins (though not exclusively), because they are lightweight and durable, and allow me to build tensegrity embellishments out to the proxemic space of fabric and then the body, whilst retaining form and structure. The practice I discuss in this chapter and the next, uses pre-existing circular sequins of various sizes; my initial practice (04.15.12 to 16.02.16) within the scope of this project used pre-made commercially bought sequins, 2cm to 8cm, because they are readily and quickly available, though the 8cm sequins are best applied as base sequins because they tend to bend slightly. I have also conducted some limited experiments with cutting and constructing my own sequins shapes, but these were mostly not aesthetically successful (see Chapter 6, figs. 6.63-6.66). I will discuss these experiments, the failures and the successes, in Chapter 6.

On 23.02.16 I purchased a range of new components including larger 8cm sequins which enabled larger/taller structures to be realised without the need for the insertion of more sequins, which destabilises and over-complicates the structure. Previously, I had tested 10cm sequins, but they proved to be too unstable when inserted into structures. Six

centimetre sequins are the maximum size that work as insertions on their own, but depending on the type of plastic used to produce them they can bend when applied. I have circumnavigated this on *The Arnhem Toile* (see Chapter 5, figs. 5.48-5.52), by gluing two sequins together to reinforce them.

Since March 2021, I have been using sequins from Clowes' Sustainable Sequin Company which I am able to specify in terms of size. The plastic is thinner than the shop-bought sequins and it is harder to use a pattern notcher tool as the plastic doesn't cut as easily or cleanly. However, having this direct contact with the manufacturer of the sequins meant that I could request the waste plastic film produced when stamping out the sequins, and I have been able to incorporate this successfully into my later practice, creating a 'zero waste' approach to sequins and embellishment which I discuss in Chapters 6, and this is the technique used on *The Eclipse Dress* (see Chapter 6 figs. 6.67-6.72, and 6.107-6.110).

## **Sequins and colour**

Colour further complicates my experiments; it adds another layer to my decision making that I do not want to address in this project. However, early experiments in January 2016 explored the use of basic colours such as metallic red and blue. On 05.01.16 of my RDJ, it was noted that I wanted to explore colour in my experiments, focusing on red and blue to begin with as they are some of the basic 'building blocks' (i.e., primary colours) of more sophisticated colour (figs. 4.23-4.24). It quickly became evident that the use of shiny primary red sequins had connotations of Christmas decorations and so I stopped using them until testing ideas for *Arnhem Toile* (see Chapter 5, figs. 5.39-5.40), but this was more through wanting to use up surplus sequins rather than explore colour for this garment. The use of blue sequins can be seen in figs. 4.24 and 4.27, but again, I quickly stopped using them because I preferred the monochromatic use of black and clear sequins (if these clear sequins *can* be monochromatic). After these experiments I realised that I was not interested in exploring colour in my practice and since *Experiment 12b* (22.03.16) I have restricted my palette to clear, black, and silver sequins; this is a purely aesthetic choice not driven by any symbolic significance.



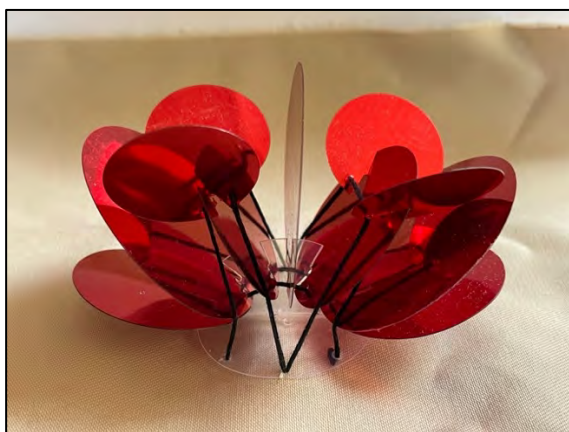


Fig. 4.23 *Experiment 10f* (05.01.16). 50mm clear plastic sequins, 30mm, 40mm, 50mm red metallic sequins, white thread and black embroidery thread, cotton fabric. Photograph © Richard Sorger.

Fig. 4.24 *Experiment 12* (22.03.16). 30mm and 50mm clear plastic sequins, 40mm and 50mm silver sequins, 30mm blue metallic sequins, white thread and black embroidery thread, cotton fabric. Photograph © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 10f</i> and <i>Experiment 12</i>
1		✓	<i>Experiment 10f</i> and <i>Experiment 12</i> are successful iterations of the tensegrity technique in terms of form and structure. Criteria 4 and 6 are not applicable here because the practice does not yet explore the application to the body. However, as discussed in the section above, the use of strong colour was not deemed successful and it was not pursued in the subsequent practice.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## Sequins and lack of colour

As mentioned above, since March 2016, I have focused on the use of black, clear, and silver sequins in my practice. The clear sequins are almost transparent and by using them, for example, at the base of the structure, it can give the illusion of the thread existing in space by itself (see fig. 4.25). My early experiments only use clear and black sequins.

*Experiment 1* (04.12.15) only uses clear sequins (fig. 4.6-4.9). Clear sequins, because of their transparency, allowed me to blur the lines between fabric and space through the intersection of sequins. When clear sequins (as 1<sup>st</sup> insertions) are used in conjunction with opaque sequins as 2<sup>nd</sup> insertions, it makes the opaque sequin appear to float above the surface of the fabric (see fig. 4.26). *Experiment 4* (04.12.15) is the first example where I use black sequins (fig. 4.12). Similarities can be made here with the embellishment used on the dress from *six dresses* spring/summer 2010 (see Chapter 1, fig. 1.1) where the beads also give the illusion of existing in space untethered to the dress.

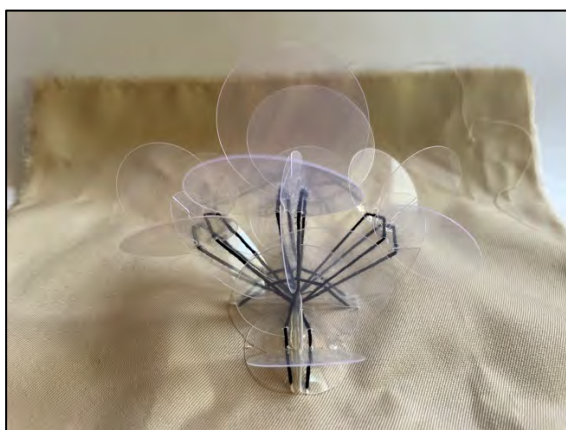


Fig. 4.25 *Experiment 11* (11.03.16), where the thread is more visible than the clear sequins. 30mm and 40mm clear plastic sequin, white thread and black embroidery thread, cotton fabric. Photograph © Richard Sorger.

Fig. 4.26 A version of *Experiment 11*, made 13.05.16, using black and silver sequins. The use of clear sequins lower in the structure makes the black sequins appear to 'float' above the fabric, anchored only by thread. At the time of photographing this sample (13.07.22) the clear plastic sequins have begun to discolour. 30mm and 40mm clear plastic sequins, 30mm, 40mm and 50mm black plastic sequins, black embroidery thread, cotton fabric. Photograph © Richard Sorger.

At the same time as using the red and blue sequins, I introduced silver reflective sequins. Silver sequins act as mirrors and reflect their surroundings, which in the case of my practice is thread and other sequins, creating a 'hall of mirrors' effect (RDJ 22.03.16), reflecting the structure (and the viewer) back on itself. The silver sequins have the potential to add further 'illusion' to the structures; confusing perception of the structure through refraction. The use of silver sequins has the potential to optically multiply spaces.

For *Experiment 12b* (22.03.16) I used 5cm silver sequins with the intention of testing these reflections. In my RDJ for this experiment (see fig. 4.27), I have written that the already complex construction is further complicated by the reflections. Although I have not commented as such in the RDJ entry for this experiment, I used simpler structures for future experiments on the body and mannequin (see Chapter 5) so that the reflection was also less complex, and therefore more effective. This illusion of multiplicity has the potential to further imply volume and the stereometric method<sup>18</sup>.

For the *Arnhem Toile* (see Chapter 5), I introduced silver holographic sequins as a further variant to plain silver sequins; the holographic sequins have a subtle rainbow-like quality

<sup>18</sup> The use of reflection to imply stereometric volumes has (as yet) untapped potential and is a possible avenue for further investigation.

(like a hologram) which adds subtler colours to the finished piece (see Chapter 5, figs. 5.48-5.52).

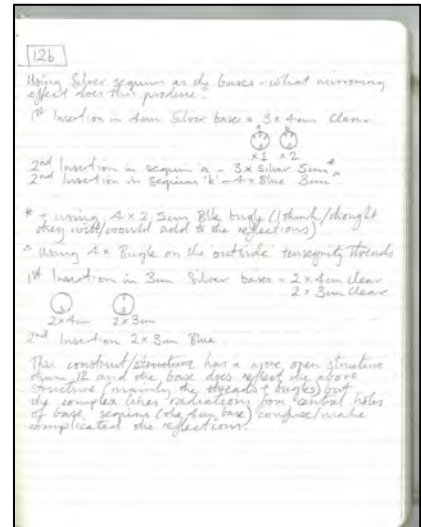
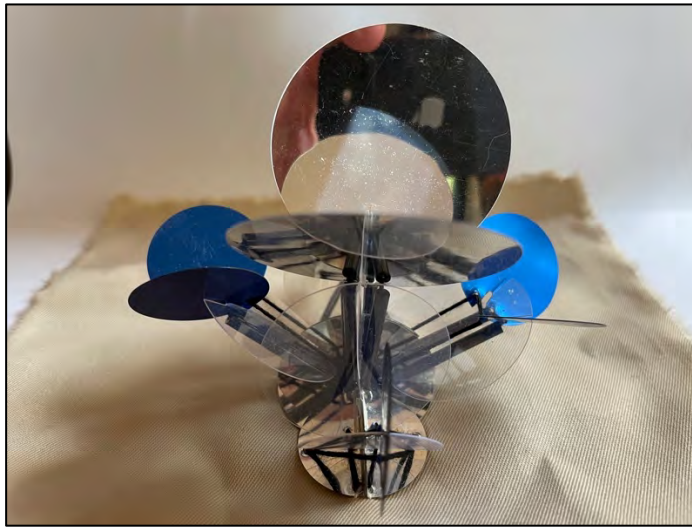


Fig. 4.27 *Experiment 12b* (22.03.16). The 5cm silver sequins in the centre of the structure have reflected, not only what is below, but also my iPhone and fingers taking the picture. 30mm and 40mm clear plastic sequins, 30mm, 40mm, and 50mm silver sequins, 30mm blue metallic sequins, 35mm black bugle beads, black embroidery thread, cotton fabric. Photograph © Richard Sorger.

Fig. 4.28 A page from the RDJ (22.03.16), documenting *Experiment 12b*. Photograph © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 11</i>
1		✓	The two version of <i>Experiment 11</i> are successful iterations of the tensegrity technique in terms of form and structure. Criteria 4 and 6 are not applicable here because the practice does not yet explore the application to the body.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Intention	Action		Reflection on <i>Experiment 12b</i>
1		✓	<i>Experiment 12b</i> is a successful iteration of the tensegrity technique in terms of form and structure. Criteria 4 and 6 are not applicable here because the practice does not yet explore the application to the body. Beads have been reintroduced into the structure more successfully than experiments 6 to 8, discussed earlier in this chapter; they have more stability tethered between the base sequin and the 2 <sup>nd</sup> insertion.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## Thread

In my practice prior to this project, the use of sequins and beads was paramount and essential, and the choice of thread was determined by the colour of the components it was being used to graft to the fabric. Thread was an afterthought and, because of the traditional tambour hook method used to apply the sequins to the surface of the fabric, very little thread was expected to be seen. However, I still chose thread carefully using a thread book (see fig. 4.29), because it would be seen on the reverse of the fabric and garment.



Fig. 4.29 A page from the thread colour reference book, used throughout 2006-2011 when designing for my eponymous brand. The colour numbers were also used as a reference when dyeing base fabric in India. Photograph © Richard Sorger.

It is only with the advent of this study that I have questioned the importance and value of thread within my practice. I now view thread as an essential component in my practice as thread makes the embellishment possible; thread helps to create the tension necessary for tensegrity structures. In the traditional sense of embellishment, it is the component that enable other components to be grafted to the surface of the material and it is essential to both embroidery and embellishment. In terms of my practice, thread, in conjunction with plastic sequins and tensegrity, allows me to extend from the surface of the fabric out to proxemic space, enabling spatial engagement. The thread is also now more exposed than previously in my practice.

In early experiments for this study (see figs. 4.6-4.10) I used mercerised cotton embroidery thread and polycotton thread that is commonly used for the machine sewing of garments, quickly deciding to use solely the polycotton version as the thread is stronger than pure cotton thread. I used double thread when constructing early structures, but visually the thread looked slightly insubstantial and due to the doubling up of the thread, it could twist and proved to be problematic when trying to achieve the correct tension in both threads. I identified the potential of the exposed thread, as both aesthetic and essential to tensegrity, between *Experiment 10c* and *Experiment 10d*, both made on 05.01.16 (see 4.32-4.33) switching from white cotton sewing thread (for *Experiment 10c*) to black cotton embroidery thread (for *Experiment 10d*). I realised the thread needed to have more 'substance'; this was provided by the use of embroidery thread as it is thicker, made from multiple stands of cotton thread twisted together, and is therefore more visible (see figs. 4.32-4.33 for a comparison). It became much more visually integral to the structure and form. It is noticeable that I also switched from white (cotton/polycotton) thread, to black (embroidery) thread and as can be seen in *Rework of Experiment 9b* (16.02.16) (figs. 4.34-4.36), the thread became a much more visible component of the embellishment and it has remained my thread colour of choice for the majority of the subsequent practice. Thread (and the tension it embodies) enables tensegrity and allows me to embellish out to space, creating what can be termed 'spatial embroidery'<sup>19</sup> or, more pertinently, 'spatial embellishment'.

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<sup>19</sup> 'Spatial embroidery' is a more appropriate term when using clear sequins and the thread is most visible. However, this term then contradicts the definition of embellishment because sequins are used.

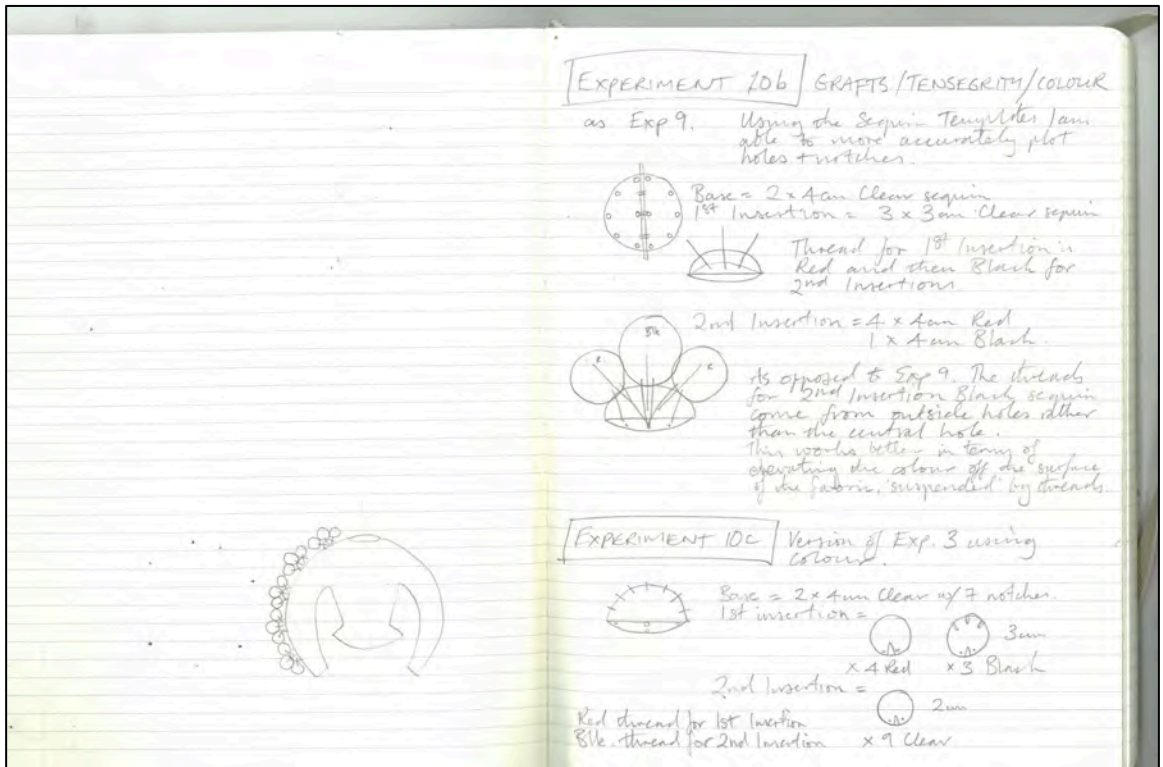
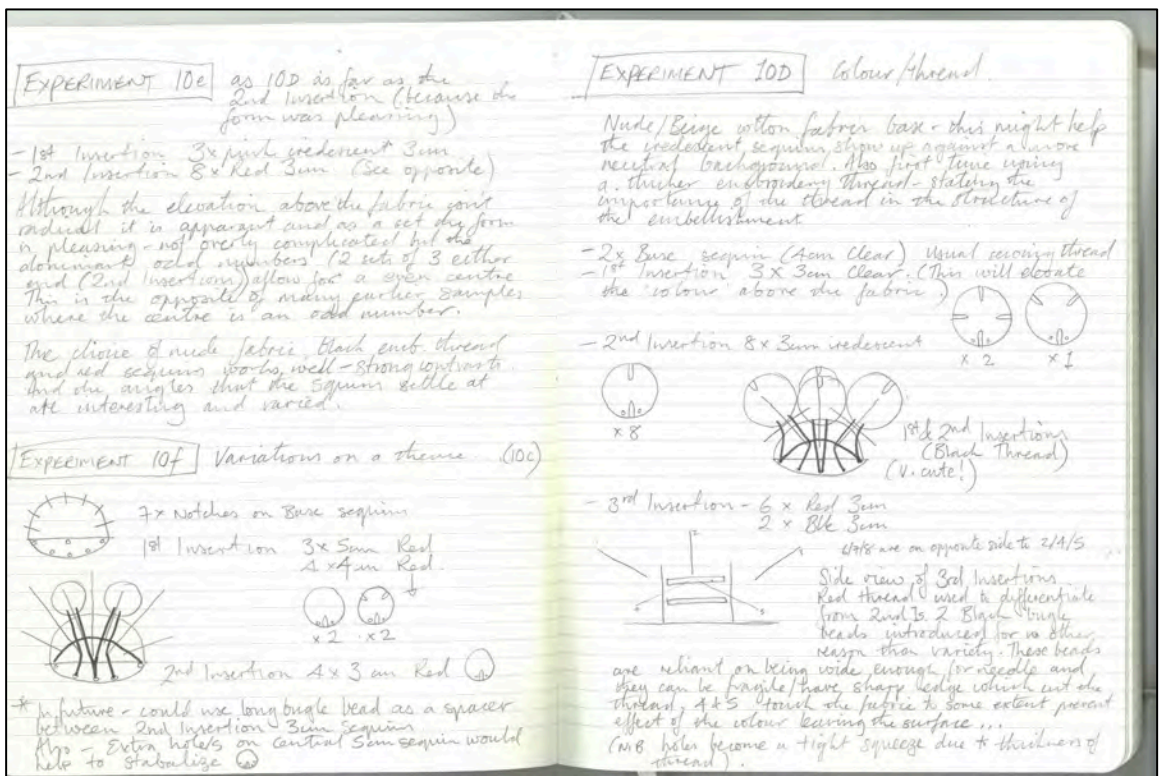
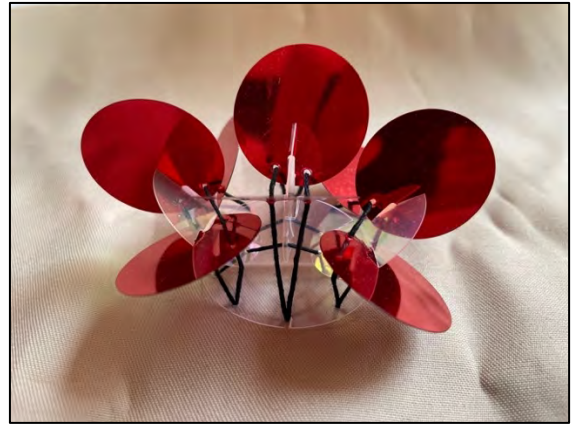
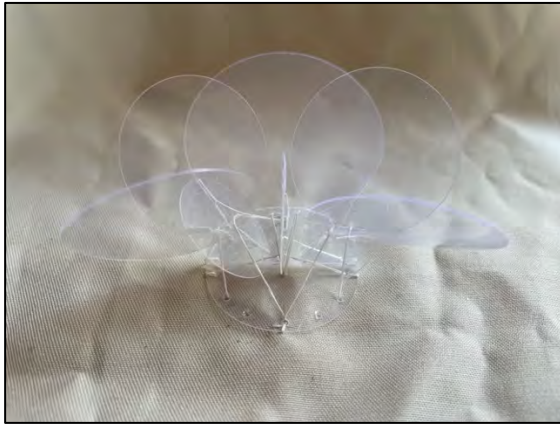


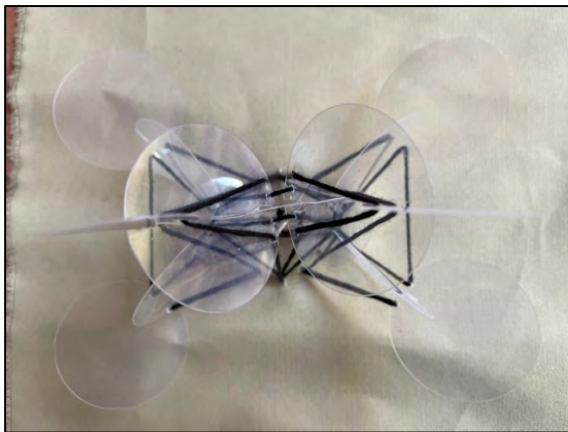
Fig. 4.30



Figs. 4.30 – 4.31 Pages from the RDJ for Experiment 10c and Experiment 10d both performed on 05.01.16. Experiment 10c uses cotton sewing thread and Experiment 10d uses cotton embroidery thread (see figs. 4.32-4.33). Photographs © Richard Sorger.



Figs. 4.32-4.33 *Experiment 10b* and *Experiment 10e*, both made on 05.01.16. The transition made from sewing thread to embroidery thread between *Experiment 10c* and *Experiment 10d*, but neither structure was kept. However, *Experiment 10e* is a version of *Experiment 10d*. 30mm and 40mm clear plastic sequins, white thread, cotton fabric: 40mm clear plastic sequins, 30mm red metallic sequins, black embroidery thread, cotton fabric. Photographs © Richard Sorger.



Figs. 4.34-4.35 Aerial and front views of *Rework of Experiment 9b* (16.02.16), 25mm and 40mm clear sequins and black embroidery thread. 30mm and 40mm clear plastic sequins, black embroidery thread, cotton fabric. Photographs © Richard Sorger.

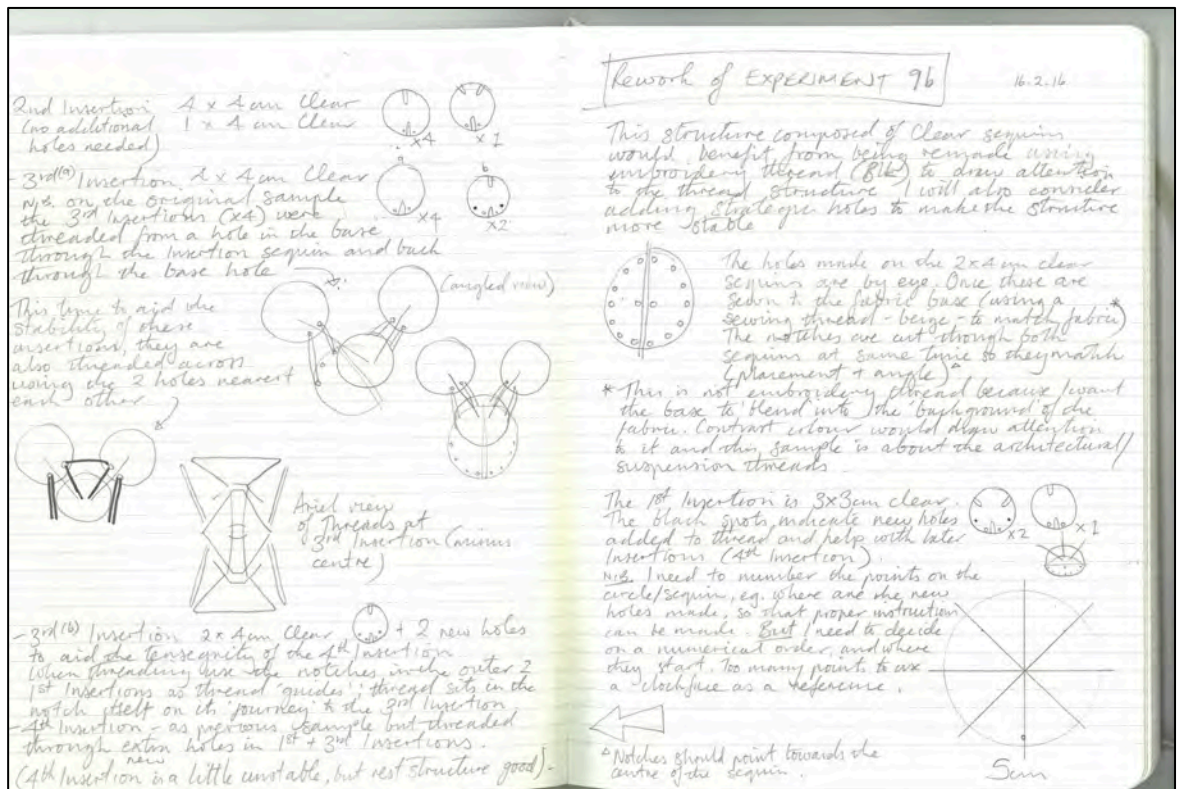


Fig. 4.36 Pages from the RDJ, documenting the development *Rework of Experiment 9b* (16.02.16). Photograph © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 10b</i> and <i>Experiment 10e</i> and <i>Rework of Experiment 9b</i>
1		✓	<p><i>Experiment 10b</i> and <i>Experiment 10e</i> and <i>Rework of Experiment 9b</i>; these experiments use the tensegrity technique and embodying the stereometric method (1,2). The structures are stable when applied to fabric (3) and their three-dimensional structures build out to the space above the fabric (5,7). At this stage in the practice for this study, I was exploring iterations of the tensegrity technique and continued to experiment with form, before applying the practice to the body/mannequin. Therefore, criteria 4, 6 and 8 are not applicable here. The change to embroidery thread made more apparent how important thread -and tension- were to the structural integrity of the form.</p>
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## Beads

Beads have featured heavily in my practice prior to this project to 'draw' a line on the fabric. The embellishments I produced were graphic, figurative, and narrative, and a bugle bead outline enabled a crisp edge to the sequin in-fill. *The Garden of Eden* dress, from my autumn/winter 2007 collection featured snakes and apples embellished with sequins and thread embroidery but needed the bugle beads to 'draw' the outline of the design (see figs. 4.37) so that it could be rendered to a high standard. The collection was loosely



based around the Creation myth from the Bible. Other dresses from the collection were beaded with skeletal motifs, suggesting the story of Eve's creation from Adam's rib. The V&A curator Gareth Williams included my work in the exhibition *Telling Tales* at the V&A in 2009 because of its narrative quality, hanging the dress in Tord Boontje's fig leaf covered wardrobe (fig. 4.38). Other examples of using bugle beads to 'draw' an outline in my early practice can be seen in figs. 4.16-4.17 and 4.21-4.22.

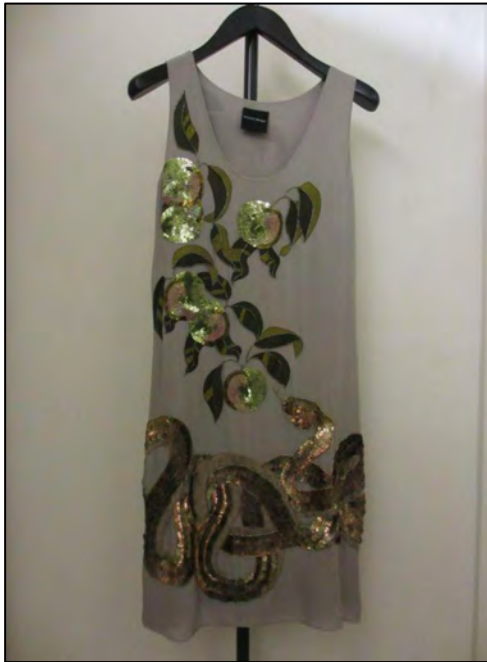


Fig. 4.37 *The Garden of Eden* dress, autumn/winter 2007. The dress is in the V&A's permanent fashion collection. Photograph © V&A Museum.

Fig. 4.38 *Telling Tales* exhibition V&A Museum 2009, featuring *The Garden of Eden* dress. Photograph © V&A Museum.

As discussed, I realised c.2004-5 that when designing embellishments for clothes, the use of beads *en masse* on a piece of fabric, rendered the fabric, and therefore the garment, heavy, which is an issue when used in conjunction with lightweight fabrics such as silk chiffon. When I used bugle beads on *The Proxemic Dress* (2014) in spaced-out groups of three in a crosshatch pattern on crin ribbon, I knew that this spacing would not render the crin ribbon too heavy to stand up and away from the surface of the dress. The placement of the crosshatch pattern was denser at the bottom edge of the crin ribbon which was sewn onto the base dress. This pattern became more spaced out and sparse towards the top edge of the ribbon projecting out to space (See Chapter 1, fig. 1.6).

Most of the practice for this study has not involved beads; as mentioned above the lightweight quality of plastic sequins is beneficial and necessary to building structures out to proxemic space. However, beads have had their uses when used structurally.

*Experiment 6* (December 2015) (fig. 4.39) is the first instance of using a bugle bead as a component in my experiments for this research. Again, in *Experiment 10d* (05.01.16) I used bugles for structural 'variety', noting in my RDJ (fig. 4.31) that in order to use bugles for this practice the hole of the tube needs to be wide enough for the large needle and embroidery thread to pass through. *Experiment 4c Expanded* (23.02.16), a reworking of an earlier experiment from December 2015, also used some newly purchased bugle beads, with wider holes, but this time they were used structurally to support the tension threads radiating from centre of the structure (figs. 4.42-4.43). I stopped using the bugle beads after 23.02.16 (but returning to them in October 2020, see Chapter 6), because I was more interested in testing the use of tension in the thread to support the structures and the use of bugle beads at this stage created the support, rather than the tension of the thread.

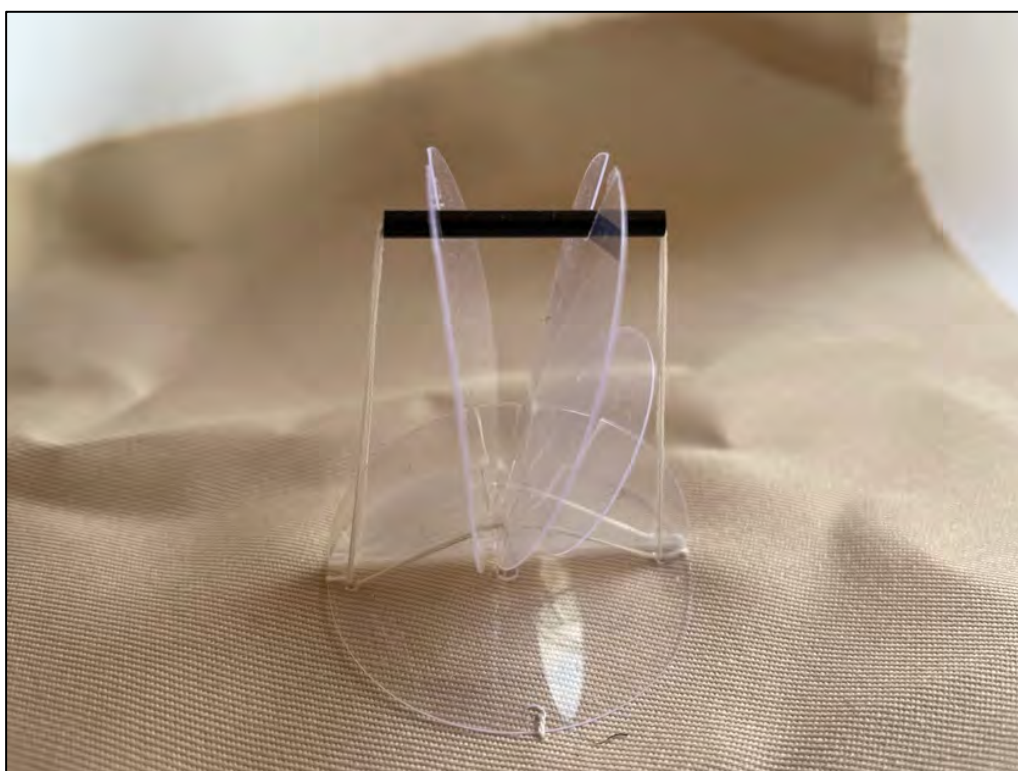


Fig. 4.39 *Experiment 6* (December 2015). 30mm and 40mm clear plastic sequins, 25mm black bugle bead, white thread, cotton fabric. Photograph © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 6</i>
1		✓	<i>Experiment 6</i> uses a bugle bead for the first time in the practice for this study. The structure is only partially stable and if the bead is dislodged from the notches in the sequins, then the structure falls apart. It is not easily possible to build incrementally beyond this structure, because of this lack in stability.
2		✓	
3		✗	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

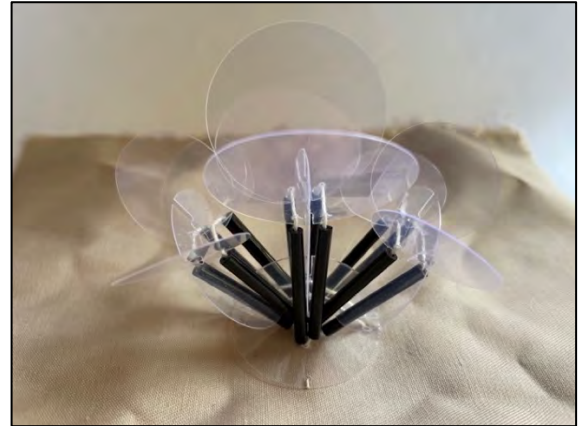


Fig. 4.42 *Experiment 4c Expanded* (23.02.16), so called because it is an iteration of an earlier experiment December 2015, with an 50mm black sequin at its pinnacle. 30mm clear bugle beads used in conjunction with clear and black sequins of various sizes and black cotton embroidery thread. 30mm and 40mm clear plastic sequins, 40mm and 50mm black plastic sequins, 30mm clear plastic bugle beads, white thread and black embroidery thread, cotton fabric. Photograph © Richard Sorger.

Fig. 4.43 *Experiment 4c* (23.02.16), an iteration of *Experiment 4c Expanded* (23.02.16), using 30mm black bugle beads. 30mm and 40mm clear plastic sequins, 30mm black bugle beads, white thread and white embroidery thread, cotton fabric. Photograph © Richard Sorger.

23.2.16.

I've bought a load of new components - 8cm sequins, wide/long bangles - & experiment with, but I just haven't got around to using these yet... Instead thinking about making multiples of existing samples and applying them to the main sequin. Starting to think about their relationship to a number from this will, at some point, culminate in a garment.

I edited the samples down to 3, 4, 9, 7, 10, 2, 1. Of which I think these must be my favourites. I edited out those on a red base as they didn't work as well as those on nude. I photographed each of these on the shoulder of the main sequin from various angles, observing over their isotropy. To watch well with the angular spin of black embroidery thread and almost invisible sequins. But 4 is the one I will develop initially. The black sequin (2cm) float above the fabric base and look as though they are not connected/grounded. There is also something vaguely sequin-like about the arrangement - possibly the 2x groups of 3x black sequin with a large (4cm) clear sequin in the centre. When I initially made this I thought of a baby sculpture, but looking at baby things wasn't really a direct reference after all. So to make multiple of 4. First I want to try with white and black embroidery. I intend to see how this affects the composition.

\* Also threads radiate from the central holes, as opposed to across the base.

**EXPERIMENT 4 EXPANDED**

A change in scale, just because the base remains 2x 8cm clear with the same arrangement of holes.

1st insertion in 3x 8cm clear  
2nd insertion - centre = 2x 4cm Black  
1x 8cm Black  
1x 8cm Black

The bangles have to come from holes on the outer edge of base (rather than the centre) and I have threaded these lines through long clear bangles. (approx 3.5cm long)

- 2x outer 2nd insertions = 6x 3cm Clear

Again, threading through the clear bangles - Why? Because I have them!


The end result is pleasing. The bangles do not add to the complexity, but they define the hard black line of the throat, push you on the clear of the sequin and add another form to the composition. The large 8cm sequin wobbles a little, due to its size. This could be reduced by the addition of more holes which are threaded. Possibly threading through the bangles of the out (2nd) insertions. But the 8cm sequin curves/bends and therefore ruins the composition. Redoing it with 5cm Bk (11.3.16)

**EXPERIMENT 4°** To above Bk replaced w/ clear. Clear bangles replaced w/ Bk. White Emb. thread. This will emphasize the bangles and 'recede' other components.

\* New holes (see over)

\* If it work for different reasons - I will continue to construct both for now.

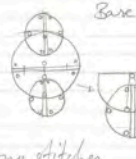
Exp 4° cont. I added new holes as there is not enough room for the bangles to radiate from the central holes, and I didn't want them to lean in from the outer holes (as in previous Exp 4.) - I want the bangles to be the stems.



**EXPERIMENT 11** 11.3.16. Multiple Base structures

Base = 2x 4cm Clear  
1x 3cm Clear

\* need for stem holes



Threads from the centre of the 2cm bases connect to the centre hole of the 4cm base. This is to hold down the inner edges of the 3cm base. This is in response to the holes, are made in all bases and could be modified.

\* long stitches  
4cm  
3cm

w/o Central hole has become rather congested. Make hole larger or use alternate holes.

**11b** Base - 2x 4cm Bk Lining  
4x 3cm Clear

1st Insertion - Clear  
2nd Insertion - Black - 6x 3cm  
2x 4cm } Centre  
1x 3cm }  
4x 3cm Clear

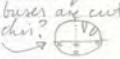
White Emb. Thread!

The black base acts as a focal anchor onto the fabric. Then the clear insertion creates a visual gap between base + 2nd Insertions (Black). Again, I am trying to make the black sequins operate in the space above the fabric, as if hovering/floating.

\* N.B. If repeating 11 there is an issue with how the 1st Insertion sequins sit against each other (Inserted into the different bases).

13.03.16. I disassembled the sample and reconstructed it using black emb. thread. The 2nd insertion sequins now appear to be on thread (Bk) stems. The punch-in mentioned below is also now resolved. (Could be by doing all 1st Insertions then 2nd Insertions as opposed to completing all work on black base/1st/2nd Insertion then doing the side bases/1st Insertions?)

\* The sequins of 11 sit fine, but the sequins of 11b fight against each other and don't quite fit back this should alleviate this?



Figs. 4.40-4.41 Pages from the RDJ, documenting Experiment 4c Expanded (23.02.16) on the right-hand page of fig. 4.40 and the left-hand page of fig. 4.41. Photographs © Richard Sorger.

Between October 2020 and February 2021, I used long, improvised bugle beads (in fact drinking straws and craft straws because bugle beads in the lengths that I required are not available) in the construction of tall tensegrity structures, enabling structures of 30.5cm height (see Chapter 6, figs. 6.9-6.31 and 6.38-6.57). These structures proved problematic for the use on garments (and therefore bodies) from a practical and aesthetic point of view and this will be discussed further in Chapter 6.

Intention	Action		Reflection on <i>Experiment 4c</i> and <i>Experiment 4c Expanded</i>
1		✓	<i>Experiment 4c</i> and <i>Experiment 4c Expanded</i> use the tensegrity technique and embodying the stereometric method. The structures are stable when applied to fabric (3) and their three-dimensional structures build out to the space above the fabric (7). The use of bugle beads is successfully integrated into the structure and add stability in these experiments. However, at this stage, I was more interested in the potential use of thread and tension rather than the possible structural support offered by beads. As a result, the use of beads is not explored further until much later in this study and discussed in Chapter 6.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## **‘Growing’ embellishments; fungi and crystals**

The practice described below spans both ‘material’ and ‘practice’ and I have included it here as the materials and techniques used are not new, however their use for embellishment is.

As part of my initial plan for my PhD project, I wanted to explore the possibility of ‘growing’ embellishments; I did this first by experimenting with growing fungus and later by growing salt and copper sulphate crystals. The fungus experiments took too long to ‘ferment’ and I realised that in order to further this aspect of my practice I would need to collaborate with experts in the field. A time-lapse video of the experiment with growing fungus can be viewed at YouTube Video 1: *Fermenting fungi* <https://youtu.be/ni-UjA037Mc>.

In terms of the crystal experiments, the salt crystals were able to ‘grow’ up my tensegrity structures (but were fragile), but I was not able to grow copper sulphate in the same manner. I decided that in both cases the subject specific knowledge was required, and this goes beyond the scope of this PhD project, which does not rely on collaboration with experts from other disciplines. There are also other practitioners such as Alice Potts and

Lukas Wegworth (see below) already producing sophisticated work in the field. The tensegrity technique tests the tension of the thread and explores the relationship between the fabric, thread, and components such as sequins, and using organically grown material does not allow for this testing of the tension. However, this demonstrates potential lines for further enquiry beyond this project.

### ***Salt crystal embellishment***

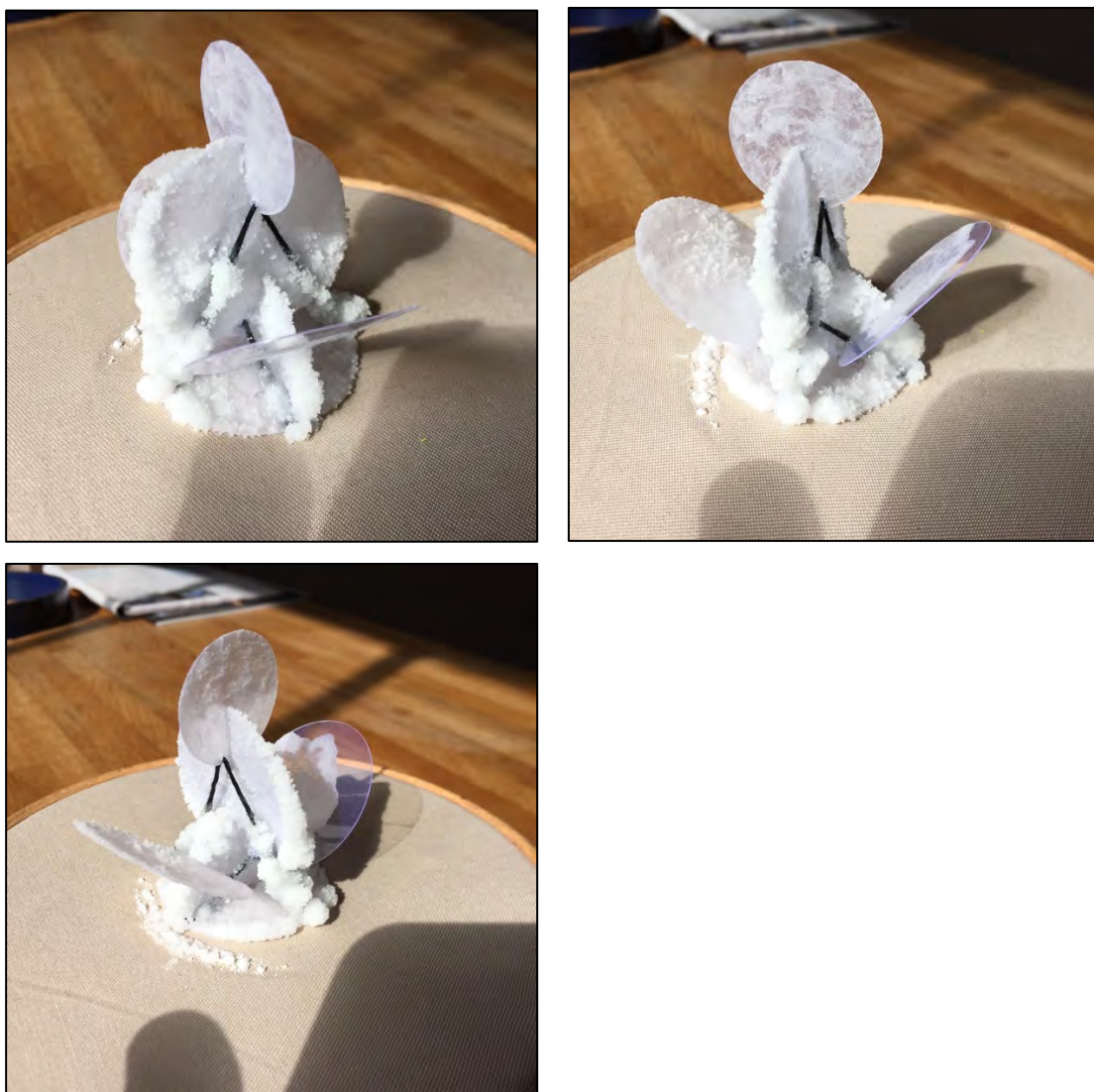
Between February and September 2018, I experimented with the notion of ‘growing’ an embellishment using salt and copper sulphate crystals onto an existing tensegrity structure. A solution of domestic-use coarse sea salt was prepared in a glass jar; the solution was made by dissolving the salt into boiled water from a kettle, until saturation was achieved (i.e., no more salt will dissolve in the water).

Fabric was stretched onto a 16cm wooden embroidery ring, and a simple tensegrity structure was grafted (fig. 4.47) onto a cotton base fabric. Two clear 4cm folded sequins were applied to the fabric and three further 4cm 1<sup>st</sup> insertion sequins were inserted in to notches in the base sequins. These were tethered into place with black cotton thread. One 2cm 2<sup>nd</sup> insertion clear sequin was then inserted into a notch in the middle 1<sup>st</sup> insertion sequin, and again, connected to the fabric via black cotton thread. This basic structure described here was then altered to enable the growth of salt crystals; on the underside of the fabric, threads were ‘tied off’<sup>20</sup> as usual, but long threads were left hanging instead of being cut off to make the underside neater. The structure was left on the embroidery ring, and this was then placed over a glass jar containing a solution of domestic-use coarse sea salt.

Salt crystals formed on the hanging threads in the salt solution, and these continued to ‘grow’ up the threads, through the base fabric onto the tensegrity structure, covering the forms with clumps of small white salt crystals (figs. 4.44-4.46). Time-lapse videos of this process can be viewed at YouTube Video 3: *Tensegrity technique experiments with salt crystals* <https://youtu.be/fyX-Zy7M7iY>.

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<sup>20</sup> Knotted.



Figs. 4.44-4.46 *Salt Crystal Experiment 1* (start date 24.02.18, end date unknown). 20mm and 40mm clear plastic sequins, black embroidery thread, cotton fabric, salt crystals. Photographs © Richard Sorger.

The experiment was repeated with copper sulphate crystals on similar tensegrity structures - each with some slight variances and they are referred to here as *Jar 1*, *Jar 2*, and *Jar 3*; The structure (still on an embroidery ring) was placed on *Jar 1* upside down so that the structure was immersed in the solution. *Jar 2* as per the salt solution experiment above (the structure on the embroidery ring sat on top of the jar). *Jar 3*, as *Jar 2*, but a copper sulphate crystal was 'seeded' to one of the trailing threads in the solution ('seeding' is where a pre-existing crystal is used to 'encourage' the growth of further larger crystals in a solution). Crystals formed in the solution in the jar but failed to 'grow' up the threads and onto the structure as in the experiments using salt crystals.

The use of salt to form crystals, as mentioned above, was far more successful than the use of copper sulphate. However, because the crystals were so small, they did not add to the structure of the form in the manner I had hoped for- more obvious crystalline forms. I am also aware of other designers, such as Alice Potts (a 2018 MA Fashion graduate from the Royal College of Art) who grows crystals from human sweat, and Lukas Wegwerth, a German product designer who combines grown crystals with ceramic vessels, making my exploration into this field less urgent.

During the process of these experiments (see RDJ, figs. 4.47-4.49), I began to lose interest in the results and any further developments using these techniques as the results did not meet the objectives of this PhD. It became apparent that I could not control the ‘growth’ of fungi or the formation of crystals to augment or enhance an embellishment, and this lack of control put this ‘growth’ at odds with my natural desire to control my work and the aims of this doctoral work. The growth of crystals onto a tensegrity structure did not add the aesthetic value of the existing structure, nor did it respond to several points in my practice evaluation criteria in *Chapter 1: Methodology* (see the table below). The salt crystals were very fragile and would not survive much treatment, especially not the application to the body and therefore did not answer the two of the evaluation criteria.

The addition of the salt crystals to the existing tensegrity structure does not add (or supplement) to the properties that the tensegrity structure already has, and therefore success as measured against the evaluation criteria is not possible or enhanced by using this method of growth.

Intention	Action		Reflection on <i>Salt Crystal Experiment 1</i>
1		✓	<i>Salt Crystal Experiment 1</i> ; this practice uses the tensegrity technique and challenges traditional embellishment techniques (1). However, it does not add successfully to the existing structure (2, 4 & 7). The crystals are fragile and not stable (3). The embellishment can be applied to fabric on a technicality as it is already grafted to fabric before the crystals are grown (5). Because of the fragility of the structure/s it/they cannot be applied to the body (6). As points 2, 3, 4, and 6 are not successful, point 7 is also not achievable.
2		✗	
3		✗	
4		✗	
	5	✓	
	6	✗	
	7	✗	
	8	N/A	


Please see page 67 for the full practice evaluation criteria.




23.6.18

□ Potting water is poured into a receptacle copper sulphate (powder) is stirred in until the water is saturated. The water can absorb (?) quite a lot of copper sulphate. It is left to cool at room temp. Crystals begin to form, but the liquid solution is put through a sieve taking out all crystals.

3 x Structures to be used in conjunction with a copper sulphate solution

Base = 2 x 4cm Clear sequin with 3 insertion slots 

1st Insertion = 1 x 3 - 3cm Clear sequin with 2 - 4cm 

Black embroidery thread is used. The sequins are sandpapered first with fine sandpaper & add peroxide (potential purchase) for the crystals to grow on.

The form is basic and simplistic with only 2 insertion - finally I don't know if I show it will work so I don't want to spend a lot of time on the structure and eventually the same goes. I'm going to use for the solution are not huge so the structure needs to fit into the mouth of the jar (upside down).

Jar ① - The structure is immersed upside down in the solution.


Jar ② - the structure (the fabric still on frame for all 3 experiments) sits on top of the jar mouth. Threads from the structure trail in the solution.

Jar ③ - as jar ②, but a copper sulphate crystal is seeded to one of the trailing threads.

\* Solution is cooled & filtered.


P.T.O

27.2.18 Making a Temporary Structure for use in a salt crystal growth experiment.

 2 x 4cm Clear Base Sequin  
Black embroidery thread.

I'm sewing the base sequin on with emb. thread - I usually use an ordinary cotton thread for sewing & leaving a long thread below the knot on the underside of the fabric to dangle in the saline solution when I tie it off. I'm also leaving a long thread. My hope is that the salt will grow up the thread, and through the fabric.

1st Insertion - 3 x 4cm Clear sequin  
2nd Insertion - 1 x 3cm Clear sequin in Central 1st Insertion

 Embellishment is left on frame as sat on top of jar of saline solution.

Start 24.2.18 End?

① - Very small crystals form where embellishment is submerged, but no further growth. Crystals not interesting.

② - Nothing happened - no growth. Ohly slightly on the threads.

③ - As above. Crystals formed in the bottom of jars but not on structure.

17.9.18

- Two more attempts - This time using hot water and not filtered.

① as ① N.B. Solution might be used - used half a packet in 600ml.

② as ②

③ as ③

Figs. 4.47-4.49 Pages from the RDJ 23.02.18 to 17.09.18, documenting the experiments using salt crystal and copper sulphate. Photographs © Richard Sorger.

## Conceptualising embellishment practice

In the previous section I discuss technique and materiality in relation to this study and what preceded it. This establishes the practice for this project and the new tensegrity technique for fashion embellishment which is essential to the discussions which take place in the following chapters. The title for this chapter is *Materials into Practice* and I have discussed this in practical terms, but what are the conceptual implications for my practice when the materials of embellishment are applied through practice to fabric?

It is now necessary to consider embellishment from a conceptual perspective to establish what embellishment can mean. In this section, I engage with the French philosopher Jacques Derrida's theory of 'supplementarity' and how it can be used to negotiate the concept and understanding of embellishment for the first time.

The use of Derrida for design theory is not new and his notion of supplementarity has been used before to theorise fashion, for example in Geczy and Karaminas (2017) when discussing Rei Kawakubo and Comme des Garçons (Geczy, 2017: 29), and in Barnard (2014: 115). However, this is the first instance that supplementarity has been applied to conceptualise embellishment that I am aware of.

My introduction to supplementarity came in 2015 in a discussion with my supervisors about my practice prior to this PhD study. I explained that from my perspective when I designed, the garment was not complete until it was embellished. In fact, the design would start with the embellishment and the garment was added to it, and that conceptually, for me, there was no garment or design unless it had been embellished. This initiated a discussion about Derrida's notions of supplementarity which has proved essential to the first steps of conceptualising embellishment practices. As discussed below, Derrida's notions of supplementarity has parallels with the argument put forward by Koda & Martin (1995) and Wilcox (2007) in Chapter 2 when discussing the use of embellishment in the production of haute couture; embellishment is essential to certain haute couture garments without which there is no design; the haute couture dress *is* the embellishment and not just a 'luxé augmentation' (Koda & Martin, 1995: 73).

## The supplement and supplementarity

To embellish is to add to, or to supplement something that already exists. For the purposes of this study 'embellishment' refers to the addition of components to fabric (see *Introduction* for the full definition). But what if beyond being an addition, embellishment could be considered as intrinsic to the fabric's existence and is therefore its supplement?

Derrida first frames his theory of supplementarity as an addition before developing the argument that there is an essential lack that the addition fulfils (or supplements). I will first discuss the implications of the supplement as an addition in terms of my practice before addressing, in the section below, the notion of the 'lack' that the supplement of embellishment can fulfil.

In his book *Of Grammatology* (1967) Derrida writes about language and writing itself when he discusses the concept of the supplement. 'The supplement adds itself, it is a surplus, a plenitude enriching another plenitude, the fullest measure of presence' (1967: 144). In this passage, Derrida suggests that writing is the supplement to speech; when speech fails to fully articulate meaning, 'writing becomes necessary' (ibid., 144). Derrida argues that writing is not a complement to speech but is in fact 'super-added' (ibid., 145), a term he explains as something alien to what it is added to; 'Unlike the *complement* ... the supplement is an "*exterior* addition"' (ibid., 145). The notion of supplementarity can be applied to embellishment as it is also an 'exterior addition' (not fabric, and 'alien' to it) that improves and enriches the fabric in the eyes of a designer; the supplement 'adds only to replace' (ibid., 145), so I argue that fabric is supplemented by embellishment. Fabric is supplemented by embellishment as a literal physical material but also by the practice of fashion embellishment. Embellishment reveals an altered or a new state<sup>21</sup>, an 'embellished' state, and that they (fabric and embellishment) no longer exist as two separate things; they become one, fused together.

Derrida then suggests that there is an essential lack that the supplement fulfils (ibid., 145). In his discussion of writing and speech, this 'lack' is 'meaning', so writing is the

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<sup>21</sup> In the next Chapter I develop this argument and that embellishment, by extension, can also supplement the garment.

supplement to speech to fulfil understanding. The supplement suggests a 'need' that is not fulfilled by the original work (writing needs to be 'super-added' to speech to give meaning). The academic Niall Lucy (Lucy, 2004: 135), writing about Derrida, gives context to this notion;

'...the original purity of the work of art contains a *lack*. It is this lack (an original lack) that the supplement supplements. So the work of supplementarity turns out to be essential to the constitution of 'the work itself'... because it reveals that without the supplement there *is* no 'itself' of the work'. (Ibid., 135).

Such understanding of supplementarity is interesting when applied to the negotiation of the concept and practice of embellishment. It reveals the potential of fashion embellishment to be seen as more agentic, beyond being considered a mere decoration or an aesthetic addition. So, what is this Derridean lack that embellishment fulfils or supplements? Firstly, in terms of my practice, fabric that lacks embellishment lacks design and so embellishment fulfils design. As mentioned in the previous section, in terms of my practice prior to this study, there was no garment or design until the supplement of embellishment had been super-added; in terms of my practice, fabric that lacks embellishment lacks design and so embellishment fulfils design.

Secondly, my practice aims to explore proxemic space (the space surrounding the body, discussed in Chapter 1), but fabric alone is not enough and so embellishment is super-added to fabric to make this possible. In *The use of technique in my practice* at the beginning of this chapter, I outlined how I have supplemented the fabric through the addition of sequin and thread (and beads), and through this supplement stereometric volumes (implied sculptural volumes, first discussed in Chapter1) are also super-added to the fabric.

The surface of the un-embellished fabric lacks three-dimensional volume, and it does not project out to space. It cannot embody or explore proxemic space alone. Spatial embellishment created using the tensegrity technique acts as the supplement to address

this essential lack and in terms of this study, it is not possible to explore and embody proxemic space without the supplement of embellishment.

## Conclusion

In this chapter, I have discussed my practice, both prior to, during and for this study, through the lens of technique and materiality. I have discussed initial development and iterations of the tensegrity technique as well as the materials and components used for these embellishment experiments. Throughout I have discussed my decision making in terms of how successful these iterations were, and how I explored properties such as colour, the use of tension as a component and the preferential use of sequins over beads.

Also in this chapter, I have begun to discuss the meaning of embellishment through theoretical experimentation with the concept of complementarity in this research. This is the first time that embellishment has been conceptualised and practiced as framed by the quoted and expanded theories; embellishment is usually written about from a practical and aesthetic point of view. Complementarity enables the conceptualisation of embellishment by explaining how its meaning changes when it is applied to fabric. I argue that embellishment can be viewed and practiced as a supplement and in terms of my practice it completes fabric. Embellishment as supplement also allows my practice to begin to negotiate proxemic space. It can also be viewed that complementarity supplements the subject of embellishment; it gives meaning where there was none before.

Now that I have established the context for my practice, in the next chapter I discuss how the tensegrity technique is applied to the body, represented by a dress mannequin, to explore the importance of my practice in relation to the body. I also develop the use of Derrida's theories for embellishment by introducing his discussion of 'ergon' and 'parergon' (ergon refers to the work (as in an artwork, or a work of literature) and parergon is what lies beyond) and I further complicate these theories with Malcolm Barnard's theory of fashion as prosthesis to conceptualise embellishment further. But my practice goes beyond this understanding: it makes conceptual links between the parergon, parergonal space (a liminal space) and spatial theories (discussed in Chapter 6),

the stereometric method and proxemics. This discussion will develop and culminate in Chapter 6.

# Chapter 5: PRACTICE onto BODY

## Introduction

This chapter is concerned with the relationship between my practice and the human body within the context of this research. I discuss the application of the tensegrity technique onto the body (represented by the mannequin) for the first time as well as the development of the first finished outcome for this study; *The Arnhem Bodice*.

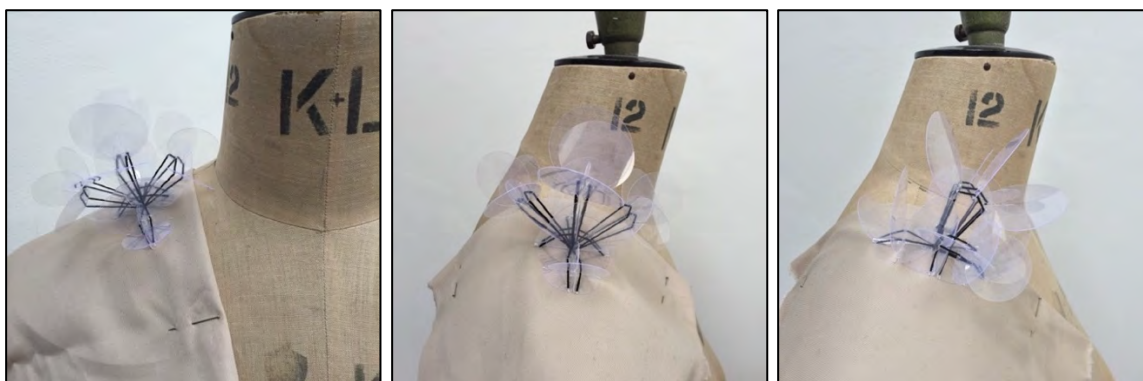
While embellishment is examined in the context of its history, as discussed in Chapter 2, current fashion theory rarely discusses the subject of embellishment directly. It is through practice-led investigation that I conceptualise embellishment; I practice embellishment to define it in the context of contemporary fashion practice. In Chapter 4 I use Derrida's theory of supplementarity to conceptualise embellishment in the context of fashion design. Here, I discuss selected theories about 'fashion' and 'dress', and then 'fashioned' and 'decorated' bodies in relation to culture, to give context to my practice. I discuss Barnard's theory of fashion and garment as a tool and prosthesis that makes the body - situated in culture and society- possible, complicating this further with the introduction of embellishment in order to conceptualise my practice.

I then draw on discussions about the essential relationship between body and garment to explain the role of embellishment for fashion practice. I discuss diverse theorisations of the relationship between the body and garment as conceptually inseparable, to then question how embellishment, as the supplement to fabric, can also be considered as intrinsic to the body and garment.

Finally, I discuss how the stereometric volumes of the tensegrity technique are navigated/negotiated when applied on to the body, first by using Derrida's discussion of ergon and parergon and then by discussing 'parergonal space'.

## Practice onto Body

Between March and May 2016, I started to apply the existing experiments made between 11.03.16 and 13.05.16 (see Chapter 4 figs. 4.9-4.12) first to a size 12 female mannequin (figs. 5.1-5.26), then to a quarter-scale mannequin (figs. 5.27-5.38). These were first applied to the size 12 mannequin as singular additions (figs. 5.1-5.9) and then in multiples (figs. 5.11-5.22). It was through this testing on the size 12 mannequin that I was able to visualise the potential of the tensegrity technique to affect the silhouette of the body as well as potentially create new silhouette forms. The most interesting iterations were where the structures are viewed in profile, making the 'proxemic silhouette' (see below) more visible (for example, figs. 5.23-5.25), and this informed where they, the tensegrity structures, were placed. My term 'proxemic silhouette' refers to how embellishment practice can make visible the (proxemic) personal space that surrounds the body. I argue that a proxemic silhouette needs to use the stereometric method to create volume; it cannot be solid, it needs to implied volume, otherwise it is just the 'silhouette'.



Figs. 5.1-5.3 *Experiment 11* applied to the right shoulder of a size 12 dress mannequin<sup>22</sup>.

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<sup>22</sup> The individual components used to create these tensegrity structures have not been listed as they were in the captions for Chapter 4. This is because they are not new structures and their components have been previously recorded. Moving forward, if a structure is new to the discussion, the individual components will be listed as they were in the previous chapter.





Figs. 5.4-5.5 *Experiment 4c*, applied to the right shoulder of a size 12 dress mannequin.  
 Fig. 5.6 *Experiment 11b*, applied to the right shoulder of a size 12 dress mannequin.



Figs. 5.7-5.9 *Experiment 12* applied to the right shoulder of a size 12 dress mannequin. All standwork executed March-May 2016, exact date not recorded. All Photographs © Richard Sorger.

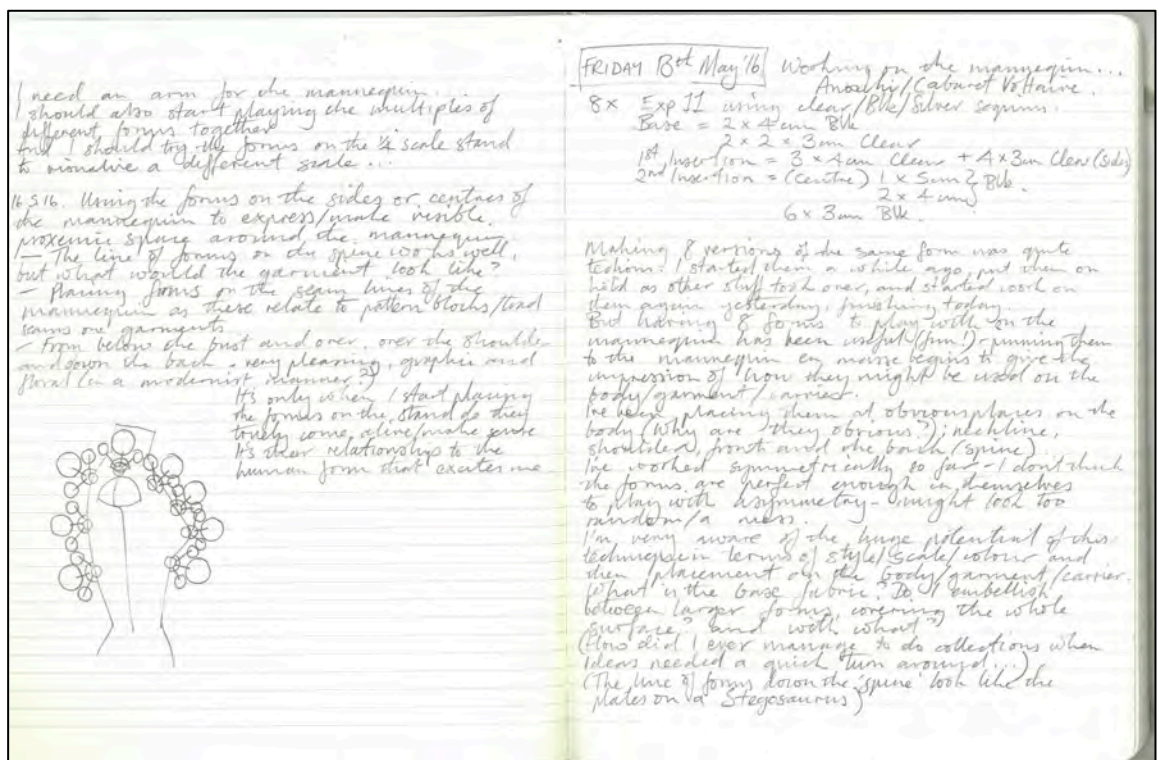


Fig. 5.10 RDJ (13.05.16 and 16.05.16) documenting the first forays into working on the mannequin.  
 Photograph © Richard Sorger.

Very quickly during this period of working on the mannequin, I decided that iterations of the same experiment might work better on the body than several diverse structures, and the individual structures should be simple; multiples of the same structure work better visually and form a more cohesive whole (see any Iris van Herpen examples, for example Chapter 3, figs. 3.32-3.38) and if multiple of structures are to be used then it makes sense not to over complicate the individual structures.

*Experiment 11* was chosen for this reason, and I made eight multiples of this structure to use on the mannequin (see figs. 5.11-5.22). The base sequins grafted to the fabric were 4cm black and 3cm clear sequins, the 1<sup>st</sup> insertion was three 4cm clear sequins in the 4cm black base sequins and four 3cm clear sequins in the 3cm clear base sequins either side of the black base sequins. The 2<sup>nd</sup> insertion was one 5cm and two 4cm black sequins in the central structure and six 3cm black sequins distributed either side into the clear sequins of the 1<sup>st</sup> insertions. The fabric the structure was grafted to was then trimmed back to a small square approximately 8cm x 8cm and it was the base fabric that enabled the easy application of the structures to the mannequin using pins.



Figs. 5.11-5.13



Figs. 5.14-5.5.16



Figs. 5.17-5.19



Figs. 5.11-5.22 Iterations using multiples of *Experiment 11* on the size 12 mannequin, March-May 2016, exact date not recorded. Photographs © Richard Sorger.



Figs. 5.23-5.25 Iterations using multiples of *Experiment 11* and *Experiment 12* on the size 12 mannequin, March-May 2016, exact date not recorded. Viewed in profile, the tensegrity structures on the mannequin create an interesting proxemic silhouette, making visible the (proximic) personal space around the body using the sculptural tools of tensegrity and the stereometric method. Photographs © Richard Sorger.



Fig. 5.26 Iteration using multiples of *Experiment 11* on a mannequin. Photograph © Ezzidin Alwan.

The placement of the structures on the mannequin was generally always symmetrical, noting in my RDJ for 13.05.16 (see fig. 5.10), that the individual structures are not of themselves perfectly symmetrical and that small asymmetries can occur due to the tension of the thread used in the technique, so asymmetry might make the finished garment forms look too random or messy.

In my RDJ entry for the next day, 16.05.16 (the left page of fig. 5.10), I noted my excitement at using the forms on the body and that they express, or make visible, the proxemic space surrounding the body, creating a proxemic silhouette. I also noted that the placement works best (so far) when placed on the traditional seam lines used in garment construction such as the shoulder seam, the princess line that runs from the shoulder and down through the bust, and of course the centre front and centre back.

Although the proportional scale of the sequins did not reach out to proxemic space as much as suggested when using the quarter-scale mannequin (see figs. 5.27-5.38), the repetition of form was aesthetically pleasing, and I was able to visualise for the first time what a garment with tensegrity structures might look like. It was when the structures were viewed in profile that they revealed their potential to affect the silhouette in a novel and interesting manner (see figs. 5.23-5.26). The new proxemic silhouette projected outwards into space but as stereometric tensegrity structures, they, sequins and threads, implied volume but also lacked traditional solidity. Referring back to this study's methodology (Chapter 1) and the evaluation of practice criteria, notions of body and space were embodied through the use of the stereometric method and tensegrity, but what I had not considered before was the ambiguity of whether the space between components was part of the body, or part of the space beyond the mannequin. This ambiguous space, either part of the garment or part of the surrounding space is called 'parergonal space'; a 'space that resists any simple ordering by the opposition of inside or outside' (Richards, 2008: 38) and is discussed later in this chapter.

I then used these eight versions of *Experiment 11* on the quarter-scale mannequin. By using the quarter-scale mannequin, I was able to visualise how effective the individual tensegrity structures could affect the body if re-created in a larger form, through a

contrast of scale, and this very much informed the development *The Arnhem Toile* (A mock-up in cotton calico of *The Arnhem Bodice* to test the tensegrity technique on a garment and the body as represented by a mannequin, discussed later in the chapter, see figs. 5.48-5.50) the subsequent finished piece, and *The Arnhem Bodice* (a garment produced for this study that uses the tensegrity technique to make the embellishments that cover the garment, also discussed later in the chapter, see figs. 5.70-5.73). Obviously, the structures, when placed on a mannequin seventy-five per cent smaller than a full-scale mannequin, looked much larger proportionally (see figs. 5.27-5.38) and suggest the potential to affect the body's proxemic silhouette more dramatically because the tensegrity structures reach further out to proxemic space. The challenge would be to replicate the forms in full scale.



Figs. 5.27-5.31 Iterations using multiples of *Experiment 11* on the quarter-scale mannequin. All standwork executed March-May 2016, exact date not recorded. Photographs © Richard Sorger.



Figs. 5.32-5.34



Figs. 5.32-5.38 Iterations using multiples of *Experiment 11* on the quarter-scale mannequin. The contrast in scale is more dramatic than on a full-scale mannequin. All standwork executed March-May 2016, exact date not recorded. Photographs © Richard Sorger.

The side profile silhouette of figs. 5.32-5.38 was very interesting, calling to mind an ‘explosion’, or crystal formations. However, I was not able to resolve the front or the back to my satisfaction; the placement of further tensegrity structures was not deemed successful in terms of the aesthetics of the design and therefore this particular iteration was not developed further.

At this point I took a break from my practice and did not return to it until 24.02.18 when I began to experiment with growing embellishments using chemistry and biology (see Chapter 4). After my dalliance with growing embellishments, I returned to my earlier practice of 2016 to develop what I have called *The Arnhem Toile* and *The Arnhem Bodice* described late in this chapter.

Intention	Action		Reflection on stand work produced March-May 2016
1		✓	The stand work produced March-May 2016 were the first series of experiments applying the tensegrity technique onto the body (mannequin) and immediately they revealed the relationship between the body and space using embellishment, the tensegrity technique, and embodying the stereometric method (4) to make visible proxemic space. Although not applied to the body via a garment as a carrier, the potential for this is obvious on the body form (6). No new structures were created for these experiments on the body, however, by using the quarter-scale mannequin, incremental scale was explored (8), enabling me to visualise how the use of larger components on the body/mannequin could have more visual impact.
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## Fashion and dress

In this section I first discuss ‘fashion’ and ‘dress’ and the implications of both when applied to the body. I first use the terms ‘fashion’ and ‘dress’, but when I have established what they mean, I will refine my discussion using the terms ‘clothing’ and ‘garment’ as these terms are more pertinent to my research; although fashion as a system utilises embellishment, I will later use the term ‘clothing’ to refer to multiple unspecified garments without the added meaning of ‘fashion’. In terms of ‘dress’ as defined below, it refers to the history of clothing as well as the act of dressing. I use ‘garment’ to refer to a singular piece of clothing.

In Chapter 4 I begin to conceptualise embellishment using Derrida’s notions of supplementarity where fabric and embellishment supplement each other. Embellishment can be conceptualised further, but in order to do so it is necessary to introduce selected fashion theories that first address the difference between ‘fashion’ and ‘dress’, and how theoreticians such as Joanne Entwistle and Malcolm Barnard argue that ‘fashion’ and ‘dress’, (and by extension ‘clothing’ and ‘garment’) are essential to expressions of self and cultural identity.

It is important to note the semantic differences between ‘fashion’ and ‘dress’. According to the editors in their introduction for *The Handbook of Fashion Studies*, ‘dress’ ‘has been studied within an art historical approach in relation to the interpretation of dress in the context of museums and within anthropology... (fashion) is usually associated with the rise of modernity in the West, with its accompanying rapid social and political change and a quickening of time’ (Black et al., 2013: 25). This suggests that ‘dress’ refers to the



history of garments as well as the act of 'dressing'. Valerie Steele, the fashion historian, and Director of the Fashion Institute of Technology in New York City, defines fashion as 'the prevailing style of dress or behaviour at any given time, with the strong implication that fashion is categorised by change' (Steele quoted in Jenss, 2016: 3). So, 'fashion' can also be historical clothing if it is acknowledged as being the preferred style of dress during a certain period; 'fashionable dress' whereas 'dress' on its own refers to clothing not imbued with the extra value of 'fashion' (modernity and/or change).

Fashion is the idea or notion of modernity, in this instance, applied to a mode of dress or a garment. Clothing can be deemed 'in' or 'out' of fashion depending on the context. According to the fashion academic Yuniya Kawamura: 'Although fashion obviously relies on clothing as its raw material, it is highly selective and situates itself within a particular system of hierarchy of success, reputation and power' (Kawamura, 2004: 15). I am interested in both fashion and dress, as they can both act as carriers for embellishment, but it is the intersection where embellishment, clothing or garment meet the body and how embellishment can be conceptualised that I explore in this research.

## **The fashioned body**

In the previous section I discussed the difference between the terms 'fashion' and 'dress'. In this section and the next I discuss the relationship between 'fashion' and 'dress' and the body; how they, 'fashion' and 'dress', imbue the body with meaning.

In *Fashion Theory: An Introduction* (2014), Malcolm Barnard discusses the 'fashioned body', a term that he adopts from Joanne Entwistle, in that all bodies are fashionable as all bodies are 'produced' and are therefore 'cultured' bodies. Bodies are 'fashioned', or 'produced', by their existence in culture at a particular time. Even naked bodies are 'fashionable' as they can be placed in time by a haircut, musculature, or a body adornment such as make up or a tattoo. He extends this idea out to dress, that even clothing that might be perceived by either wearer or viewer as 'unfashionable' is in fact not; it is a product of its time, or in the case of vintage clothing, worn as a statement, which is also, of its time.

## The decorated body

According to Entwistle 'all people 'dress' the body in some way ... the ubiquitous nature of dress would seem to point to the fact that dress or adornment is one of the means by which bodies are made social and given meaning and identity'. Clothing can align an individual with a 'tribe' or the opposite, express individuality. She continues; '...no culture leaves the body unadorned but adds to, embellishes, enhances or decorates the body.' (Entwistle in Barnard, 2007: 273). Entwistle uses the word 'embellishes' to imply an 'addition', not to be confused with my use of the word 'embellishment' which refers to the addition of components to the surface of a fabric. However, both uses of the word refer to an addition. Entwistle argues that clothing is the addition to 'the unadorned body', it is the supplement to the body, and by extension I argue that embellishment is the supplement to this addition; embellishment is added to clothing which is then added to the unadorned body. In this instance, the embellished garment can then contribute to the fashioned body as defined by Barnard.

This begins to situate what fashion and dress can mean in relation to the body they adorn as well as the function of fashion and dress in social and cultural terms. Malcolm Barnard goes further with the theory stating that 'if there is no natural body existing outside the trappings of culture, then there is no body until it has been dressed and it takes the distraction and delay of fashion and clothing for the body to exist at all' (Barnard, 2014: 214). The natural body is not literally missing, but it is not able to be represented without cultural adornment such as clothing and fashion<sup>23</sup>.

The Italian academic Patrizia Calefato cites Lévi-Strauss that the decorative tattooing on a Māori's face *is* their face, 'it *creates* it, thereby conferring on the face social identity, human dignity and spiritual significance' (Calefato, 2004: 6). So, in this example it is suggested that there is no Māori 'face' that is not tattooed or decorated, and the decoration imbues the wearer with meaning; social and cultural. According to Sciam

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<sup>23</sup> Please note that so far in this chapter I have referred to 'fashion' and 'dress'. As the discussion evolves in the next section, I take my lead from Barnard and replace the term 'dress' with 'clothing'. As mentioned in the opening section, 'dress' refers to the history of garments as well as the act of dressing, but the discussion now moves onto the clothing, and by extension garments, as specific objects rather than 'dress' which does not. However, in the final section of this chapter when I discuss Barnard and prosthesis, Barnard again refers to 'fashion' and 'dress'.

'Like different national or regional costumes, beads, in their different colours, arrangements and styles, are important symbols of collective, as well as individual identity for many social groups' (Sciama et al., 2011: 18). Therefore, this 'decoration' can be viewed as essential to expressions of self. If clothing makes the body possible according to Barnard, then it can be argued that embellishment also makes the unadorned body possible.

## **Fashion and clothing as prosthesis**

In Barnard's *Fashion Theory: An Introduction* he writes that the modern body cannot exist without fashion and clothing because fashion and clothing are essential to expressions of our cultural and social identities. Barnard theorises that clothing and fashion are tools and have a social and cultural function; our bodies are not complete until they are dressed, and if clothes are tools that help us to express ourselves, then it can be argued that they *complete* the body and the self; they make the body and the self possible.

Following on from this, Barnard argues that if we agree that clothing and fashion are tools that make the body possible, they, clothing and fashion, can therefore be viewed as prosthesis; something that is added to the body and without which the body would be incomplete. Barnard says, 'To think of fashion as having a function is to think of fashion as a tool. And to think of fashion as a tool is to think of it as a prosthetic' (Barnard, 2014: 33). This led me to consider if embellishment can be viewed as a tool for fashion and can also be viewed as a prosthetic.

The prosthetic is not an enhancement in this sense; it is what makes the body possible to begin with. Barnard refutes Entwistle's argument that clothing is solely an addition to the body and goes on to theorise that clothing is not a simple enhancement of the body, it makes 'our experience, and ourselves, possible.' Barnard states that there is no body that is then decorated, rather 'it is the 'decoration' that makes the body possible' (Ibid., 39). Decoration is not an addition; it is what completes the body. Barnard makes the connection to Derrida's notions of supplementarity where the addition of culture (clothing) is added to the natural (body) making it, the body, possible (Ibid., 115). Barnard uses the term 'decoration' to refer to dress, but extrapolating from this, embellishment can help 'fine tune' this completion of the body. It is now necessary to go beyond the

earlier notion that embellishment is the addition to the addition as suggested by Entwistle. If fashion is a tool and garments are prosthesis and extensions of the body, then it can be argued that embellishments are prosthetics also. This notion of embellishment as a tool and prosthetic can now be applied universally to fashion embellishment practice.

## The Arnhem Toile

In February 2019 I was invited by a curator at the Museum Arnhem, The Netherlands, to submit a proposal of work to be included in the exhibition *Body Control: Jewellery and fashion at the boundaries of the human body*, October 2019 – January 2020. I proposed what became *The Arnhem Toile*<sup>24</sup> and was accepted for exhibition on 02.05.19 (figs. 5.48-5.54). The finished garment was completed on 14.09.19, but on the day before completion I was informed by the curator that my piece had been ‘deselected’ from the exhibition due to funding issues and the cost of shipping my work to the Netherlands. However, the initial deadline to finish the piece was an invaluable prompt to complete a garment using the tensegrity technique for this study.



Figs. 5.39-5.40 A basic bodice shape modelled on the mannequin. The seams have been covered by folded red sequins as a response to potential construction issues where the seams might be hand sewn, and therefore slightly imperfect. The use of the folded sequins would potentially hide any imperfections. Photographs © Richard Sorger.

Figs. 5.41-5.42 A new structure created on the right shoulder of the size 12 mannequin as a starting point for the placement of structures on the garment. Photographs © Richard Sorger.

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<sup>24</sup> 'Toile' is the French word for a mock-up of a garment made in a cheaper fabric to test the fit and form before the final garment is made.

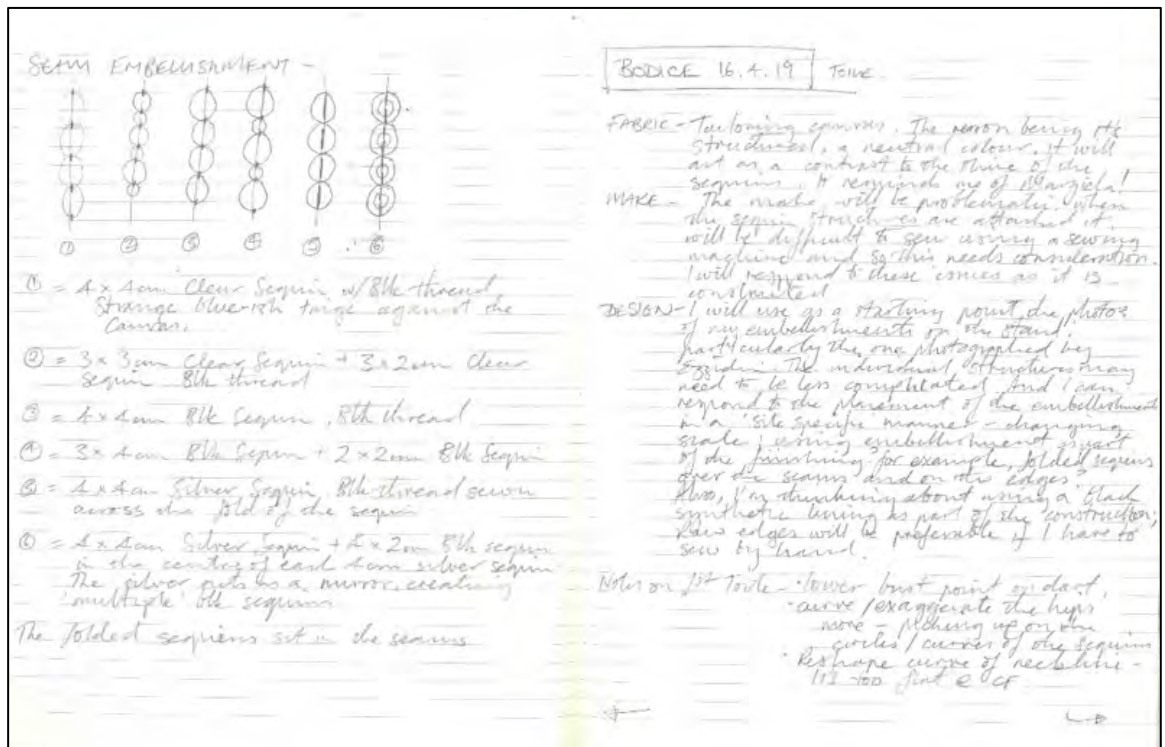


Fig. 5.43 RDJ (16.04.19). Photograph © Richard Sorger.

I modelled the bodice on the size 12 mannequin first in paper and then recreated it in cotton calico. Prior to making the first toile, I was thinking about how I might have to construct the piece. I thought that I would have to sew some, if not all, the seams by hand because the bulk of the embellishments would not permit some of the seams to go under the foot of a sewing machine. This led to me thinking how I might disguise these seams, which would not be constructed as well by hand as by machine. In order to do this, I folded sequins in half and grafted them to the toile with the fold line of the sequin over the seam (see figs. 5.39-40 and 5.44). First I experimented with left-over red sequins and then moved onto reflective silver sequins. The reflective sequins 'multiplied' the sequins, creating an effect similar to a carnival's hall of mirrors. This technique was interesting, but added nothing to the garment other than an aesthetic solution to a technical issue, neither using sculptural tools in their production or possessing the structure to explore proxemic space, and proved unnecessary to the finished piece. This became even more apparent when I tried to combine structures based on *Experiment 11* with the sequins covering the seams (see figs. 5.45-5.46). The combination felt discordant and lacking in the effective directness of earlier standwork (such as fig. 5.26) and I felt there was a simpler and more effective solution to be found.

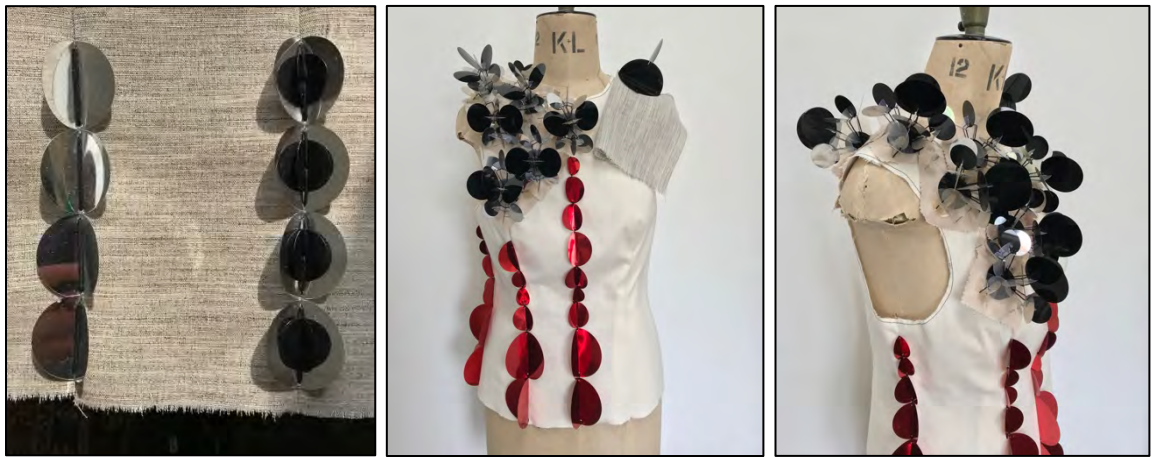


Fig. 5.44 Sample of folded silver sequins where the fold 'sits' in the seams of the canvas. Here I have experimented with the reflective quality of the silver sequin; on the left I observed the the sequin reflected itself. The version on the right has a smaller black sequin 'sitting' inside the larger silver sequin. Both the black sequin and the silver sequin are reflected in the surface of the larger sequin. Photograph © Richard Sorger

Figs. 5.45-5.46 Multiples of *Experiment 11* are applied on the right of the toile. A new, larger form is attached to the left shoulder. Photographs © Richard Sorger.

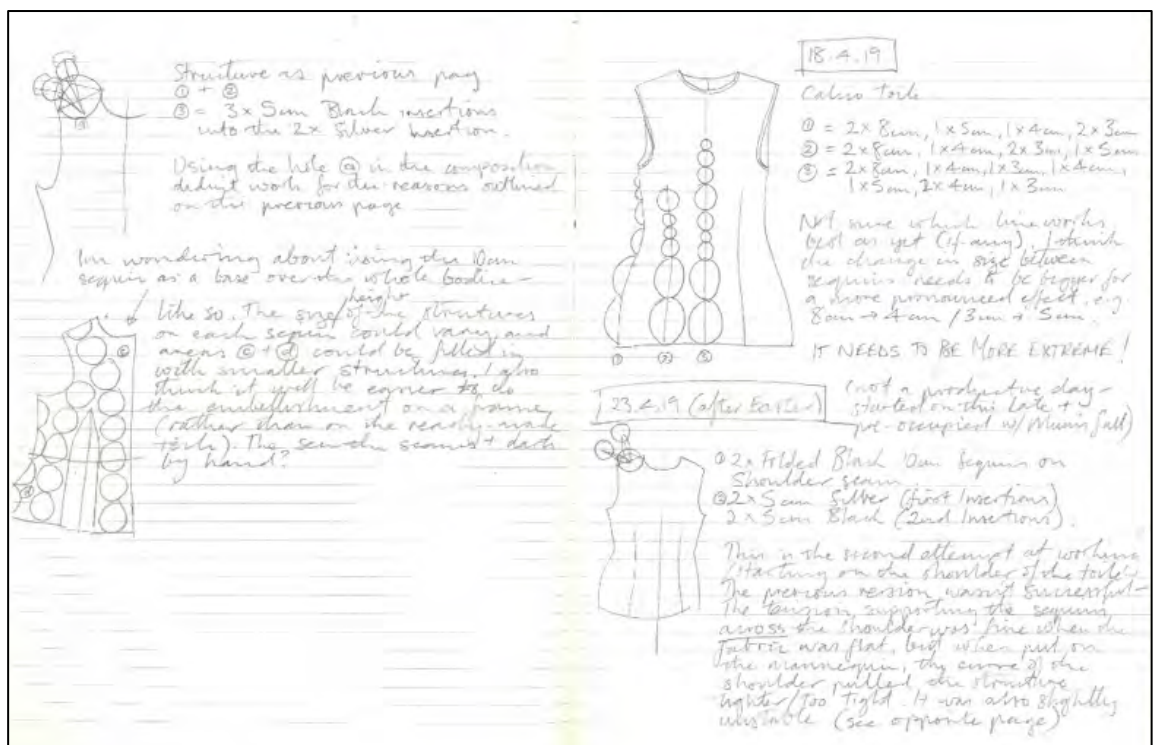


Fig. 5.47 RDJ (18.04.19). Photograph © Richard Sorger.

On 23.04.19, I removed the sequins from the seams of the fabric toile base and started again, this time placing a large structure on the shoulder; two folded black 10cm base sequins into which two 5cm silver sequins are inserted and then into these, a 2<sup>nd</sup> insertion of two 5cm sequins (see figs. 5.41-5.42). After a few necessary adjustments to the thread tension of the structure it proved to be a more successful starting point and I added more

iterations of this structure with 10cm sequin bases to the half-toile (see figs. 5.48-5.52). This development embodied much more the directness and relative simplicity that was started in fig. 5.26.



Figs. 5.48-5.50 The embellished front right panel as seen from three perspectives. Photographs © Richard Sorger.



Figs. 5.51-5.52 An embellished back left panel has been added to the toile. Photographs © Richard Sorger.

The side proxemic silhouette was affected by which direction the base sequins were applied; either with the fin of the folds vertical or horizontal. Base sequins were alternated between vertical and horizontal in order to accommodate the structures both down and across the garment. But where they occurred on the garment could affect the effectiveness of the proxemic silhouette. This is because the direction of the base sequins affects the direction of the 2<sup>nd</sup> insertion, which will be facing the same way as the base

sequins because sequins are inserted at a right angle to the sequin they are being inserted into.

The direction of the base sequin placement became particularly apparent in the order of the structures on the back of the toile as can be see in the difference between fig. 5.53 and fig. 5.54. In fig. 5.53 the proxemic silhouette of the back is not as pronounced as the front as noted in the RDJ on 24.06.19 (fig. 5.56). At first I thought this was because the bust at the front enabled the more pronounced proxemic silhouette, but by changing the order of the base sequins' horizontal versus vertical fin, the silhouette becomes almost as pronounced as the front. How I recorded this in my RDJ can be seen in figs. 5.55-5.56.



Figs. 5.53-5.54 Side view of the toile in progress. The photo on the left shows a less successful proxemic silhouette of the back. The photo on the right shows how the proxemic silhouette of the back was corrected by replacing the horizontal back sequins with vertical ones and vice versa, creating a different and more effective order of placement. Photographs © Richard Sorger.



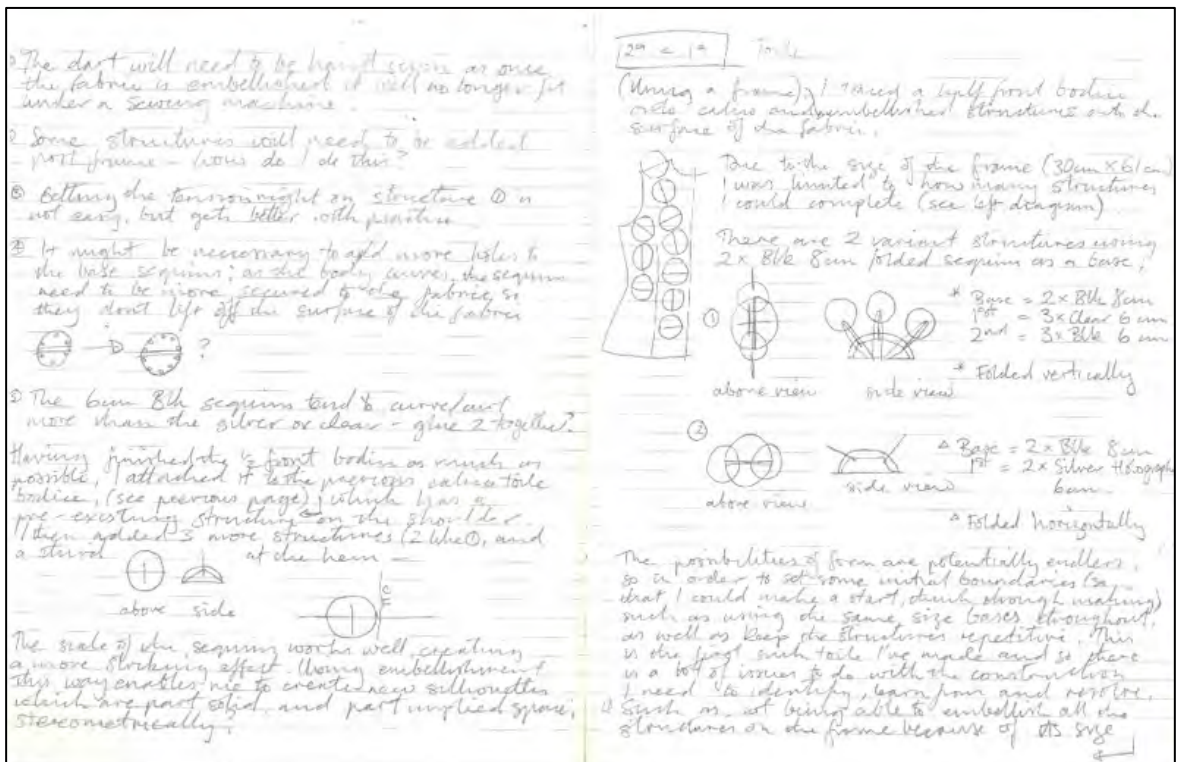


Fig. 5.55 RDJ (29.04.19). Photograph © Richard Sorger.

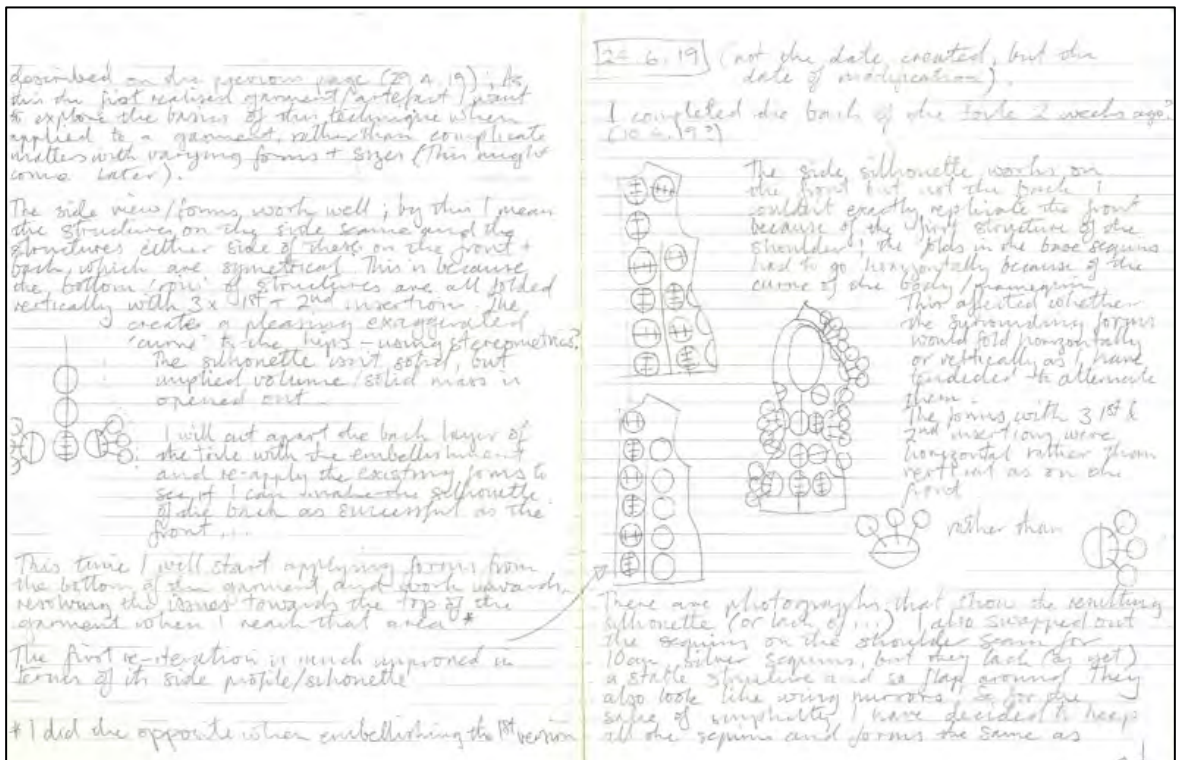


Fig. 5.56 RDJ (24.06.19). Photograph © Richard Sorger.

When I was plotting the placement of the embellishments to the paper pattern, I realised that there was an organic relationship between the embellishment and the construction of the garment; it was impossible to complete the garment before the embellishment and

vice versa. For example, the embroidery frame<sup>25</sup> (30cm x 77cm) was still not large enough to complete all the embellishment while the fabric was stretched onto it, so I would have to add the last few tensegrity structures by hand, once the garment was made (figs. 5.58-5.60). These extra structures would be made on smaller frames on a felt base fabric and then applied to the bodice. Also as expected, I realised that I would need to sew some of the seams and darts by hand as they would not fit under a sewing machine due to the bulk of the embellishment. Structures that crossed seams would be applied later as would the structures at the hem of the bodice.

Intention	Action		Reflection on <i>The Arnhem Toile</i>
1		✓	<i>The Arnhem Toile</i> ; proxemic space is being explored through the application of the tensegrity technique to the body via the garment as a carrier (4, 5 & 6). The structures supplement the fabric and build out to space (7). However, the iterations of the same form do not allow for incremental building out to space (8), but this criterion was not the intention of this toile; its purpose was to explore thinking through making and the first attempt to use the tensegrity technique on a garment. In this respect it is successful.
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## Experiential bodies

By moving my practice from individual structures and onto the body and ultimately a garment, it is now necessary to discuss the relationship between the body and garment using selected theories to first establish that we experience the world through our bodies and, because all bodies are established as dressed bodies, clothing is also essential to how we experience the world.

Bodies are how we experience the world through our senses; 'The body forms the envelope of our being in the world, and our selfhood comes from this location in our body and our experience of this' (Entwistle, 2000: 334). But our bodies are also how we are experienced by the world; we are both subject and object, living in our bodies and living in the world. The French philosopher Maurice Merleau-Ponty (2002) places the body at the centre of perception and experience of the world. This phenomenological perspective

<sup>25</sup> It is necessary to stretch fabric onto an embroidery frame when grafting an embellishment to create and maintain the correct tension of the fabric for applying the components.

guides my approach to how clothing can be viewed as inseparable from the body and is therefore essential to the discussion about bodies and, in the next chapter, space.

## **The embodied experience of practice for this study**

A series of eight videos of the three garments discussed in this thesis, *The Proxemic Dress*, *The Arnhem Bodice* and *The Eclipse Dress* were recorded on a model, the jeweller Hannah Martin, in May 2022 (see Appendix 3 for You Tube links to the videos). Due to issues relating to COVID-19 restrictions, it was not possible to use more than one model in the close proximity of where the videos were made (the author's house), nor was it possible to take the model out to a social environment.

The aim for making these videos was so that the created garments could be experienced by the wearer, and so that the dresses could be seen in movement testing their egocentric space (the space carried by and with the individual, introduced in Chapter 6) through engagement with allocentric space (the fixed space an individual moves through, also discussed in Chapter 6).

The model was directed to move through the corridors of the author's house. This direction was limited to simple instructions such as walk, turn, walk away, or in the case of Video 8: *The Arnhem Bodice (Rotation)* and Video 11: *The Eclipse Dress (Movement)*, the model was asked to turn around (rotate) so that both garments can be viewed through 360°.

Video 4: *The Proxemic Dress*, Video 5: *The Proxemic Dress (Closer)*, Video 6: *The Arnhem Bodice*, Video 7: *The Arnhem Bodice (Closer)*, Video 9: *The Eclipse Dress*, and Video 10: *The Eclipse Dress (Closer)* all depict the model moving from a relatively more open space (the kitchen) through a narrower corridor towards the camera and then away again. The corridor is a more constrained space and makes more apparent the silhouette of the model supplemented by the garment as the proxemic embellishments of *The Proxemic Dress* and *The Arnhem Bodice* extend out from the body to the narrow space. The soft proxemic embellishments towards the hem of *The Eclipse Dress*, occupy the width of the space and caress the wooden walls. The viewer becomes more aware of the space of the

corridor through the extended silhouette and the allocentric movement through the space.

In Video 11: *The Eclipse Dress (Movement)*, the model was asked to rotate, but in a playful moment the model also decided to ‘shimmy’<sup>26</sup> causing *The Eclipse Dress* to move and create a soft sound, a rustling, or a sound similar to waves on a shingle beach (this sound is also evident in the two other videos of the dress moving through the corridor). The model appears to be enjoying herself, as evidenced by the raised eyebrows and smile at the end of the rotation.

In contrast to this, *The Arnhem Bodice* made no sound, nor did the tensegrity structures move. As discussed in Chapter 5, *The Arnhem Bodice* is created with hard proxemic embellishments (a more rigid embellishment) whereas *The Eclipse Dress*, discussed in Chapter 6, utilises soft proxemic embellishments. This refers to the choice of materials used for the structure and the outcome of an embellishment that is less rigid, perhaps inviting more interaction between wearer and viewer because of their tactility and in this case also enable movement and sound.

It becomes evident that *The Eclipse Dress* is a more multisensory experience than just a spatial one, because of its movement and sound. The researcher Sara Chong Kwan writes that in order to understand dress as embodied practice it is necessary to consider how the wearer’s body perceives dress and this can only be done through consideration of all the senses (Laing & Willson, 2020: 55). She cites the academics Mary Ellen Roach-Higgins and Joanne B. Eicher (1992) who argued that dress ‘is perceived by all the senses, not just sight but also, in varying degrees, touch, sound, smell and to a lesser extent taste’ (Kwan in Laing & Willson, 2020: 55). This approach to dress as a haptic experience for the wearer is a more prevalent consideration in contemporary Fashion and Dress studies as explored by researchers such as Efrat Tselon, Joanne Entwistle, Shaun Cole, Lou Taylor Sophie Woodward, and Lucia Ruggerone (Ibid., 2020: 58). Eicher (2021) also discusses how it is necessary to consider these other senses to fully understand the act of dressing across

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<sup>26</sup> A kind of ragtime dance (a kind of music evolved by black American musicians in the 1890s) where the whole body shakes or sways rhythmically.

cultures because 'individuals clothe, coif, perfume, or accessorize themselves each day for different settings and occasions' and they offer a more personal insight into the wearer.

The academics and researchers Kristina Neidderer and Katherine Townsend (2014: 7) observe the multisensory potential of an object beyond its visual appearance -sound, touch, and smell- as more intimate experiences. These are often not experienced by a viewer because an object or artefact is sometimes exhibited in an environment that does not allow the viewer to engage with these other more intimate haptic qualities. However, the use of video for this study makes apparent the movement and sound of *The Eclipse Dress* that a static exhibition alone would not allow.

The sound quality of *The Eclipse Dress* was not an intention of the practice, but it adds another layer to the use of the tensegrity technique that has not been explored further as part of this study. A comparison can now be made between *The Eclipse Dress* and Viktor & Rolf's autumn/winter 2000-1 collection *Bells* (Viktor & Rolf embellished garments with bells, like pearls, for this collection discussed in Chapter 3, see figs. 3.14-3.15). Here, the Dutch designers wanted their clothes to be heard before they were seen, and it can be argued that in this instance, sound become a conceptual addition to the garment, questioning the materiality and multisensory possibilities of embellishment. The academic historian Mark M. Smith discusses in *Sensory History* (2007: 42) how sound and hearing (aurality and the spoken word) were of high importance to social contracts before the use of writing became more prevalent in the pre-Enlightenment West. He writes that in Western history hearing is 'assumed to bridge the "highest" sense of sight and the "lower" senses of smell, taste, and touch' (Ibid.: 41). In terms of *The Eclipse Dress*, the sound produced, as evidenced in the videos, is secondary to the visual qualities of the proxemic silhouette. However, this underexplored haptic quality of embellishment and the practice for this study offer further avenues of exploration post-PhD.

Smith discusses another haptic sense, touch, and argues that clothing 'can, and should, be read inside out as well as from outside in' (Ibid., 107) and how clothing feels against the skin is of high importance rather than just its 'visual representation' (Ibid., 107) or how

clothes look. As discussed in Chapter 5, the body and garment can be viewed as inseparable using the arguments of Gautier (Gautier & Lehmann, 2017), Barnard (2014), Entwistle (2000) and Soper (2001), then the exterior second skin (i.e., the garment) can also be examined in terms of its tactility and how it is not just the surface of the garment, but the second skin of the wearer. How the wearer perceives the surface of their body when wearing one of the pieces produced for this study is an area for further discussion.

In Smith's conclusion to *Sensory History*, he discusses how the senses are often discussed individually and do not take into account how they can also work together 'sometimes in a complimentary fashion, sometimes in tension' (2007: 126) and can therefore be viewed as 'intersensory'; interconnected rather than separate. Drawing on this idea further and one can argue that in terms of *The Eclipse Dress*, sound can be viewed as the supplement to the tensegrity structure because it lacks a multisensory or intersensory state that sound now fulfils. The by-product of these videos is that through the embodiment of practice they have made the garments 'come alive' with potential for further research beyond this thesis, in a context of multisensory experiences and affects.

At the time of making the videos, the model was not formally questioned about their lived and embodied experience of wearing the garments and if there were any differences in her experience between each garment. There is also the potential to explore how using more than one model opens up the potential for interaction and for a dialogue between more than one garment being worn in a space simultaneously. The model or models could also explore social space beyond the author's house, which might invite interaction with other individuals and more diverse environments. These possible avenues for further research are discussed in the conclusion to this thesis.

## **The body and garment are inseparable**

In this section I cite specific theories that argue that body and clothing (garment) are inseparable. If bodies are how we experience the world, then by extension clothing is also essential to how we experience the world. In Chapter 4 I argue that embellishment is the supplement of fabric and completes it. Garments are constructed from fabric and if the fabric is embellished, as in the case of my practice, then by extension embellishment also

becomes inseparable from the body. This argument, developed further in Chapter 6, means that my practice when applied onto the body becomes essential to how the wearer experiences space.

The French writer and critic Théophile Gautier argued as early as 1872 that bodies and clothing were inseparable (Gautier & Lehmann, 2017: 207). Entwistle adds to this by arguing that clothing is necessary to prepare our bodies for the social world and that ‘human bodies are *dressed* bodies’; body and clothing are essentially intertwined and inseparable in order to situate ourselves in the world (Entwistle, 2000: 6-7). Barnard dissects these ideas further, asking the question, is there a natural body that is dressed (‘fashioned’)? or is the body only complete when it has been dressed (‘fashioned’)? (Barnard, 2014: 111-112). Barnard suggests that clothing completes the body, as discussed earlier in this chapter. The British academic and philosopher Kate Soper’s asks where the body ends, and clothing begins? (Ibid., 112; Soper, 2001: 13-32). However, Barnard suggests that there is no natural point where this happens (Barnard, 2014: 112), and I further complicate this argument with the spatial theory of ‘ma’; a space that exist in between the body and the garment first discussed in Chapter 3 in relation to the supplemented silhouettes of Arkadius, Orta, and Owens (see Chapter 3, figs. 3.21-3.22 and 3.24-3.28). It is not possible to argue that the body and garment are inseparable before the concepts of ‘ma’ (and ‘mu’) have been addressed.

## **‘Ma’ and ‘mu’**

Although ‘ma’ and ‘mu’ are spatial theories, I am discussing them in this chapter and not the next because they occur between body and garment and ‘below’ the outer boundary of the garment. In Chapter 3, part two of the contextual review for this study, I discuss examples of clothing that have increased and visible ma, such as Arkadius’ graduation collection (see Chapter 3, figs. 3.21-3.22), and the examples of clothing by Lucy Orta and Rick Owens (see Chapter 3, figs. 3.24-3.28). It is also present in historical clothing when undergarments such as panniers, crinolines, and bustles are used to supplement the silhouette of the wearer (see Chapter 3, figs. 3.1-3.5). In the next chapter I address space beyond the surface boundary of the garment.

The space between the body and the garment is known in Japan as *ma* and is literally translated as ‘an interval in time and/or space’ (Graham 2014: 40) and the earliest reference to its usage is in eighth century Japanese poetry to discuss ‘misty spaces between mountains’ and the passage of time but wasn’t used in the discussion of aesthetics until after the second World War (Ibid., 40). *Ma* as a concept is used in the discussion of Japanese fashion designers such as Comme des Garçons, Yohji Yamamoto, and Issey Miyake (Bolton, 2017: 13; Arzalluz et al., 2016: 153; Frankel et al., 2010: 16; Crewe, 2010). Arzalluz et al. suggest that the Belgium designer Martin Margiela also explored the concept of *ma*; his oversized clothes for autumn/winter 2000-01 were enlarged by 148% in every detail from a European size 42 to a 78 or 80, a size that does not readily exist in ready-to-wear fashion (Wilcox, 2001: 109; Margiela, 2018: 94). These larger clothes were worn by smaller bodies with, presumably, a void (‘*mu*’) between the two (fig. 5.57). The notion of *ma* challenges theories about how the body and garment are inseparable; how can they be inseparable if there is space between the two?



Fig. 5.71 Martin Margiela autumn/winter 2000-1. Photograph © Marina Faust

In order to explain *ma*, it is first necessary to discuss the different approaches to the design of clothing between Europe and Japan; European haute couture uses curves and darts to fit the body, but Japan has the kimono as a starting point; a rectangular and flat garment when not worn. ‘... To the Japanese, the superfluous ‘space’ between the garment and body, referred to as *ma*, is more than simply a void; it is a rich space that



possesses incalculable energy' (Frankel et al. 2010: 16) meaning that the approach to the design and drape of clothes in Japanese culture is not in thrall to fit as with European, and defined as Western, fashion. Miyake's designs in particular have a strong link to the kimono and focus on the void between skin and fabric (Crewe, 2010).

The fashion curator Andrew Bolton adds the *koan* (a Zen Buddhist riddle without a solution) 'mu', meaning 'emptiness' or 'void', to *ma* in his discussion of Rei Kawakubo's work as *Comme des Garçons*;

In her work, space (*ma*) and emptiness (*mu*) coalesce in the concept of interstitially, the space between entities and boundaries. This in-between space reveals itself as an aesthetic sensibility, and unsettling zone of visual ambiguity and elusiveness, engendering and effectuating an art of the in-between (2017: 13).

The *ma* between body and garment is (generally) only experienced by the individual and can be argued that it is separate from the proxemic intimate space (Hall's definition of space 0-45cm surrounding the body, see Chapter 1) that begins on the surface of the garment. This 'hinterland' between body and garment raises some interesting questions about the inseparability of body and garment; if, as discussed by Entwistle, Barnard, and Gautier, body and garment are inseparable, is it possible for there to be a recognised space (*ma*) between the body and the garment? Or can it be argued that *ma* is actually part of the garment? Or part of both body and garment; the glue that binds them both together? As mentioned in the section above, Barnard asks the question about where does the body end and the garment begin? The concepts of *ma* and *mu* complicate this already ambiguous question.

*Ma* problematises the conceptualisation of the garment and body as one, but it can be rationalised as another layer to the body and dress before the exterior interface between

body/garment<sup>27</sup> and space. A layer that is neither a part of body or garment and yet it is a part of both<sup>28</sup>.

## **Clothing as the boundary of the body**

Clothing, through the act of dressing, forms a barrier, or boundary, around the body and is the interface between body and space as argued by researcher Chris Hesselbein (2019). Entwistle writes; 'Dress lies at the margins of the body and marks the boundary between self and other, individual and society. This boundary is intimate and personal, since our dress forms the visible envelope of the self' (Entwistle, 2000: 232).

In proxemic theory as defined by Edward T. Hall, intimate space is understood as the immediate space (0-45cm) surrounding the body. Because the garment acts as a second skin and a barrier between us and the outside world (according to Hesselbein (2019) and Entwistle (2000)), proxemic space is traditionally measured from the surface of the garment outwards as supported by the research of the academic Heidi Overhill (2014) (see Chapter 6).

The designers cited in the previous section explore the liminal space between the body and garment and in my practice, I aim to explore the space *beyond* the surface of the garment through the concept of embellishment, creating a 'porous or ambiguous body edge' (Sara & Littlefield, 2014: 299). Later in this chapter I discuss this hinterland on the surface of the fabric that tensegrity structures inhabit. To do this I will discuss 'ergon' and 'parergon' as framed by Derrida and the notion of 'parergonal space'. But first, in the next section I discuss the development of *The Arnhem Toile* and *The Arnhem Bodice* as the first steps of applying the tensegrity technique to the body via the garment.

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<sup>27</sup> I now use the term 'body/garment' to support the notion that the body and garment are inseparable and 'fused' together.

<sup>28</sup> This argument has the potential to be developed further, but currently sits outside the scope of this study which is concerned with space beyond the surface of the body and garment. This line of research could be explored further after this PhD study is complete.

## The Arnhem Bodice

After *The Arnhem Toile* was completed, I started work on the finished garment; *The Arnhem Bodice*. I decided to use a grey wool and camel hair canvas because of its colour, stability, and texture, acting as a good foil to the shine of the sequins, as well as remaining neutral in colour.

In the RDJ on 24.06.19 (fig. 5.56) I discuss keeping the structures uniform because there are so many other variables to account for when making the actual piece, as discussed above, but ultimately it is the uniformity that makes the garment more effective; when finished, there are so many structures, so many sequins, that more variety of form would have added complexity to what is already a complex garment.

I started construction on the final piece 19.08.19 (RDJ fig. 5.57) by calculating how many individual tensegrity structures I would need and preparing the sequins for production by notching and piercing them. *The Arnhem Bodice* used two slightly different structures that were alternated down and across the garment to accommodate both. The larger structure consisted of two insertions; two 8cm black sequins for the base grafts, 5cm semi-transparent sequins for the 1<sup>st</sup> insertions, and 6cm black sequins for the 2<sup>nd</sup> insertions. The second structure had one 1<sup>st</sup> insertion; two 8cm black sequins for the base, and 6cm silver holographic sequins for the 1<sup>st</sup> insertion. The second structure was smaller than the first to accommodate the 2<sup>nd</sup> insertions of the first structure. The fin of first structure with two insertions would generally be vertical and the fin of the second structure with only one insertion would generally be horizontal.

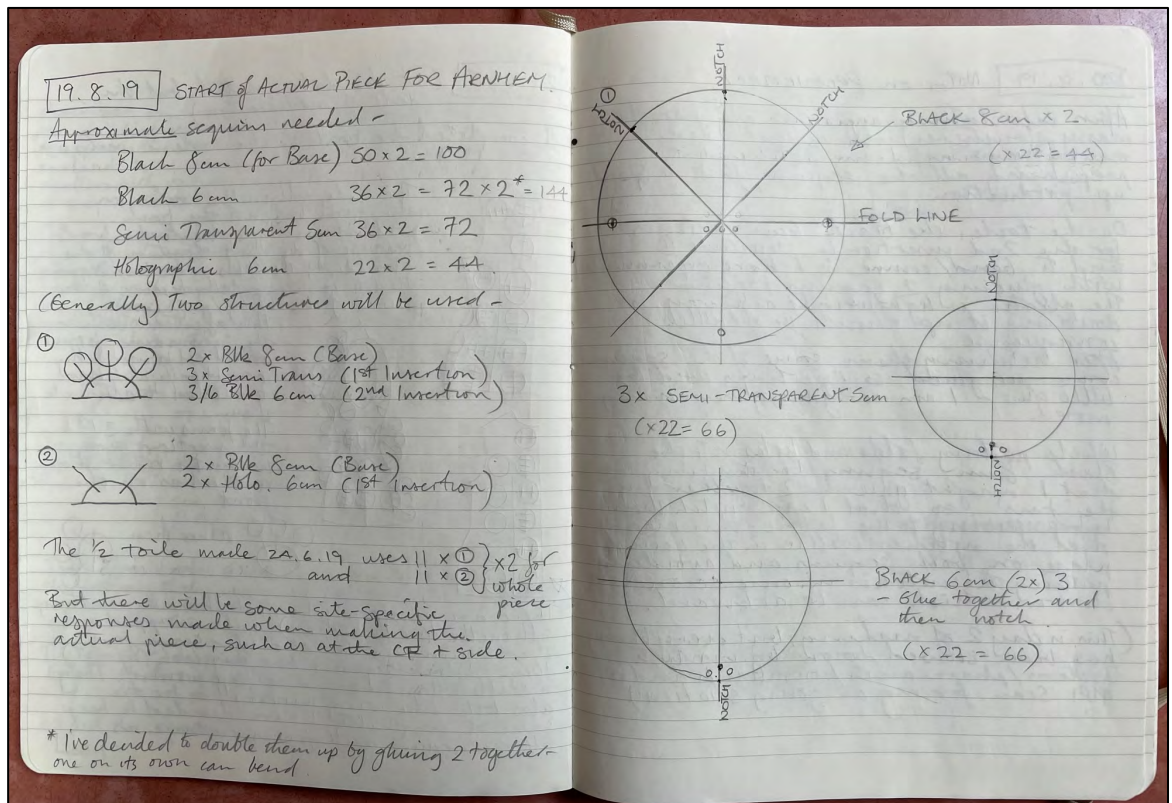


Fig. 5.57 RDJ (19.08.19). Photograph © Richard Sorger.

In terms of the practicalities of making the bodice, I had to embellish each panel of wool and camel hair canvas separately due to the size of the embroidery frame that I was using. Initially I thought I would mount the canvas onto a black satin lining to add further stability, but as noted in the RDJ on 22.08.19 (fig. 5.63) this was not necessary as the canvas was stable enough and adding another layer complicated the making of the bust darts. So, I decided to use black satin binding to resolve the finish of the neckline, armholes, and hem, but this needed to be added to the panels before they were embellished and cut out; I wanted to use a sewing machine to apply them as this would have a neater and more robust application and they would be finished later by hand after the bodice panels had been put together. The binding can be seen in figs. 5.58 to 5.60.



Figs. 5.58-5.60 Details of panels for *The Arnhem Bodice* stretched on an embroidery frame and in progress. Black satin bias binding was partially sewn around what would become the neck line and the armholes. Photographs © Richard Sorger.



Fig. 5.61 The four final panels for the Arnhem Bodice joined together and laid flat. Embellishment structures that cross seams and at the hem were applied later. Photograph © Richard Sorger.

This was the first opportunity to fully test the technique and the practicalities of its application. It was also during the process of making this garment that I realised the potential of using the technique on the silhouette of the garment; using certain scale of component and by actively deciding on the direction the structures (the 2<sup>nd</sup> insertions

were placed onto the bodice vertically rather than horizontally in this case) extends the silhouette beyond the surface of the fabric and employ the stereometrics method to create implied volumes around the garment and making visible proxemic space.

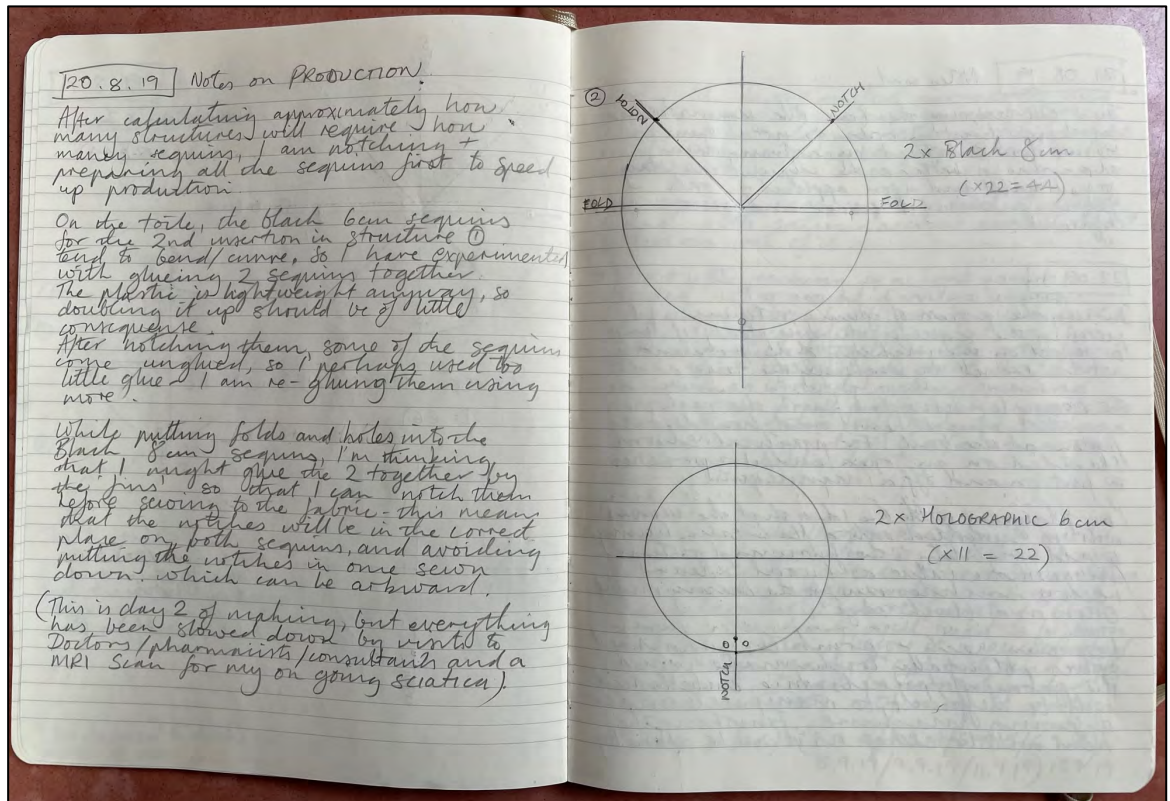


Fig. 5.62 RDJ (20.08.19). Notes on the production of *The Arnhem Bodice*. Photograph © Richard Sorger.

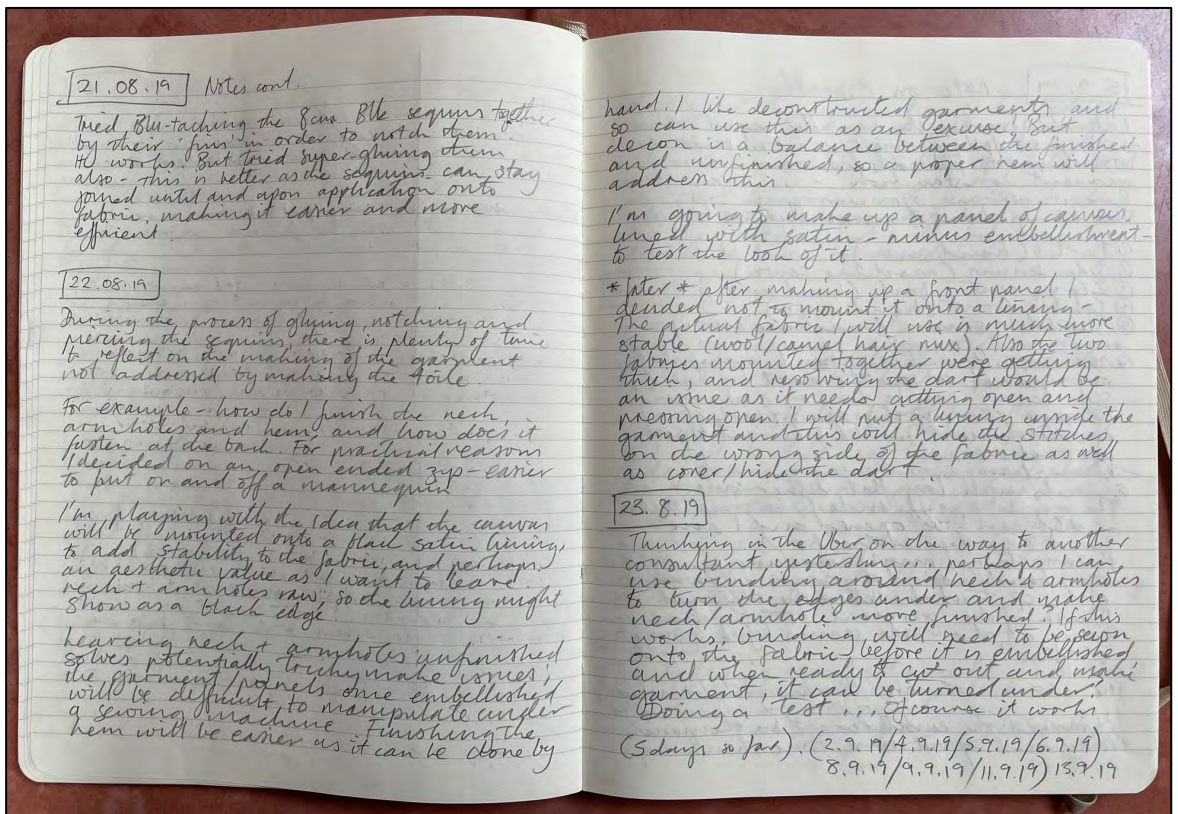


Fig. 5.63 RDJ (21.08.19 and 23.08.19). Notes on the production of *The Arnhem Bodice* continued. Photograph © Richard Sorger.

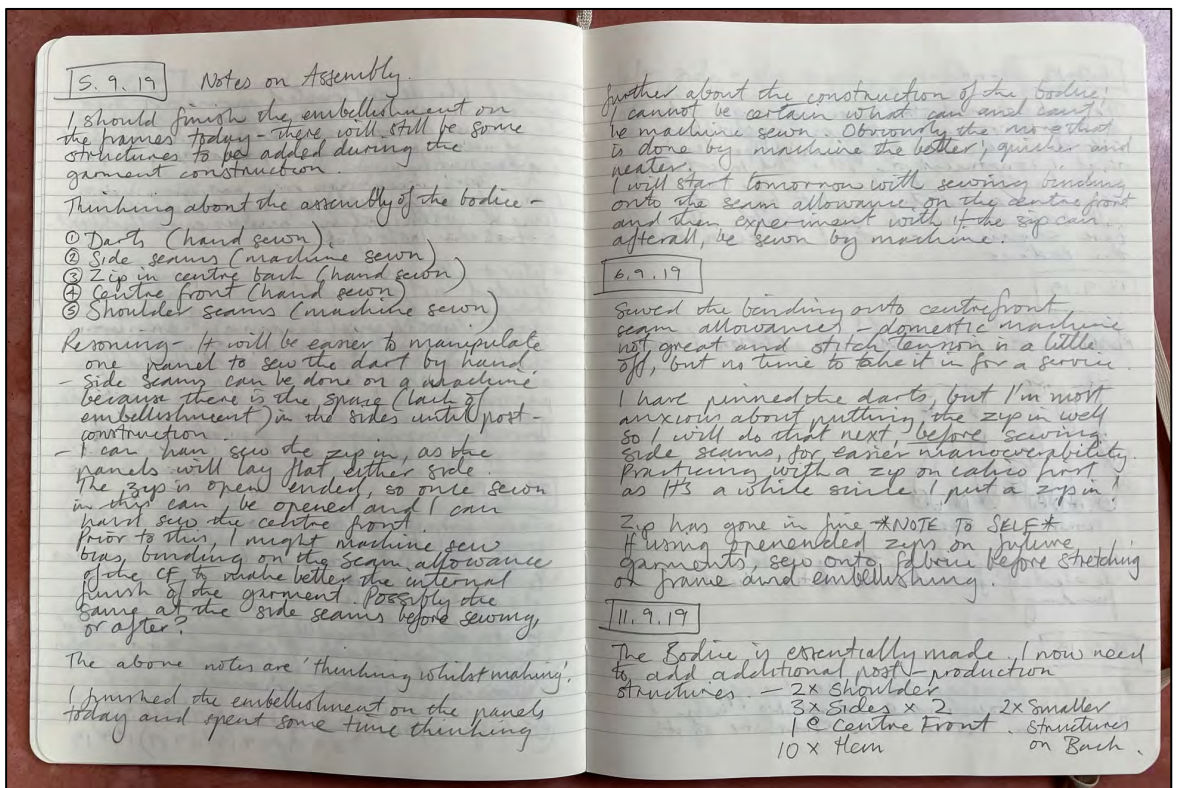


Fig. 5.64 RDJ (05.09.19 and 11.09.19). Notes on the assembly of *The Arnhem Bodice*. Photograph © Richard Sorger.

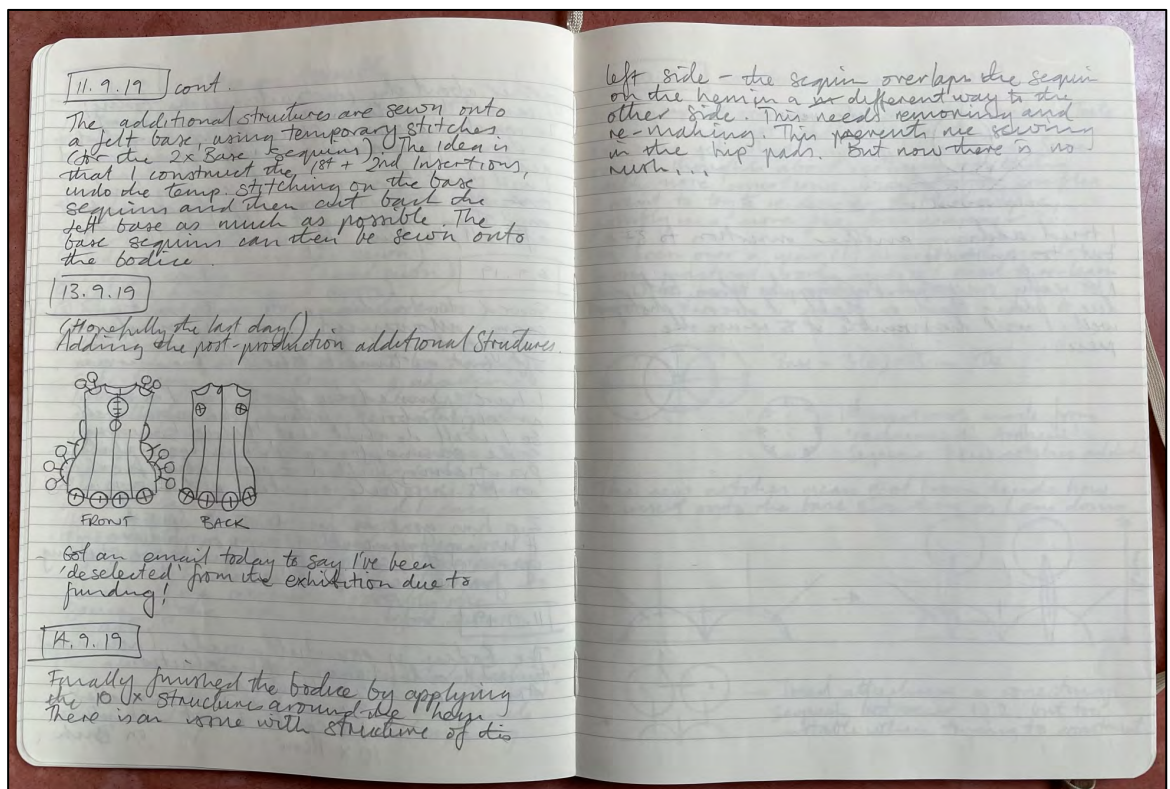


Fig. 5.65 RDJ (11.09.19, 13.09.19, and 14.09.19). Notes on the assembly of *The Arnhem Bodice* continued. Photograph © Richard Sorger.

In my RDJ between 20.08.19 and 14.09.19 (figs. 5.62-5.65) I annotate and reflect on the process of making the bodice and I have summarised these issues in the above text. On the 13.09.19 I received an email from the museum 'deselecting' me from the exhibition due to a funding cut, and they had decided to focus the exhibition on European designers as the cost of transit would be less. Obviously, this was hugely disappointing, but the initial offer had provoked me into committing to making a final piece using the tensegrity technique. I completed *The Arnhem Bodice* on 14.09.19 (figs. 5.66-5.69).

## The evaluation of this practice

The final piece was not perfect. Controlling the tension of the thread manually for each structure meant that it was not always possible to create an exactly uniform structure, and I found this mildly frustrating. However, the mass of individual structures means that individual flaws are less noticeable. Overall, I was satisfied with the piece, but it made me re-evaluated how to make the next piece as the construction of this bodice was probably overly difficult. I earnestly used a traditional embroidery frame to work on, embellishing directly onto the flat fabric, but the end result was no different than if I had applied pre-



constructed individual tensegrity structures made on a smaller (16-19cm diameter) and more manageable ring-frame to a (almost) finished garment.

The tensegrity structures can be termed ‘‘hard’ proxemic embellishments’. The term ‘‘hard’ proxemic embellishments’ was first introduced in Chapter 3, the second part of this study’s contextual review. It refers to the choice of materials used for the structure and the outcome of the embellishment. In Chapter 3, I cite examples by Noir Kei Ninomiya (see Chapter 2, figs. 3.29-3.31), Iris van Herpen (figs. 3.32-3.37). *The Arnhem Bodice* uses a version of the tensegrity technique to produce a mass of sequin structures that are held rigid through the tension of the thread. They do not move easily and the edges of the sequins projecting outwards do not invite approach. However, unlike the examples cited in Chapter 3, *The Arnhem Bodice* uses more conventional (and traditional) components for embellishment; sequins and thread.

Judged against the criteria I set out in the Methodology, I have already established that the technique can be applied to fabric and that it is stable. I have now demonstrated that it can be applied to the body through the garment as a carrier. This is a new technique for embellishment employing tensegrity and embodying the stereometric method. Notions of body and space are embodied through this practice and will be discussed further in the next chapter. Videos of *The Arnhem Bodice* can be viewed on YouTube: Video 6: *The Arnhem Bodice* <https://youtube.com/shorts/ykSFUKWA-8o>; Video 7: *The Arnhem Bodice (Closer)* <https://youtube.com/shorts/S5p0q27hWdQ>; Video 8: *The Arnhem Bodice (Rotation)* <https://youtube.com/shorts/ZK96YRblAQQ>.

Intention	Action		Reflection on <i>The Arnhem Bodice</i>
1		✓	<i>The Arnhem Bodice</i> ; proxemic space is being explored through the application of the tensegrity technique to the body via the garment as a carrier (4, 5 & 6). The structures supplement the fabric and build out to space (7). However, the iterations of the same form do not allow for incremental building out to space (8), but this criterion was not the intention of this garment; its purpose was to explore thinking through making and the first attempt to use the tensegrity technique on a finished garment. In this respect, the finished garment, like the toile, is successful.
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.



Figs. 5.66-5.69 The finished *Arnhem Bodice*. Photographs © Richard Sorger.



Figs. 5.70-5.73 The finished *Arnhem Bodice*. Photographs © Richard Sorger. Model: Hannah Martin.

## Ergon and parergon

In the last chapter, I used Derrida's theory of supplementarity (the supplement is something added to complete a thing or to make up for a deficiency) to discuss what

happens to fabric when embellishment is added to it. The tensegrity technique for embellishment (first discussed in Chapter 1), when applied to the body, further complicates theory; through the use of the stereometric method (see Chapter 1), the tensegrity technique makes visible the implied volumes of proxemic (intimate) space. However, In the next section I return to Derrida to problematise these stereometric volumes. Soper asks where the body ends, and clothing begins? (Soper, 2001: 13-32) and Barnard suggests that there is no natural point where this happens (Barnard, 2014: 112). I extend these arguments to ask where does the body/garment end and proxemic space begin by engaging with Derrida's notions of 'ergon' and 'parergon' and this will then lead onto K. Malcolm Richards' 'parergonal space' and how can embellishment act as the interface between the body/garment and the space beyond.

Derrida discusses 'ergon' and 'parergon' in the essay *The Parergon* (1979) and in his book *The Truth in Painting* (1987). Derrida is contextualising the German philosopher Immanuel Kant's (1724-1804) notions of 'ergon' and 'parergon', but for the purposes of this section I will focus on Derrida's discussion.

Derrida's evocative analogy is that of the frame around a picture; the picture or artwork (the 'ergon') is supplemented by the frame (the 'parergon') raising question about whether the frame is part of the artwork, or the separation between the art and space/viewer; is the frame a part of the painting or is it a part of the wall? Another complex analogy Derrida makes is that of the faux drapery on a classical sculpture, which although becomes relatable to themes of fashion and clothing, is further complicated that both the body and the drapery in these sculptures are representations of the body and drapery. What is represented in these sculptures is the nude and Derrida writes that the drapery is the supplement to this representation of the nude form in the sculpture; that the 'nude' can only exist because it is *draped* which leads us to consider the relationship between clothing and the body. Derrida also briefly raised the question; is all clothing parergon? Does it 'frame' the body? Here, the parergon occupies a conceptually liminal space; neither of the work itself, nor is it separate from the work, it is 'a hybrid of inside and outside' (Derrida, 1987: 63).

So, Derrida proposes the supplement; ergon (the artwork) and parergon (the frame) are separate, but the supplement is the glue that binds them together and allows the integration of the two. The artwork lacks the context of the frame, and the frame lacks the artwork. So, if the garment is the parergon to the body's ergon, it can be extrapolated that embellishment is the supplement to the parergon and body, garment and embellishment become inseparable and one. This affirms the discussion by Gautier in 1872, Entwistle (2000), and Barnard (2014) about the inseparability of the body and garment, discussed earlier in this chapter.

However, this argument can be developed further, returning to Derrida's example of the painting and the frame. Is the frame part of the painting or is it a part of the wall upon which the painting (and frame) is hung? Derrida argues that the frame is a part of the painting when the viewer is looking at the wall, but the frame is part of the wall when looking at the painting. So, the parergon creates a framework that contextualises what is being framed; embellishment creates a framework to the body and garment, and recontextualises it. However, the frame provides a liminal space, it separates the 'inside' from the 'outside' but it is ambiguous as to which it belongs. This is the space that the tensegrity technique inhabits when part of the body/garment interface; a liminal space referred to as 'parergonal space' and this is discussed below.

## **Parergonal space**

The artist and academic K. Malcolm Richards extrapolates the notion of the parergon and writes about 'parergonal space' (Richards, 2008: 38); 'space that resists any simple ordering by the opposition of inside or outside', suggesting the parergon occupies a liminal space; neither one thing nor the other. This is an ambiguous space, not unlike ma and mu, however, ma and mu occupy the space between the body and garment, whereas parergonal space, as defined by Richards, relates to notions of inside and outside.

I argue that the notion of liminal 'parergonal space' can be compared to Naum Gabo's sculptural stereometric method. When viewing Gabo's *Two Cubes (Demonstrating the Stereometrics Method)* (1930) (see Chapter 1, fig. 1.17), it can be argued that the volume of the cube on the right is no longer inside but also not fully outside as it is 'tethered' by

the sides of the cube; it can be viewed as liminal and referring back to Richards 'resists any simple ordering by the opposition of inside or outside' (Ibid., 38). It is this liminal, proxemic, space surrounding the body that my practice embodies through the use of the tensegrity technique and the stereometric method (as can be seen in *The Arnhem Bodice* below, figs, 5.66-5.73), and it can be argued that embellishment is both body and garment as well as belonging to proxemic space; it is neither 'inside' the volume of the body supplemented by spatial embellishment, nor is it part of external space.

Derrida states that the frame is a border (Derrida and Owens, 1979: 24), the 'outer limit' (Ibid., 24) of the artwork, but also of the wall the artwork is hung on (the 'inner limit' of the wall (Ibid., 26)). Border is another word for boundary and as discussed earlier in this chapter, clothing is the boundary between our bodies and the experiential world (Entwistle, 200: 334). But this 'parergonal boundary' is porous and ambiguous (Sara & Littlefield, 2014: 299), neither part of the body or part of the surrounding space. The tensegrity technique extends the body's boundaries through embellishment and its stereometric volumes are the parergonal space that frame the body/garment.

Parergonal space, like *ma*, is a spatial theory, and it is included here in this chapter, which is primarily concerned with the body, rather than in the next chapter, which is concerned with space, because it contributes to discussions about the intersection between body/garment and embellishment and the boundaries of the body. In the next chapter, I discuss what happens beyond the 'porous or ambiguous (body) edge' (Ibid., 2014: 299) boundary of the body/garment, embellishment, and their interaction with space.

## Conclusion

In this chapter, I have discussed the difference between fashion and dress and how both are essential to our cultural identities. Entwistle views dress as an adornment added to the body whereas Barnard argues that body and dress, are inseparable and the body is not complete until it has been dressed in some manner. Only then can it exist in a cultural landscape. I have further complicated their arguments with embellishment. The body and garment can be viewed as inseparable, and this means that embellishment is also inseparable from the body and garment; they can be viewed as 'fused together'. Dress

and fashion are needed to situate our bodies in culture and society, essential to our identities and as tools and prosthetics, they supplement the body. I argue that when embellishment is used it is also inseparable from the intersection of body/garment, and as such it can also be a prosthetic that makes the (human) body possible.

The garment can be viewed as a boundary between body and space. The application of the tensegrity technique on to the body/garment extends the boundary of the body. The practice I discuss in this chapter applies the tensegrity technique onto the body for the first time and discusses the making *The Arnhem Toile* and *The Arnhem Bodice* when I fully realised how this new technique can create a proxemic silhouette, making visible the space beyond the 'traditional' unembellished surface of body/garment. However, parergonal space complicates the 'ownership' of these stereometric volumes; are they part of the garment or are they a part on the intimate proxemic space? The tensegrity structures are tethered to the body/garment and as such embellishment is part of the body and this indicates ownership. However, the stereometric volumes between the structures are not fixed but essential to the work and there is some ambiguity about these volumes- are they of the body or of space? These stereometric volumes belong to both body and space, and yet neither and they contribute to the parergonal nature of the tensegrity technique when applied to the garment, reinforcing the notion that embellishment in this case is the interface between the body and space.

In the next chapter, I discuss spatial theories and I explore how the boundary of the body can be extended further into proxemic space through my practice and how embellishment has the potential to enable the negotiation of space around (and on) the body.

# Chapter 6: BODY out to SPACE

## Introduction

In this Chapter, I focus on the relationship between the body/garment<sup>29</sup> out to space. In Chapter 4, I discuss the application of practice to fabric and what it means. In Chapter 5 I discuss what happens when fabric and embellishment are applied onto the body. It is now necessary to discuss the relationship between the body and space and how the embellishment as part of the body (or at least an extension of the body) interacts with this proxemic space. I will establish what is meant by space and then discuss our embodied relationship with it.

All the practice for this study has employed the sculptural tools of tensegrity and the stereometric method to first build volume onto the surface of the fabric and then the body/garment. In this chapter I discuss the final developments of practice for this study, of which there are many, in what proved to be a very fertile period between 26.10.20 and 15.10.21. The initial work introduced here was in the pursuit of proxemic height; how far can I build from the surface of the fabric 'out to space', considering through reflection in the RDJ what potential applications (if any) they might have on the body. I then move on to the development of new tensegrity structures and how they are applied to the final outcome of this project; *The Eclipse Dress*, completed on 15.10.21.

Theoretically, in this chapter I move beyond the surface, or boundary, of body/garment and out to the space immediately surrounding it. I explain notions of territories, both physical and imagined, in relation to space beyond the body/garment and the aspects of proxemics that are key for this study; intimate and personal distance. I discuss and conceptualise what is meant by 'space' drawing on the writing of social scientist and geographer Doreen Massey as a starting point before discussing and contextualising proxemics in more depth and how they are navigated.

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<sup>29</sup> I have established that the body and garment can be viewed as inseparable and fused together conceptually (see Chapter 5). However, in this chapter is necessary to use the terms 'body/garment' (as fused together), and 'body' and 'garment' (as separate objects), when discussing spatial theory, which is more concerned with bodies and ignores garments and clothing in general.



## Practice: Body out to space

The practice I describe in this chapter builds towards taller proxemic tensegrity structures that will ultimately be applied to the body/garment and these will supplement the silhouette, make visible and therefore increase the intimate proxemic space of the wearer.

The practice described here follows a chronological order, building to the realisation and completion of *The Eclipse Dress*. It describes my line of investigation during this year long period; beginning with the attempt to build taller tensegrity structures, the re-introduction of beads to the practice, through to the use and development of new sequins and components. The discussion of new materiality might appear to have a more natural fit in Chapter 4 where I discuss the materiality of my practice, but the inclusion here contributes to the chronological narrative of the practice and the material development was essential to the development of the final work.

Writing in the RDJ on 26.10.20, the first new practice since 14.09.19, I was uncertain what I wanted to achieve with my new practice. So rather than over think it, I decided to just make something with more insertions than previously as a point of difference, re-learning how to make with the tensegrity technique (see Chapter 1 for the description of the basic technique), and to see if this line of investigation would lead somewhere. Although I didn't know what form my first experiment would take, one important topic for exploration in my new practice was how tall can I build a structure? So, the practice I describe next is concerned with further extending out to space. The individual structures for *The Arnhem Bodice* extend 12.5cm from the surface of the body/garment out to the intimate proxemic space that surrounds the body. Intimate proxemic space as defined by Edward T. Hall is 0-45cm and while it might not be possible to extend embellishment beyond intimate space and into (proxemic) personal space (0.45cm-120cm) it is possible to extend further than in my previous experiments.

October and November 2020 (figs. 6.2-6.31), and then February and March 2021 (figs. 6.32-6.55), were both productive periods in terms of practice. The structures I produced during October and November 2020 and February 2021 were interesting but ultimately

frustrating as I could not visualise their application to the body in an aesthetically success manner. As individual structures on base fabric they were interesting and complex forms, but this interesting complexity is what hindered their application to the body.

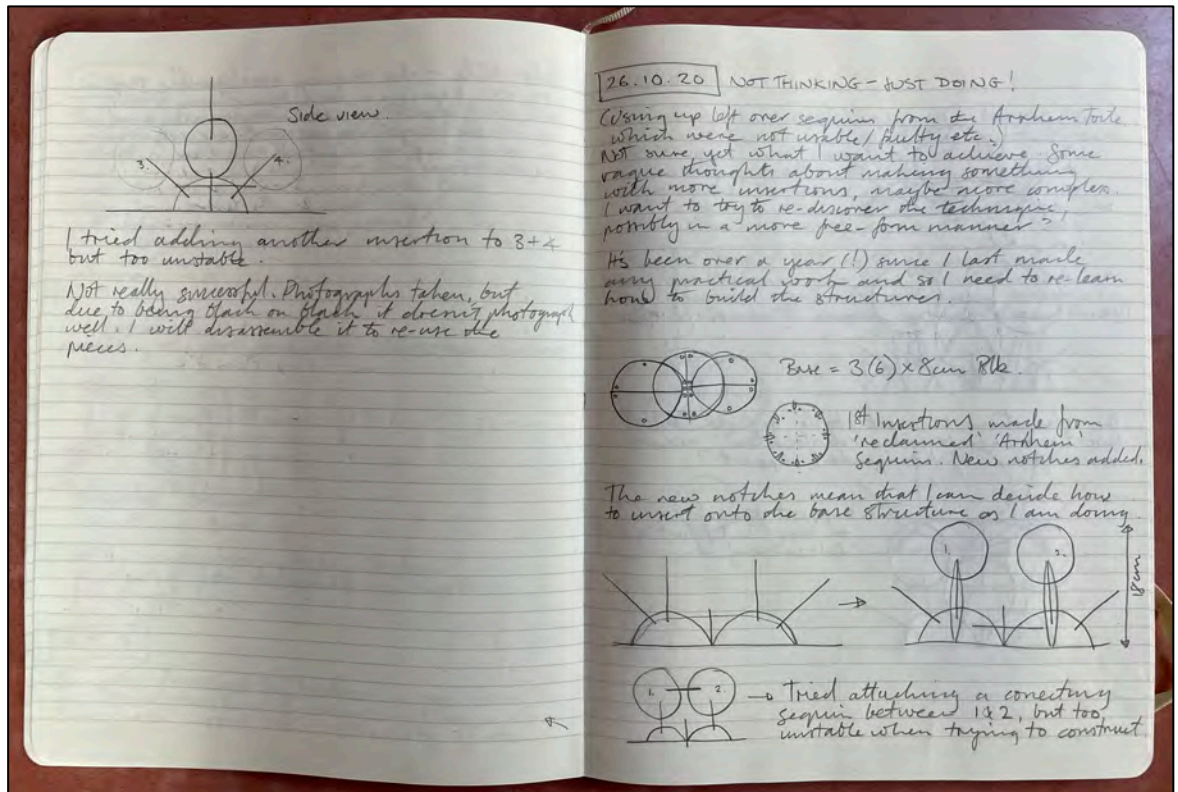


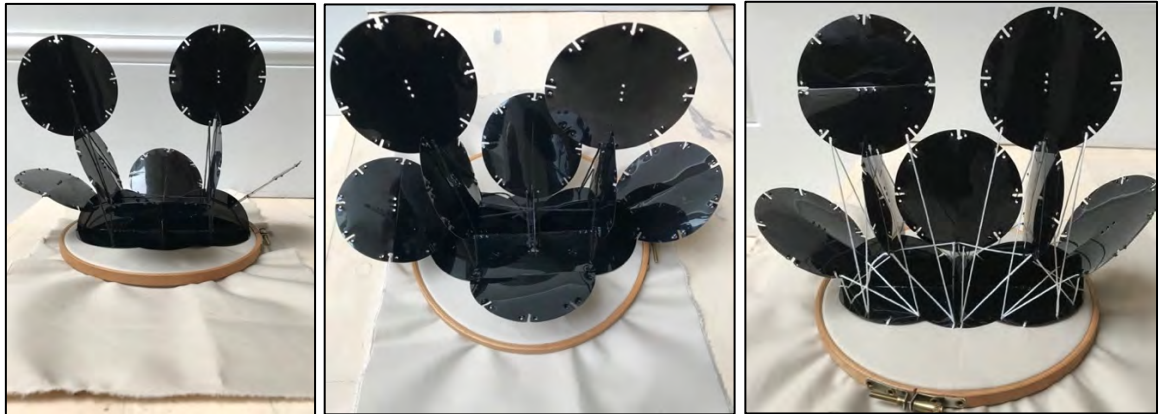
Fig. 6.1 RDJ (26.10.20). Photograph © Richard Sorger.

## Building tensegrity structures using longer threads

For a while I had been keeping a box of unusable sequins for use later. 'Unusable' sequins are those that can no longer be used for finished pieces; sequins that I pierced or notched incorrectly, or that were too bent or curved, or ones that become unusable through the process of supergluing them together (to aid stability) as they become brittle. These are the sequins that I attempted to use up in my first new experiments to reduce waste.

For the first new experiment, I used three pairs of sequins, folded in half and glued together, and these were grafted onto the base fabric (as in my earlier practice, I used a beige cotton drill fabric), and the 1<sup>st</sup> insertions were added to this, five in total. Onto three of the 1<sup>st</sup> insertions, three more 2<sup>nd</sup> insertions sequins were added onto the structure, supported by cotton embroidery thread. The sequins were all black and the

thread is also black, and due to being black on black it does not photograph very well (see figs. 6.2-6.3).



Figs. 6.2-6.3 Tensegrity experiment (26.10.20). Notches and pierced holes can be seen around the edges of the sequins. This is because they are recycled from previous experiments and unusable for finished pieces. They are being used here to reduce waste. 80mm black plastic sequins, black cotton thread, cotton fabric. Photographs © Richard Sorger.

Fig. 6.4 Tensegrity experiment from (27.10.20). 80mm black plastic sequins, white cotton thread, cotton fabric. Photograph © Richard Sorger.

I tried adding 2<sup>nd</sup> insertions to the furthest left and right 1<sup>st</sup> insertion sequins (the sequins furthest to the left and right of fig. 6.3), but due to the approximate 45° angle of the sequins, the thread and sequins are unable to support a 2<sup>nd</sup> insertion; the thread is too acutely diagonal, and the thread and tension works best when at less of an angle and more vertical than horizontal.

The structure is 18 cm tall, already taller than the 12.5cm structures used on *The Arnhem Bodice* (see Chapter 5), but because the threads are too long between the anchor points in the base sequins (and fabric) and the insertions, creating a uniform tension is difficult, if not impossible. The whole structure is lopsided and frustrating in that it refuses to be symmetrical and perfect. I disassembled it to reuse the sequins for something (hopefully) more successful in terms of creating a more symmetrical tensegrity structure with a more uniform tension.

The instability of the previous structure was caused by the length and lack of tension in the supporting threads. One possible solution to this issue could be adding further supporting threads to each insertion at wider points on the diameter of the sequins. So I rebuilt a version of the structure from 26.10.21 the next day 27.10.20, with more

anchoring threads in white cotton, and although the structure had slightly more stability, it was still less stable and symmetrical than desired; the two 2<sup>nd</sup> insertions could become 'dislocated' from their notches in the 1<sup>st</sup> insertions (see fig. 6.4). In an attempt to prevent this 'dislocation' I added further support threads between the 1<sup>st</sup> and 2<sup>nd</sup> insertions, the first time I used thread that does not originate from the base fabric, but the result is still less than perfect (see RDJ pages fig. 6.5). This was again due to the length of the threads, 11cm at their longest, and the inability to create a stable anchoring tension between base and insertions. Snelson's tensegrity structures use wire cable to enable the tension (see Chapter 1, figs. 1.18-1.20). Using thread is less reliable in terms of creating a long 'line' (thread) of tension and through this investigation it became apparent that there was a limit to how long threads could be useful in building tensegrity structures.

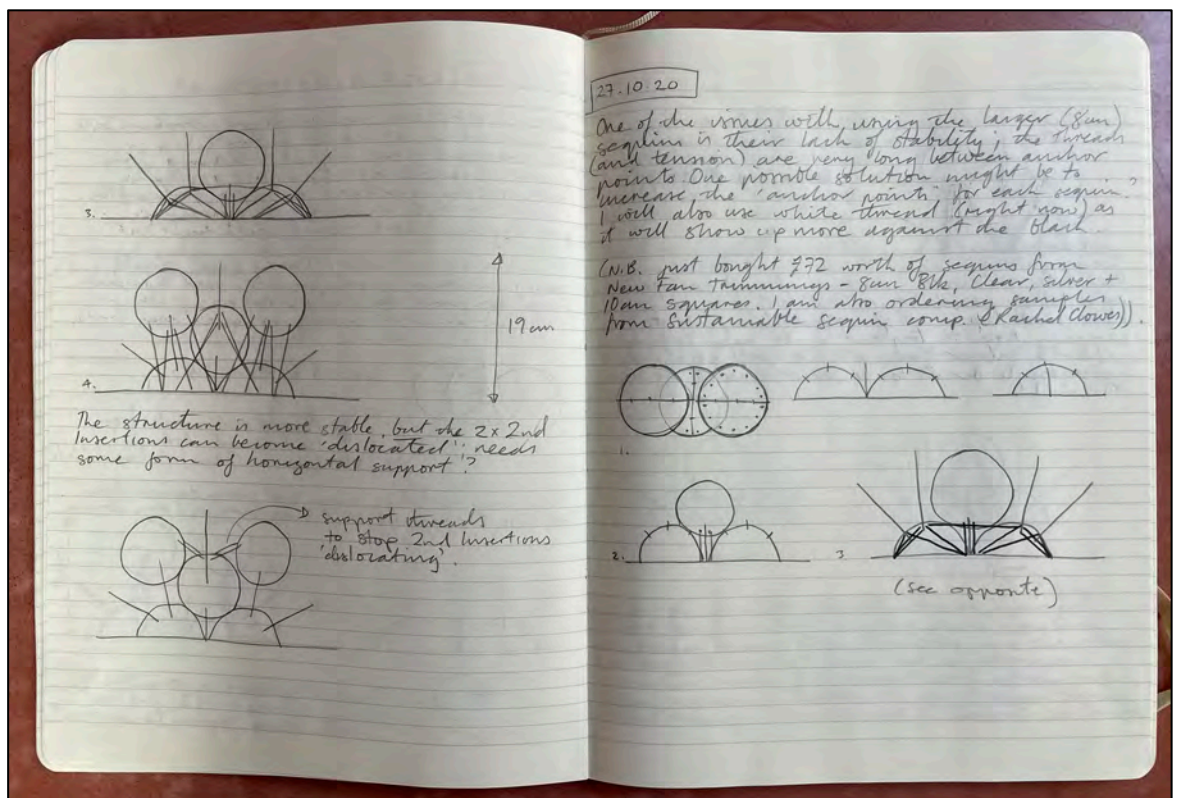


Fig. 6.5 RDJ (27.10.20). Photograph © Richard Sorger.

The instability and lack of tension in the use of longer threads was inhibiting my ability to create taller structures. The addition of extra threads and anchor points began to make the construction of these structure very complicated; threads were beginning to weave in and out of each other in a complicated manner, making the construction difficult, as well as conflicting with other sequins in the structure. The addition of extra threads and

anchor points made the 1<sup>st</sup> insertions very stable, but beyond this they did not create enough stability in further insertions.

Referring to how I will evaluate my practice if successful in *Chapter 1: Methodology*, these experiments made between 26.10.20 to 27.10.20 did not meet the requirement of structural stability meaning that it would not be successful when applied to the body through the garment as a carrier. This meant that I needed to review this line of exploration and consider how to make the structure more stable. A new approach will be discussed in the next section.

Intention	Action		Reflection on tensegrity experiment (26.10.20)
1		✓	Tensegrity experiment (26.10.20); due to the scale of the components and the length of the tethering threads used for this structure, stability was not possible (3). This also meant that criteria 7 and 8 were also not possible. Criteria 4 and 6 are not applicable here because the structure lacks the potential application to the body because of its limitations.
2		✓	
3		✗	
4		N/A	
	5	✓	
	6	N/A	
	7	✗	
	8	✗	

Intention	Action		Reflection on the recreation of the experiment from 26.10.20
1		✓	This recreation of the experiment from 26.10.20 introduced beads into its structure which greatly improved the stability. This structural stability enabled criteria 7 and 8, which were not possible in the previous experiment.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## The tensegrity technique using ‘beads’

At this point in my practice, I returned to the use of bugle beads, however, in terms of bugle beads it is difficult, if not impossible, to find ‘true’ bugle beads longer than 3.5cm. By ‘true’ I mean components that are actual bugle beads and are intended for the use on embellishments. These bugle beads also tend to be glass which makes them heavier the longer they become. Glass also means that their length cannot be adjusted (cut) easily.

So reluctantly I sourced plastic straws to use as bugle beads because they come in longer lengths, are lightweight and their length can easily be adjusted using scissors. However, it is still quite difficult to purchase the 'right' kind of straw; it is not only about length but width, 2-4mm being an ideal width for my uses. Many longer straws are at least 5mm in width and that makes them look more obviously like straws as well as meaning they are less precise when used for construction; the thread has more room to move within the diameter of the tube.

Craft straws are plastic straws that are commonly used for model making. These tend to be made from a harder plastic and so they are not so easily cut with scissors to adjust their length. They are also more expensive and harder to source. However, they are potentially longer and narrower (255mm x 3mm) than the straws sourced so far.

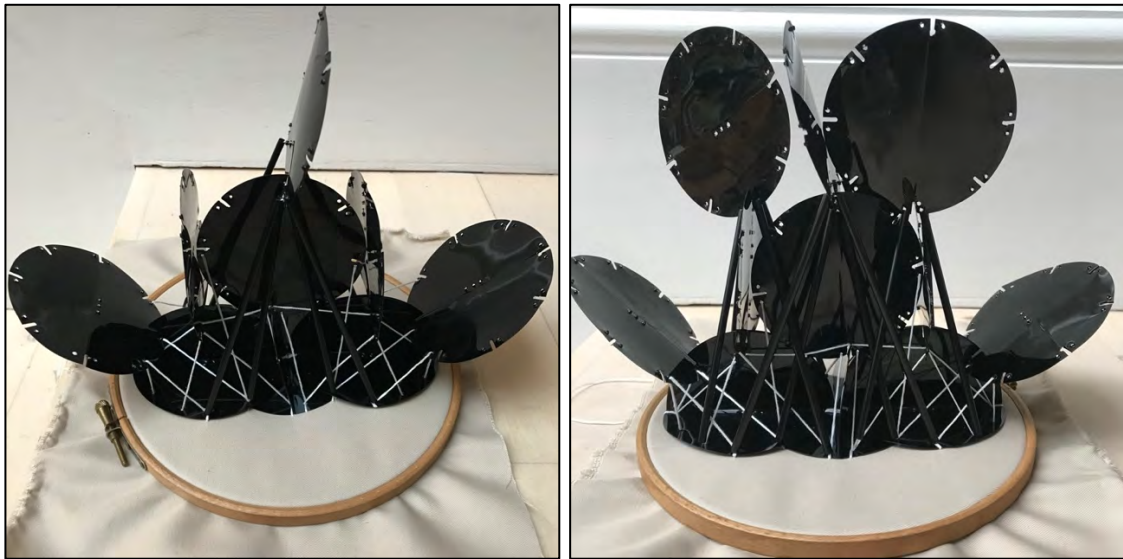
Paper and bamboo straws tend to be too wide (6mm). Rice straws are potentially too temporary; if they become exposed to water or humidity they will begin to degrade.

Black cocktail straws are ideal as they tend to be only 2mm in width, but their length is limited; the ones I sourced are only 12.5cm. It should be noted that for their use in my structures, it is only possible to use one continuous straw from each anchor point; two straws threaded together do not support the tension of the thread and will buckle where they join on the thread.

I sourced white PLA straws that are 200mm x 4mm. PLA (Polylactic Acid) is a biodegradable thermoplastic made from renewable sources such as sugarcane and corn starch. Although not as long as the craft straws, they are easier to adjust in terms of length and more sustainable to use. It is worth compromising on length for the more sustainable option. However, the PLA straws are fragile and tend to split making them unreliable; breaking before, during, or after their use.

As an experiment, on 29.10.20 I returned to an earlier technique of using bugle beads to thread through (see Chapter 4, figs. 4.27, 4.42-4.43), but this time using longer beads to

create taller structures. I started with 12.5cm black plastic cocktail straws as they are lightweight and can be cut easily to any shorter length.



Figs. 6.6-6.7 Tensegrity experiments with bugle beads (29.10.20-30.10.20). 80mm black plastic sequins, 125mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

I recreated the structure from 27.10.20 but threaded through the straws/bugle beads<sup>30</sup> to support the 2<sup>nd</sup> insertions and this improved the structural stability. I was resistant to using the bugle beads, wanting the thread to be enough to support the structures, but beyond the 1<sup>st</sup> insertions this did not seem possible, especially when trying to create taller structures. However, the use of the bugles is reminiscent of Kenneth Snelson's use of tubes in his tensegrity structures (Chapter 1, fig. 1.18-1.20) and this makes their use feel more appropriate as well as necessary.

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<sup>30</sup> I will refer to the straws as bugle beads from now on. When I introduce a new type of straw to the practice for the first instance, I will refer to the type of straw, then moving forward I will refer to them as bugle beads.

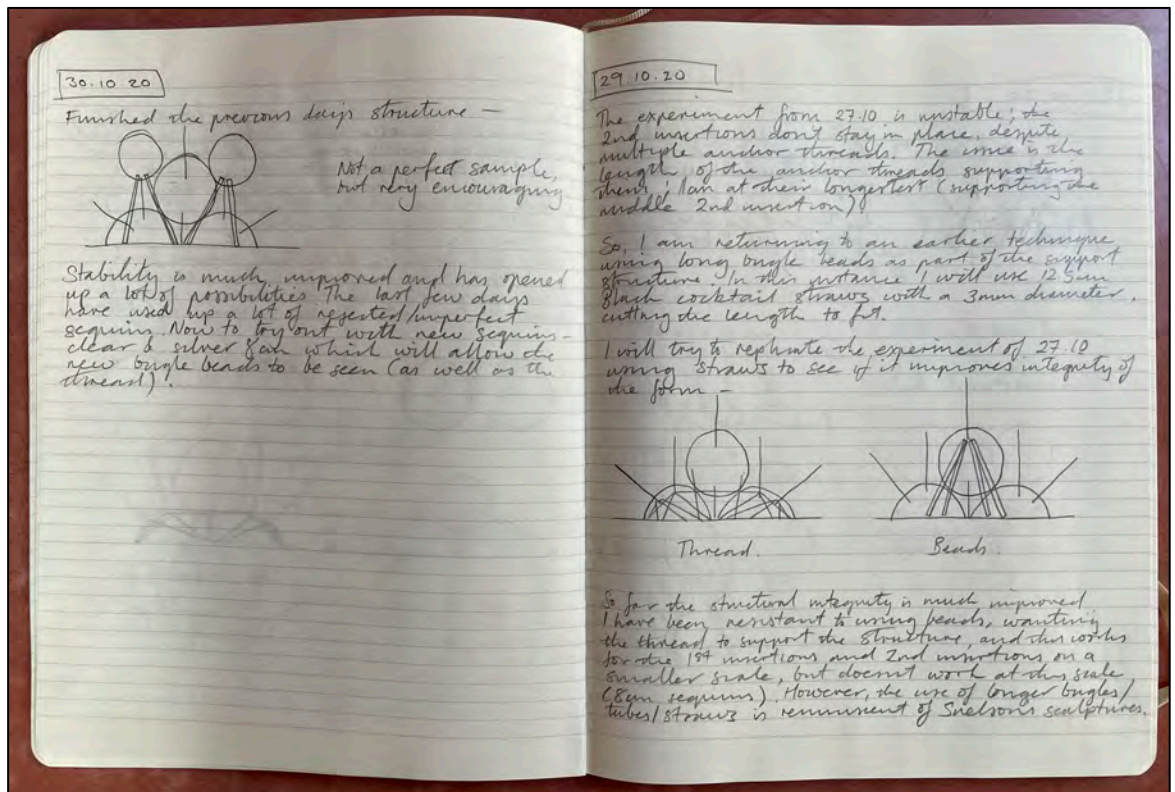


Fig. 6.8 RDJ (29.10.20 and 30.10.20). Photograph © Richard Sorger.

Intention	Action		Reflection on tensegrity experiments with bugle beads (29.10.20-30.10.20)
1		✓	Tensegrity experiments with bugle beads (29.10.20-30.10.20); the reintroduction of beads into the structure which greatly improved the stability. This structural stability enabled criteria 7 and 8, which were not possible in the experiment from 26.10.20.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

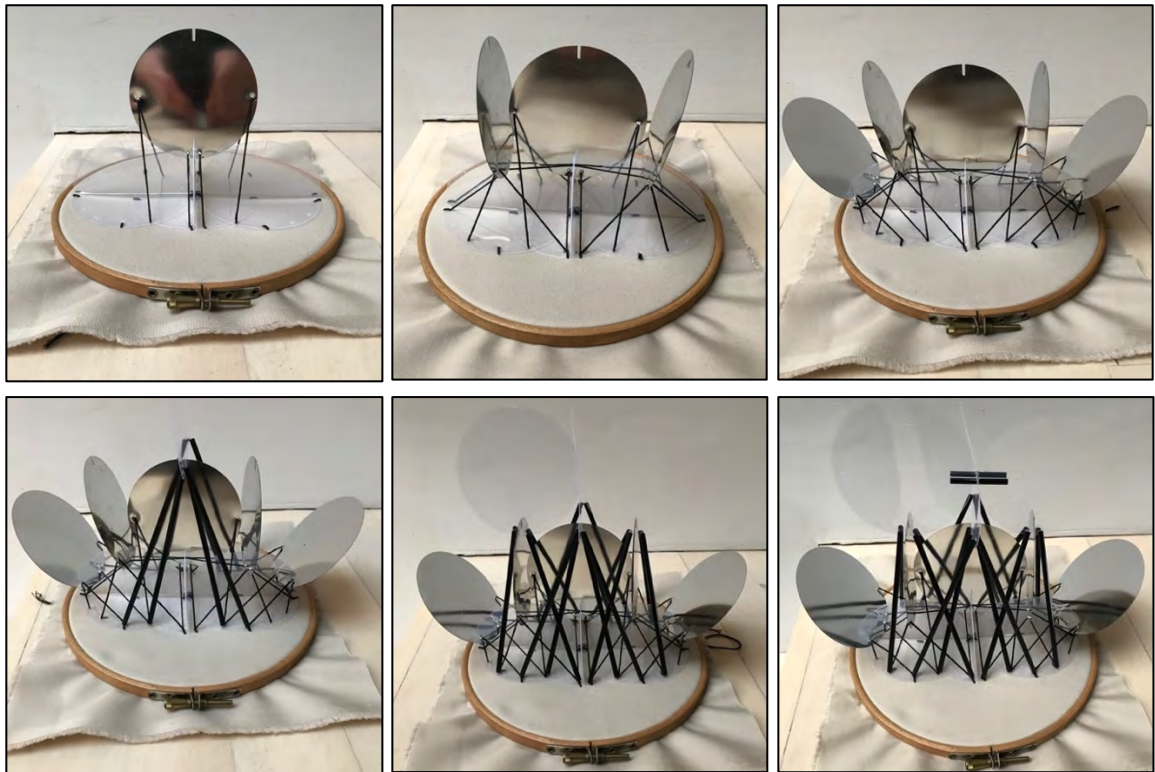
Please see page 67 for the full practice evaluation criteria.

The introduction of long bugle beads enabled taller structures and the experiments I made in this three-day period used up a lot of my 'unusable' sequins. Moving forward I returned to the use of 'new' sequins in black, silver, and clear plastic as these made the black bugle beads more visible through a contrast of colour.

The previous structure from 29.10.20 was recreated on the following days, 30.10.20 to 31.10.20, from new sequins; clear and silver sequins instead of black, making the bugle beads and black thread more visible (see figs. 6.9-6.14 and RDJ pages fig. 6.15). The tall diagonal lines of the black bugles became more dynamic when in contrast to the silver



and clear sequins. The base sequins were clear, the 1<sup>st</sup> insertions were silver, and the 2<sup>nd</sup> insertions were clear again. Using the clear sequins at the base meant that the thread work on the other side of the base sequins' fins could be more easily seen, and the silver sequins of the 1<sup>st</sup> insertions reflected the bugles. The effect of both differences from the previous structure makes the complexity of the structure more visible and the reflection adds to this complexity, increasing the implied stereometric volume of the structure.



Figs. 6.9-6.14 The development of a tensegrity experiment (30.10.20-31.10.20). The reflective quality of the silver sequins can be clearly seen in fig. 6.9 where my hands, holding my phone/camera, can be seen. 80mm clear plastic sequins, 80mm silver plastic sequins, 125mm black plastic straws, 30mm black bugle beads, black cotton thread, cotton fabric. Photographs © Richard Sorger.

As can be seen in fig. 6.14 two 3cm black bugle beads were inserted through the central clear 2<sup>nd</sup> insertion sequin, and these bugles held in place the other two 2<sup>nd</sup> insertion sequins that were at a right angle to the central one. This added to the stability of the 2<sup>nd</sup> insertions and connected the three sequins together, but without thread. Visually, the bugles appear to be floating and untethered above the structure due to the transparency of the sequins they connect. The structure of this experiment is aesthetically interesting and successful, and the structure is stable, however it is too complicated, and the base is too wide to repeat in multiples on the body.

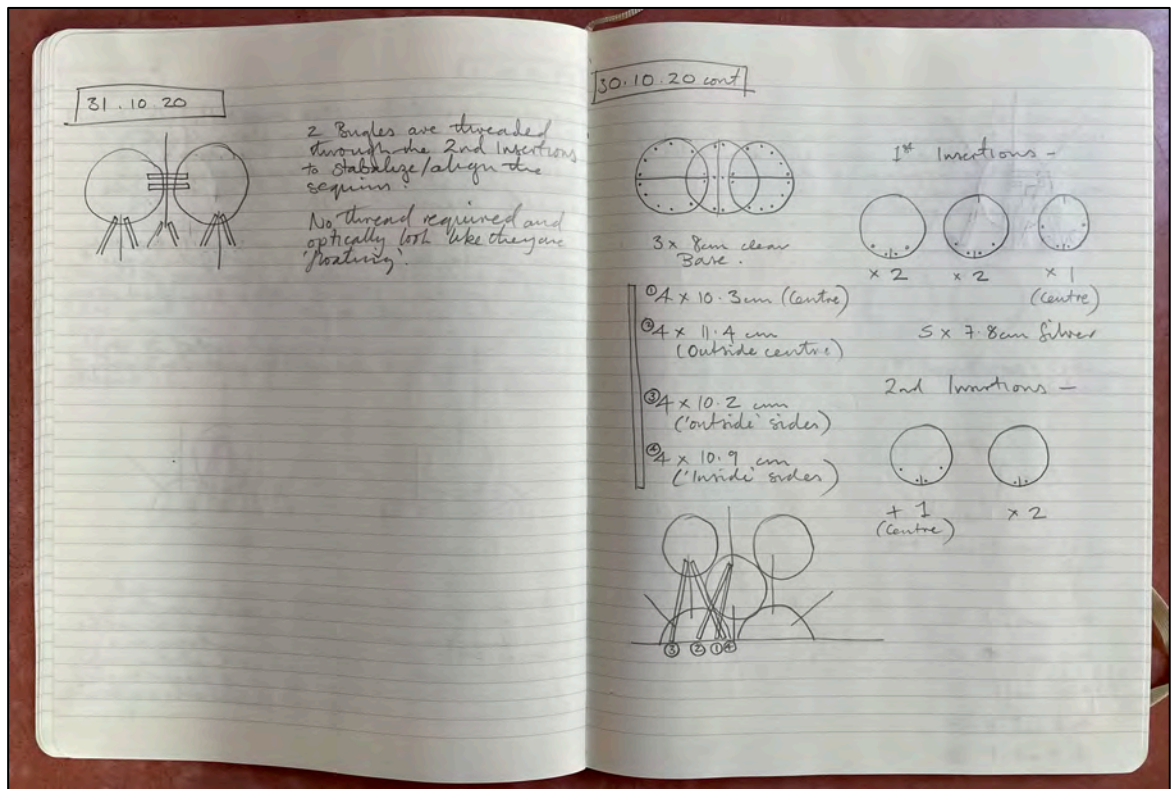
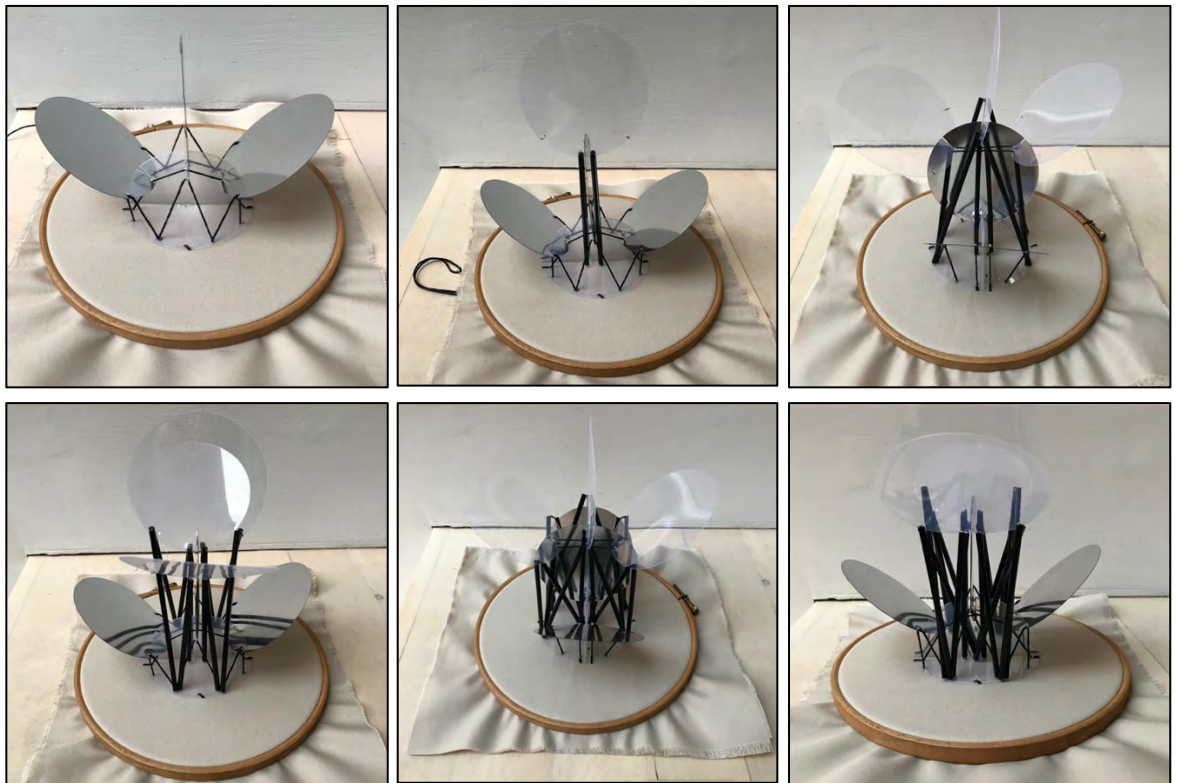


Fig. 6.15 RDJ (30.10.20 cont. and 31.10.20). Photograph © Richard Sorger.

The aim of the experiment completed on 13.11.20 was to construct something of a similar height to the previous experiment of 30.10.20 (18cm), but with only one pair of folded sequins for the base instead of three, so that it might be more easily applied to the body; multiple bases make the structure difficult to bend on the body's curves. By building a structure from one base pairing, the structure could be more easily repeated on the surface of a garment. The structure was very stable and standing at 18cm tall it was an increase of 5.5cm compared to the structure that I used on *The Arnhem Bodice* (Chapter 5, figs. 5.66-5.70). The instability of the experiments made 26.10.23 to 27.10.23 (discussed in the previous section) was addressed with the introduction of beads, however, when evaluating this experiment against the evaluation criteria in Chapter 1, it was still deemed to be too complex to repeat in multiples on the body.



Figs. 6.16-6.21 The development of a tensegrity experiment (13.11.20). 80mm clear plastic sequins, 80mm silver plastic sequins, 85-110mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

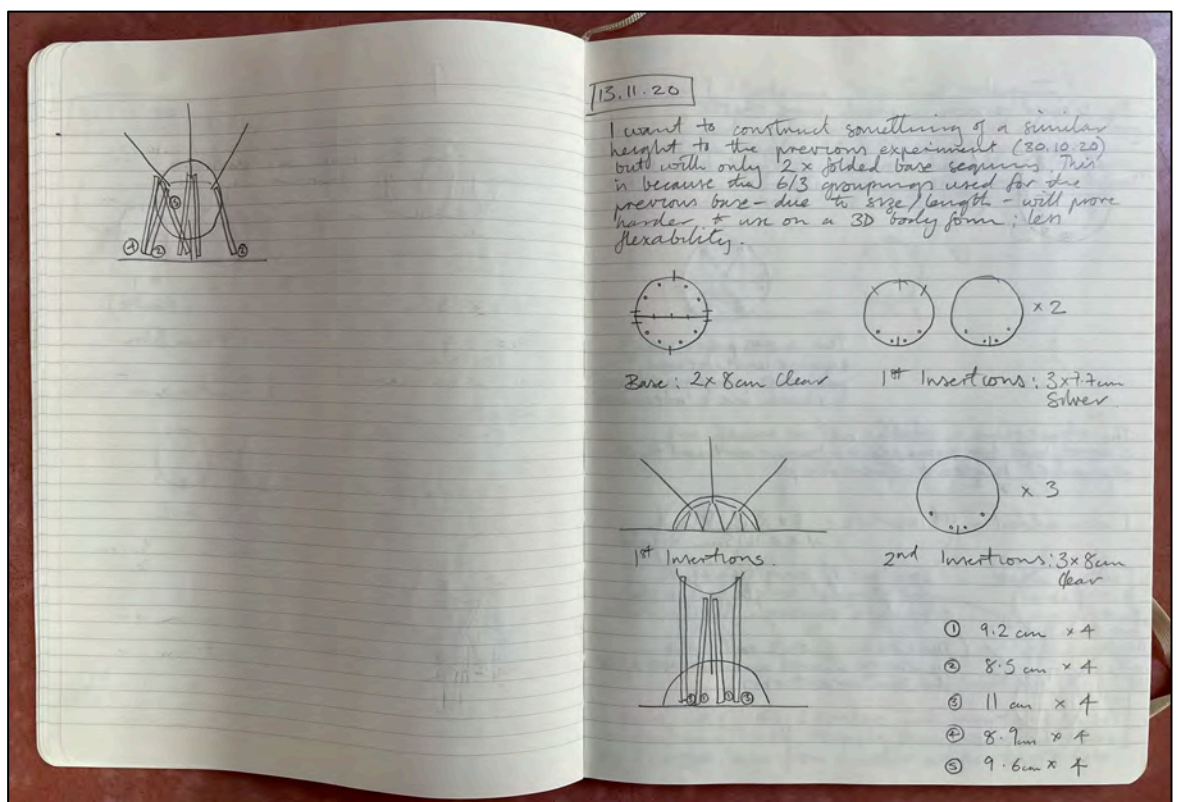


Fig. 6.22 RDJ (13.11.20). Photograph © Richard Sorger.

Intention	Action		Reflection on experiments produced 30.10.20-13.11.20
1		✓	The practice produced 30.10.20-13.11.20 (above); It is established that the tensegrity technique addresses criteria 1 and 2. The use of beads enables stability (3) that the previous experiment lacked because of the length and angle of the threads. It is also established that the technique can be applied to the fabric (5), and this experiment addresses criteria 7 & 8, creating a taller structure. However, due to the structures' complexity, they were deemed not useful or practical for the use on the body via the garment as a carrier (6). Due to this complexity, criterion 4 was not applicable here.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✗	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## Building taller tensegrity structures

The issue of structural complexity became a pressing issue when evaluating the success of the experiment as it would potentially make the application of the structure to the garment difficult. The use of multiples of the same structure would also multiply this complexity across the garment. The experiments in this section discuss the attempt to create taller structures using longer bugle beads (craft and PLA straws in white) that, if successful, build further out to Hall's intimate proxemic space surrounding the garment and wearer (0-45cm, first discussed in Chapter 1). While it might not be possible to extend beyond intimate space (0-45cm) and out to personal space (45cm-120cm) due to the limitations of materials and the technique, it is possible to extend the embellishment further out to proxemic space than previously possible with the introduction of the new straws.

The experiment made on 14.11.20 was made in two stages; the first stage replicated the experiment from 13.11.21, but reduced the number of bugles used by eight, therefore simplifying the structure. The bugles that were eliminated from this structure were the four either side (eight in total) of the central silver 1<sup>st</sup> insertion sequin (see figs. 6. 23-6.28 and RDJ pages fig. 6.29). The structural integrity did not suffer from this reduction; it was slightly less stable than the previous experiment with more bugles, but not to the extent that it affected the stability of the whole form. The fact that it was less complex meant that it would be easier to produce as multiples, as well as visually simpler when used in multiples on a garment; a simpler structure when repeated will make the overall effect of the garment less complicated.



Figs. 6.23-6.25



Figs. 6.23-6.28 The development of a tensegrity experiment (14.11.20). This is the first stage that replicated and simplifies the experiment from the previous day. 80mm clear plastic sequins, 80mm silver plastic sequins, 95-110mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

During this experiment some adjustments had to be made in terms of where the anchor points in the base sequin and fabric came from; a wider spacing of the holes in the base sequins is more successful than when the two anchor points for a 1<sup>st</sup> insertion sequin are too close together (see RDJ pages fig. 6.29 for a diagram of the first unsuccessful attempt, on the right of the left-hand page, and the improved spacing on the top left of the left-hand page).

For the second stage of the experiment, I then added a 3<sup>rd</sup> insertion to this structure; using 16.5cm long white bugle beads (in fact two craft straws), I added an 8cm black sequin to the central clear 2<sup>nd</sup> insertion sequin. Further threads (minus bugle beads) were used to further anchor and stabilise the black sequin (see figs. 6.30-6.31). This structure is 25cm tall, stable, and has the potential to be used as multiples on a garment surface,

doubling the embellishment's extension out to intimate proxemic space compared to *The Arnhem Bodice* (12.5cm).

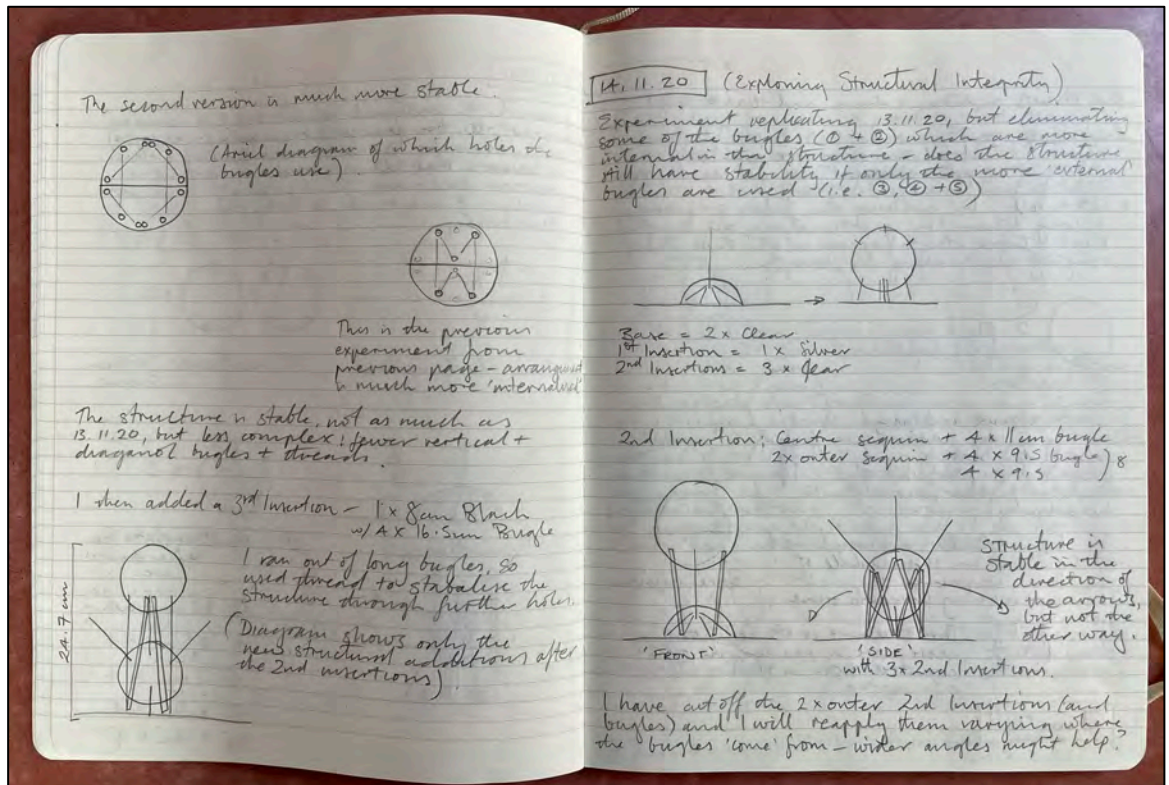
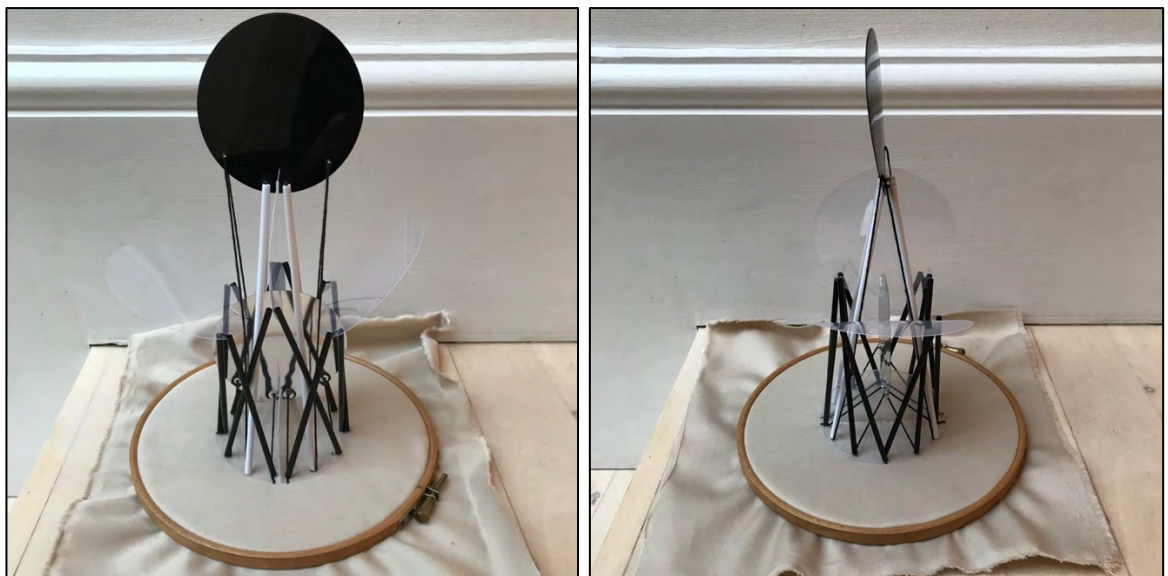


Fig. 6.29 RDJ (14.11.20). Photograph © Richard Sorger.



Figs. 6.30-6.31 Tensegrity experiment (14.11.20), height 250mm. This is the second stage of this experiment (see figs. 6.23-6.28) with the addition of four 16.5cm white bugle beads. 80mm clear plastic sequins, 80mm silver plastic sequins, 80mm black plastic sequins, 165mm white plastic straws, 95mm-110mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

Intention	Action		Reflection on tensegrity experiment (14.11.20)
1		✓	Tensegrity experiment (14.11.20) successfully meets criteria 1, 2, 3, 5, 7 and 8, and the specific aim of the experiment, to build a taller structure was also successfully met. The structure, through necessity, is complicated, but at this stage I wanted to continue to develop the form before making a decision about its potential application on the body/mannequin.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

At this point, there was a three-month break in working on my practice and I started again on 16.02.21. Whenever I return to my practice, even after a short period of time like three months, I need to reacquaint myself with the technique, how it is constructed and how it can be used.

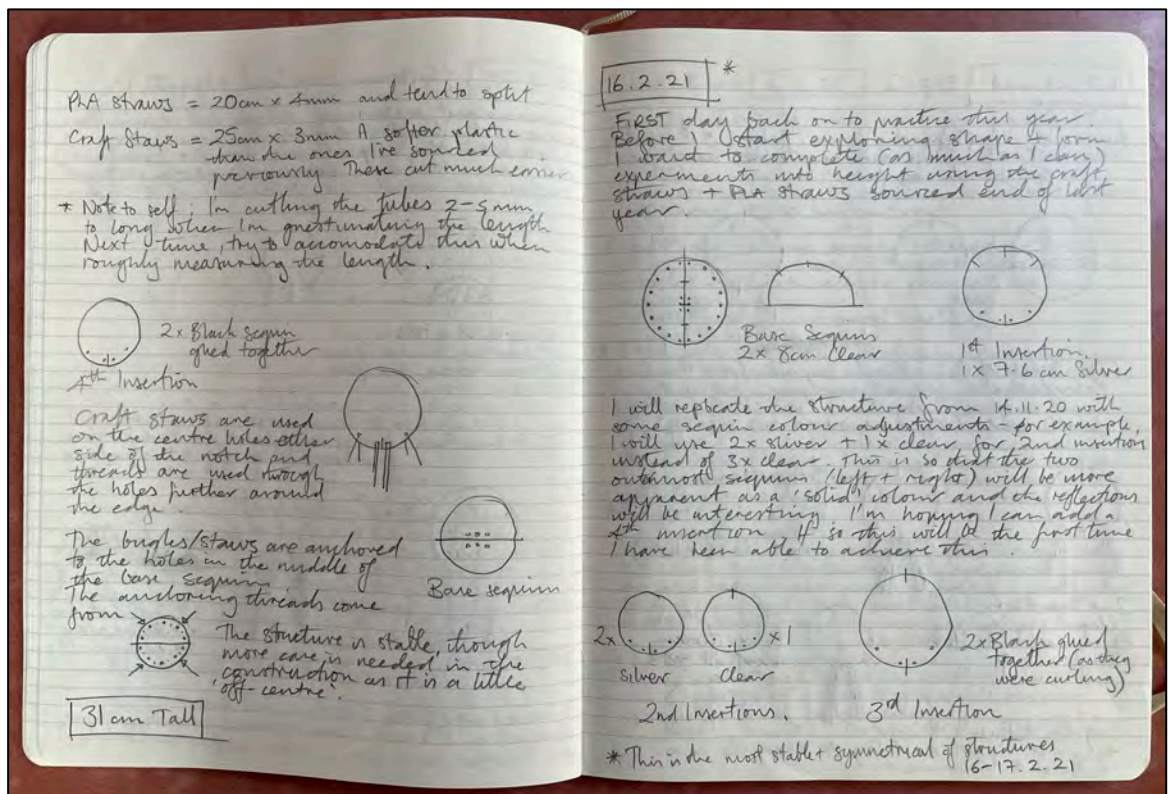


Fig. 6.32 RDJ (16.02.21). Photograph © Richard Sorger.

For the first new practice started on 16.02.21, I wanted to continue to experiment with height, achieved using bugles beads. The first experiment was a replica of 14.11.20 but the colour of some of the sequins changed for the 2<sup>nd</sup> insertions; silver, clear, silver sequins in this order, instead of three clear sequins, so that the silver sequins, either side

of the central structure are more visible (solid silver rather than transparent). The ambition for this experiment was that I can add a 4<sup>th</sup> insertion using bugles beads that maintained stability. The 4<sup>th</sup> insertion was two black sequins, glued together for practical reasons as they were curling. The 4<sup>th</sup> insertion was supported by two bugles beads at the central holes at the bottom of the sequin, and two supporting threads at holes either side (see figs. 6.33-6.35), creating a stable 31cm tall structure. Although the structure was stable, it was not possible to prevent it from listing in one direction due to the complexity and number of tethering threads, as can be seen in figs. 6.33-6.35.



Fig. 6.33-6.35 Although the structure was stable, it was not possible to prevent it from listing in one direction due to the complexity and number of tethering threads (16.02.21). 80mm clear plastic sequins, 80mm silver plastic sequins, 80mm black plastic sequins, 200-250mm white plastic straws, 95mm-110mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

However, I was challenged by how complicated this structure had become through necessity and what it would look like applied to the body via garment. According to the RDJ at the time, I recognised that the forms are very different to those used for *The Arnhem Bodice*, and this difference can at first be unsettling, but I could not visualise how this form, when applied as multiples to a garment would be successful in an aesthetic sense. This was one of the 'gut feelings' that designers often have that are difficult to articulate as to why. As individual structures, samples, of the technique, they were interesting, but when repeated on the body/garment their complexity multiplies, making the idea and the technique feel 'forced'. The tensegrity structures used on *The Arnhem Bodice* were quite simple and this enabled their successful repetition. So, although one of my aims is to use the tensegrity technique to create tall structures, I have identified another aim, or sub-aim in addition to those discussed in the introduction of this thesis;



the structure should be simple to allow it to be successfully and aesthetically applied to the body via garment.

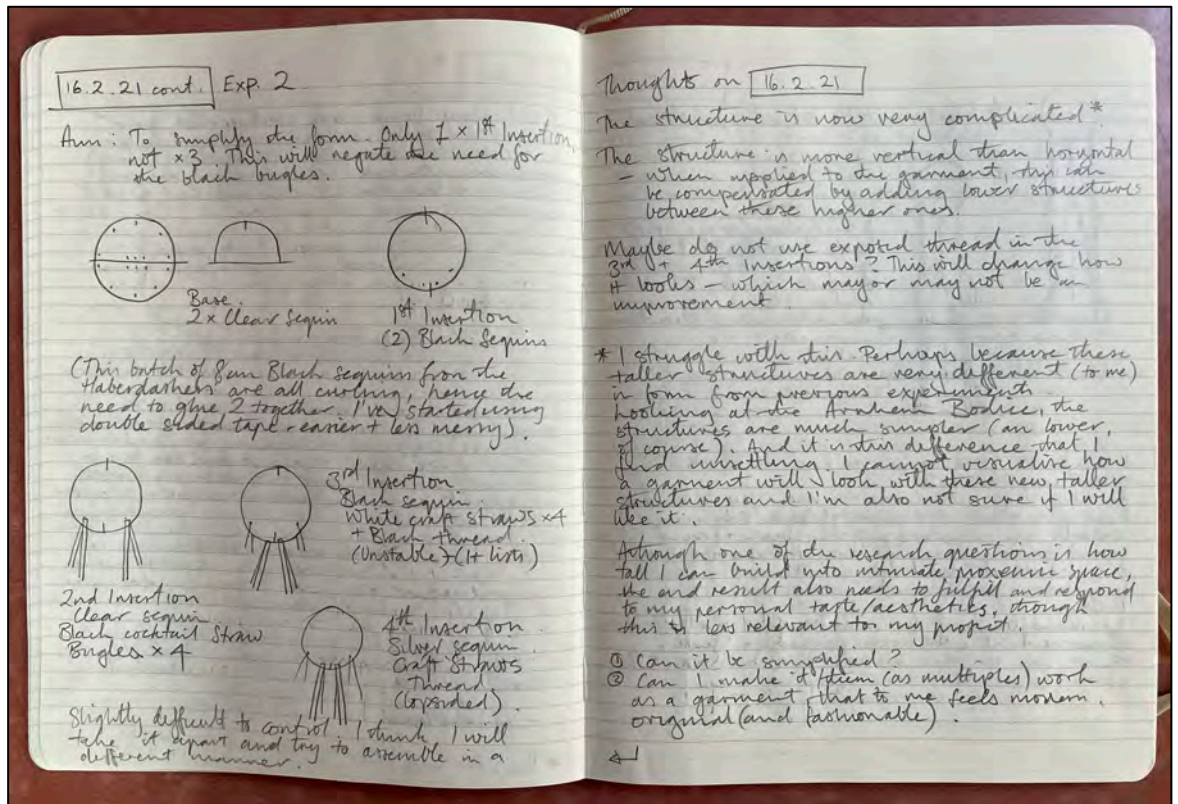


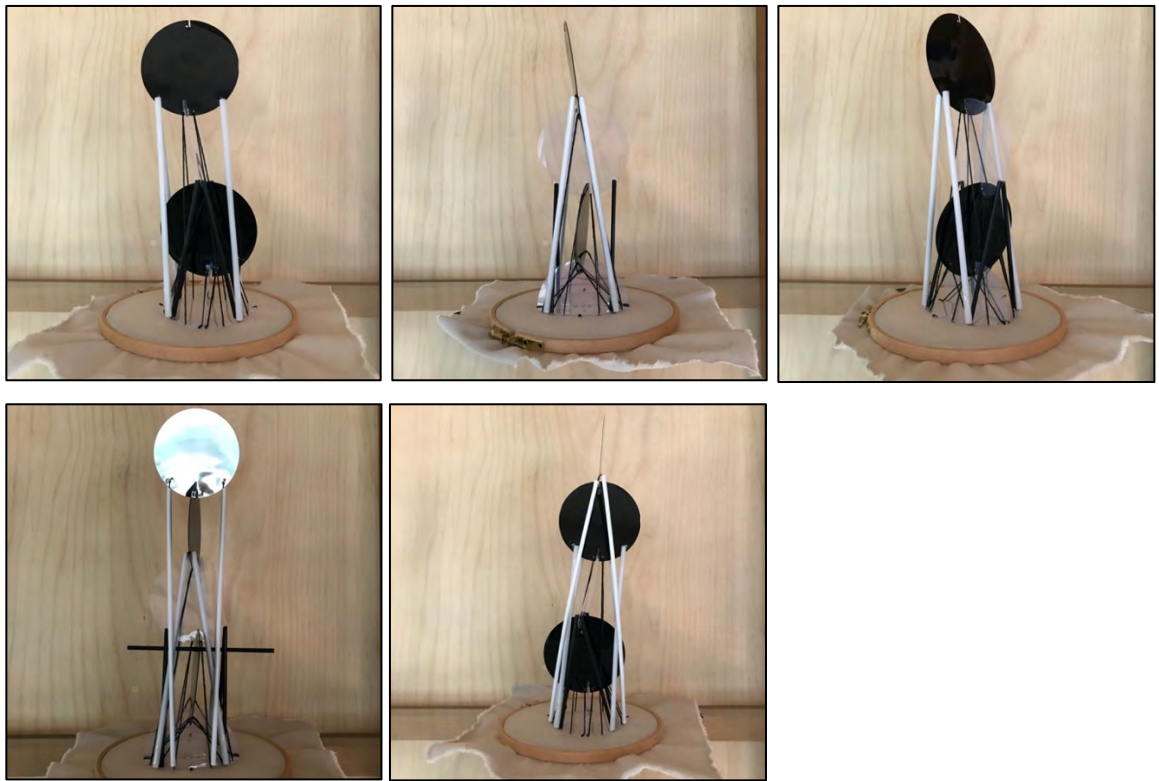
Fig. 6.36 RDJ (16.02.21 cont.). Photograph © Richard Sorger.



Figs. 6.37-6.42 *Experiment 2* (16.02.21). 80mm clear plastic sequins, 80mm black plastic sequins, 200-250mm white plastic straws, 95mm-110mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

I completed a second experiment on 16.02.21 with the aim to simplify the structure and this was achieved. I noted in the RDJ (fig. 6.36) that it was still difficult to control, and as can be seen in the previous photographs (figs. 6.37-6.42), it is still listing slightly to one side. I noted that I would try to re-assemble the structure, in a different manner.

The experiment made on 17.02.21 was a version of *Experiment 2* from the previous day (16.02.21) which had been taken apart because it wasn't successful (see previous paragraph). This time bugles beads were used in the holes to either side of the centre of the sequin, rather than the central holes themselves and this helped with the stability of the 1<sup>st</sup> and 2<sup>nd</sup> insertions. I was able to achieve a 4<sup>th</sup> insertion at a height of 31.5cm, but it lacked symmetry and the structure still listed to one side and possibly needed the support from more pairs of base sequins set further apart on the fabric as in previous experiments such as those completed between 30.10.20 To 31.10.20 (see figs. 6.9-6.14). However, this would make its use on a garment complicated in terms of placement and construction.



Figs. 6.43-6.47 Proxemic tensegrity structure (17.02.21). 80mm clear plastic sequins, 80mm black plastic sequins, 200-255mm white plastic straws, 95mm-125mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.

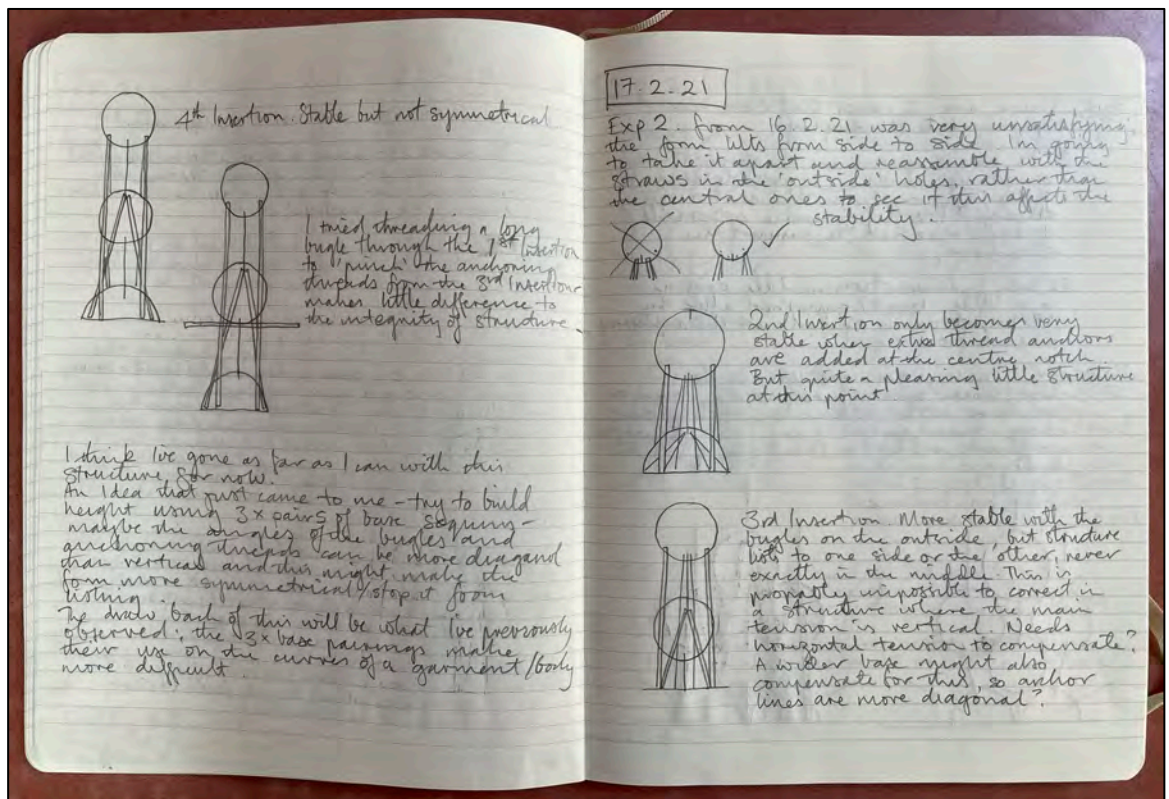


Fig. 6.48 RDJ (17.02.21). Photograph © Richard Sorger.

At this point, I decided that this was as far as I could go with this particular structure with one pair of base sequins, and I would instead revert to the three pairs of base sequins in the next experiment to see if I could make the structure more symmetrical when the supporting tension threads were able to be more angled. A wider base might enable a more stable structure as the tension threads are more diagonal (45°) rather than almost vertical. I have already mentioned that using three pairs of base sequins makes it difficult to use on the body and garment, but I was curious to see if I could make this structure more symmetrical and this experiment is described in the next section.

Intention	Action		Reflection on <i>Experiment 2</i> (16.02.21) and the second version made on 17.02.21
1		✓	<i>Experiment 2</i> (16.02.21) and the second version made on 17.02.21; The use of beads enables some stability (3), but the structures list to one side due to the difficult manipulation of tension through its construction. This practice addresses criteria 7 & 8, creating taller structures. However, due to the structures' complexity and asymmetry, they were deemed not useful or practical for the use on the body via the garment as a carrier (4 & 6).
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✗	
	7	✗	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

## Building a tall and wide tensegrity structure

The experiment completed between 19.02.21 to 23.03.21 started out as a combination of the experiments from 31.10.20 and 16.02.21. By using the black bugles threaded through the holes that are wider apart than the central ones, the structure was more stable, and I made three insertions either side of the central structure and a 4<sup>th</sup> insertion into the central one. However, there were some slight issues with the construction; it was difficult to get the tension of the threads not supported by bugles correct and the tension caused some of the sequins to curl under pressure. These issues were less visible in this structure where there was more complexity. The structure was improved; it was less vertical and more triangular. According to the RDJ at the time, I could almost<sup>31</sup> imagine working with multiples of this structure on the body. (RDJ 19.02.21-23.02.21 fig. 6.56).

<sup>31</sup> Almost, but not quite enough to pursue further.

This final structure was 30.5cm tall, but I made the decision that this was as far as I could go with this version of the tensegrity technique and this series of experiments; I could not build any taller, as longer bugles beads cannot be sourced. I observed that this version with three base sequins might have potential for use on the body, if used in conjunction with smaller or shorter structures in between that have more flexibility around the curves of the body than the above larger structure. It might also need simplifying. I decided to put these experiments to one side, to reflect on them while I made further experiments in another direction. As independent structures, they are interesting and pleasing experiments out to the proxemic space beyond the surface of the fabric, but their use on the body and garment was still in question.

In hindsight, by putting these experiments to one side I was admitting that they would not be successful when applied to the body through a carrier garment for the reasons cited above (the structures were too complicated and lacked the flexibility to work with the curves of the body) and in *The evaluation of my practice* in Chapter 1. When my practice reaches a potential 'dead-end' such as described here, then it is useful to try a completely different approach or method as a 'circuit-breaker' to a line of investigation. This may produce new, more useful work, or equally it might mean that when I return to a previous method of working, after a period of reflection, I approach it with a new perspective. This is what I did, and the former proved true; later in this chapter I describe my experiments with diverse and new sequin forms, which proved to be very useful in the development of the practice for this study.

The embellishment practice described in the chapter so far is concerned with building out to space from the surface of the base fabric and when applied to the body/garment, it has the potential to extend the boundary of the body as well as extend the personal space of the wearer. I have already introduced Hall's notions of personal space - proxemics- in Chapter 1, but the subject of space and proxemics is more complicated and nuanced than this initial discussion. In the next section I discuss space, first through the writing of social scientist and geographer Doreen Massey. Massey writes about wider social spaces, but I will then narrow my discussion to individual spaces, proxemics, territories, and allocentric and egocentric space, that my practice is concerned with.



Figs. 6.49-6.51 The first two images show bugle beads/straws and a 3<sup>rd</sup> insertion. The image on the right shows a further two 3<sup>rd</sup> insertions using bugle beads/straws (19.02.21). 80mm clear plastic sequins, 95mm-125mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.



Fig. 6.52-6.54 The first image shows bugle beads/straws and a 3<sup>rd</sup> insertion. The middle image shows a further two 3<sup>rd</sup> insertions using bugle beads/straws. The image on the right shows a 4<sup>th</sup> insertion using bugle beads/straws (23.02.21). This can be seen from a better angle in fig. 6.55 below. 80mm clear plastic sequins, 80mm black plastic sequins, 200-250mm white plastic straws, 95mm-125mm black plastic straws, black cotton thread, cotton fabric. Photographs © Richard Sorger.



Fig. 6.55 As figs. 6.52-6.54 but with a 4<sup>th</sup> insertion (23.02.21). 80mm clear plastic sequins, 80mm black plastic sequins, 200-250mm white plastic straws, 95mm-125mm black plastic straws, black cotton thread, cotton fabric. Photograph © Richard Sorger.

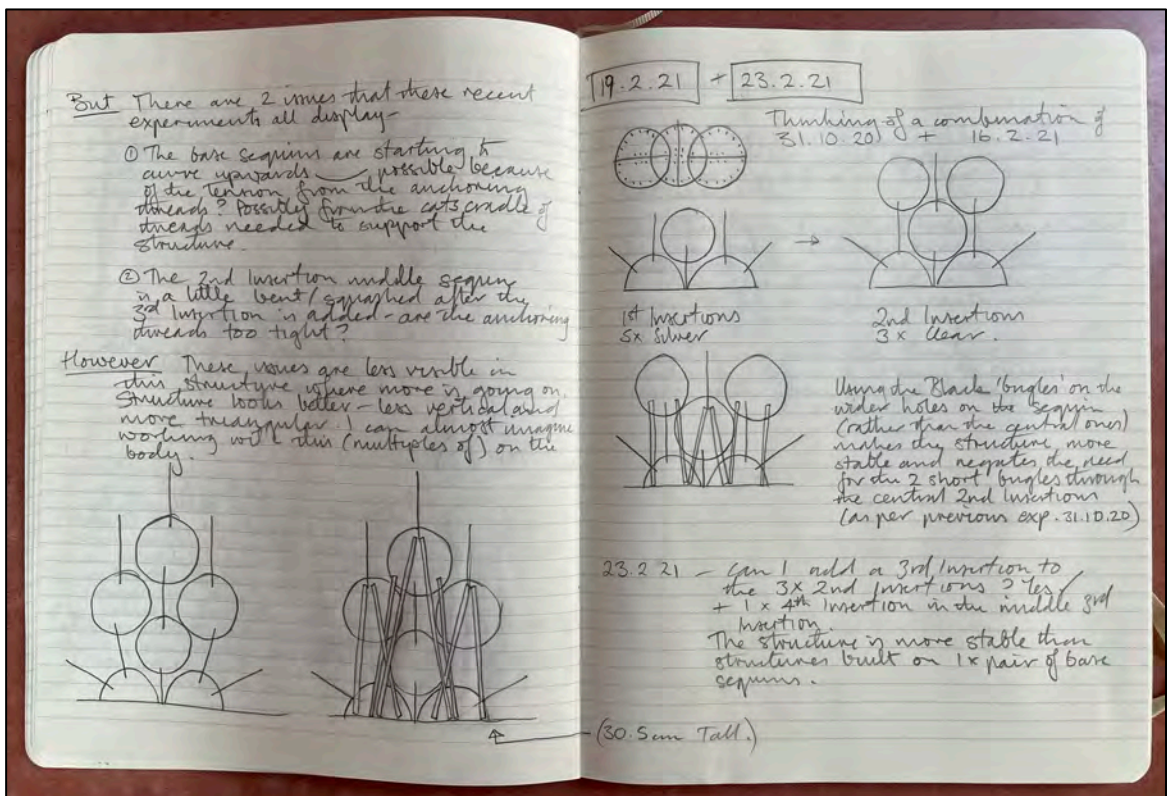


Fig. 6.56 RDJ (19.02.21 and 23.02.21). Photograph © Richard Sorger.

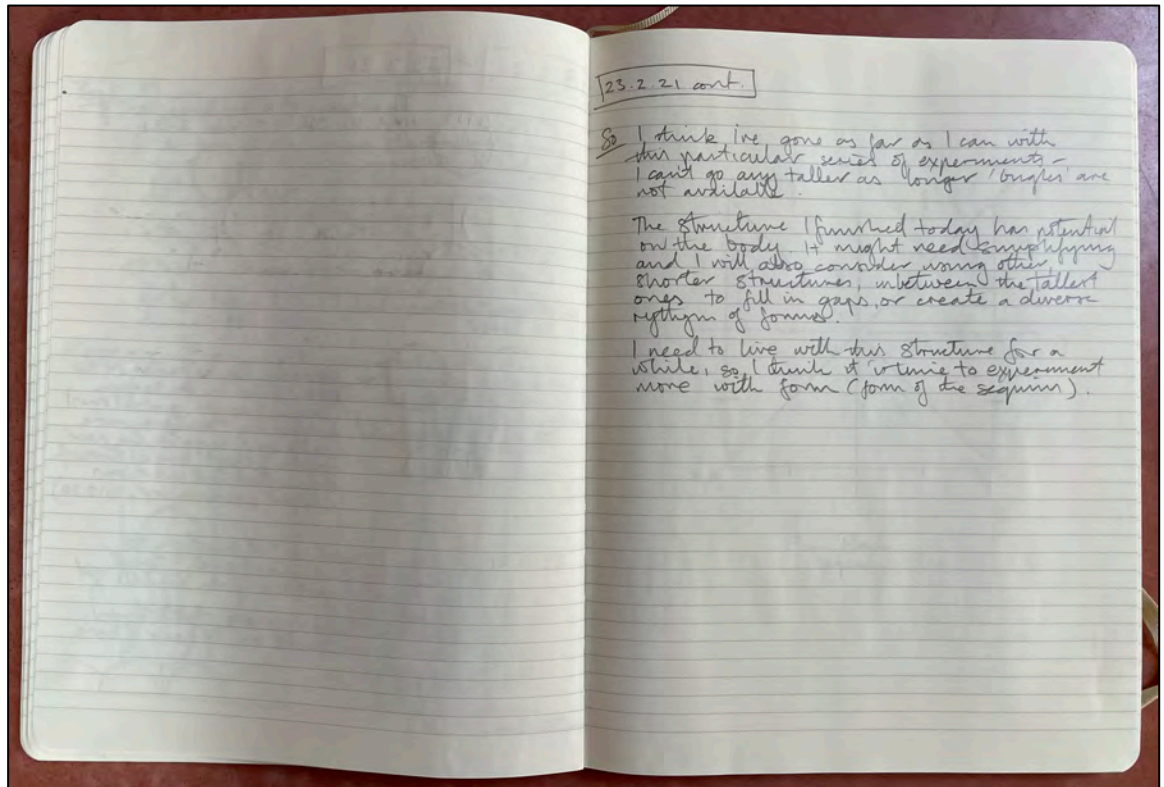


Fig. 6.57 RDJ (23.02.21 cont.). Photograph © Richard Sorger.

Intention	Action		Reflection on experiment completed between 19.02.21 to 23.03.21
1		✓	In the above experiment, completed between 19.02.21 to 23.03.21, the use of beads enables stability (3). This practice addresses criteria 7 & 8, creating taller structures. However, due to the structure's complexity, pleasing as a stand-alone form, it was deemed not useful or practical for the use on the body via the garment as a carrier (4 & 6).
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✗	
	7	✓	
	8	✓	

Please see page 67 for the full practice evaluation criteria.

## Doreen Massey and space

The aim for the practice described in the previous section is to explore and make visible the space beyond the boundary of the body/garment and out to proxemic personal territory. In this section I examine Doreen Massey's notions of space to establish the further discussion of the body/garment and space. How my practice and the final outcome for this study embodies these notions will be discussed later in this chapter.



Doreen Massey's work is concerned with geopolitics. She defines space as the 'dimension of the world in which we live' (Massey in conversation with Nigel Warburton, [socialsciencespace.com](http://socialsciencespace.com), 2013: 2). She states her frustration with how space is discussed by the social sciences as the poor relation to 'time' (i.e., 'time and space') and argues that space is not a linear projection from A to B but is in fact imbued with stories 'in which we are all living at any one moment' (Ibid., 2013: 2). Thus, space is something we move through, but we are at the same time passing through social stories and histories, making space multi-layered ('the dimension of multiplicity'). Further, Massey argues that things can change not only over time but also over space. This argument is interesting when applied particularly to dressed bodies; it is not only our bodies but dressed bodies that are moving through and experiencing space. Our 'material bodies' (how we experience the world through our senses, as discussed in Chapter 5 *Experiential bodies*) form an interface with space in order to experience the world and this is discussed in dance practice by academics such as Valerie Briginshaw (2001) and Susanne Ravn (2016) where bodies and space are further complicated by movement; 'it is clearly in action that the spatiality of our body is brought into being' (Merleau-Ponty, 2002: 197-8). Such approaches emphasise the embodied experience of space which complicates the relationship between the body and space connected through matter and movement. Our awareness of space starts with our bodies right at the moment of birth and right from this moment the way the body is fashioned complicates our relationship with space (s).

Massey's discussion of space as a narrative is relatable in more social settings (social space) where movement and interactions with other players is unavoidable. For the purposes of my doctoral practice-led research I am concerned specifically with personal distance (in the general sense and not the specific sense of proxemic personal space), which I discuss below, but first I discuss social space.

## **Social space**

Massey defines social space as the connections and interactions that we make with each other (Massey, 2013 and Massey, 1994: 120); 'The articulation of social relations which necessarily have a spatial form in their interactions with one another' (Ibid., 120). These social relations are built up over time, contributing to the narrative Massey argues is part

of space and its organisation in a social setting. The demarcation of these social spaces has physical boundaries and practicalities, but there are also invisible boundaries applied to the spatial organisation of social spaces; territories. Social space is intrinsically linked to notions of territory and individual territories are called proxemics, which will be discussed in more detail below. Edward T. Hall's discussion of proxemic territories (discussed later in this chapter) suggest that they are invisible, implied, but no less real to the individual.

Social space is made up of the personal territories of individuals, but I am not concerned with this mass of personal territories and how they interconnect, but how an individual territory can interact with the immediate surrounding space. My practice questions both notions of proxemics and territory through the extension of the boundaries of body/garment, using embellishment as the tool to achieve this, and space is the arena in which my practice is played out.

## **Practice and proxemics**

The tensegrity structures discussed in the beginning of this chapter extended further out to space from the base fabric, than in my previous practice. It is interesting to note that the tensegrity structures discussed earlier in this chapter never made it as far as being placed on the mannequin. I did not need to test them on the body/garment to know that they would not be successful. Although this practice has not been applied to the body, this consideration has been a part of my evaluation for each structure, because it is only when applied to the body (or mannequin) can the practice engage with and make visible proxemic space.

I introduced Hall's notions of proxemics in Chapter 1, but it is now necessary to discuss further the definitions of proxemic space, how these form territories around the individual and how these proxemic spaces are navigated through egocentric and allocentric space as defined by the American neuroscientist and author Michael Graziano (2018), which will also be discussed below. My practice, when worn, engages directly with these notions of egocentric and allocentric space through the increased proxemic (egocentric) space of the wearer and how they navigate (allocentric) space.

I then discuss personal space (also known as personal distance) and how these notions of space have been tested. The below theories do not generally take into consideration that the body or bodies they discuss are *dressed* bodies, as discussed in the last chapter. Discussions of space that I reference as part of this study, are concerned with bodies but they do not engage with fashion theory. These are two areas of investigation that intersect in this research.

My practice complicates discussions of space; in the last chapter, body and garment can be viewed as inseparable using the arguments of Gautier, Entwistle, Barnard, and Soper in Chapter 5, and when embellishment is applied to the body/garment, embellishment can be viewed as inseparable as well. The fusing of these three elements can effectively be used to visualise proxemic space, as well as to explore and navigate the surrounding space of an individual.

## **Proxemics and territories**

The anthropologist Edward T. Hall first introduced the term 'proxemics' in his 1966 book *The Hidden Dimension* to explain notions of 'intimate space' (0-45cm), 'personal space' (45-120cm), 'social space' (120-365cm), and 'public space' (365-762cm) which form layers of portable territory that surround the body. According to Graziano (2018: 19), Hall was influenced by Heini Hediger's findings concerning animals (see the next paragraph), relating them to human behaviour and how space shapes ways in which humans communicate with each other (in Kneebone, 2019: 2291). However, Hall's notion of proxemics was untested and based upon cultural and racial stereotypes that would not be published today because this approach to classification of people is no longer appropriate.

Proxemics as defined by Hall form our individual territories and this notion of territory was first observed in the behaviour of animals. Heini Hediger was the director of the Zurich Zoo, Germany, from the 1950s to the 1970s. He was instrumental in establishing through his work at the zoo that the dominant behaviour in animals was 'protecting the self from bodily harm' (Graziano, 2018: 13). Therefore, animals are very conscious of their

surroundings. He observed that animals appear to have an ‘internal map’ of their surroundings as well as a sense of their territories.

## **Allocentric and egocentric space**

The notion of territories is further complicated by how space is navigated. There are two methods by which the brain processes space; ‘allocentric space’ is when space is processed by using external landmarks for navigation (Graziano, 2018: 15). Allocentric space is fixed, and we move through it. The other method of processing space is called ‘egocentric space’ which understands space in the context of our own bodies; for example, my laptop is in front of me, a pile of books is further away on my right-hand side. An animal’s territory is allocentric space, but they carry with them a ‘portable’ territory of egocentric space which is also known as ‘escape distance’ or ‘flight zone’ (Ibid., 2018: 15). Such approach to processing space emphasises the embodied experience in spatial encounters, as discussed earlier in *Doreen Massey and space*.

These spatial notions can be directly applied to human behaviour and my practice considers both allocentric and egocentric space; Entwistle writes that the garment is the boundary between the body and space (Entwistle, 2000: 232). By applying the stereometric volumes of the tensegrity technique to the body/garment, it is possible to extend out this boundary between the body and space. This affects how the wearer engages with allocentric space through the enhancement of egocentric space.

## **Personal space**

The discussion of personal space<sup>32</sup> has become more pertinent since the start of my project in 2014; the COVID-19 pandemic has made us much more conscious of our intimate, personal, and social proxemic spaces and how we define and interact with them; they are no longer abstract terms but have become a lived embodied reality. The fashion journalist Chloe Street even refers, tongue-in-cheek, to ‘socially distanced

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<sup>32</sup> The discussion of personal space in this section, is, confusingly, different from the proxemic term ‘personal space’; Proxemic personal space is a territory of 45cm-120cm whereas the personal space described in this section is more general and less specific but also owned by the individual.

dressing' as a mode to keep people at arms-length, citing Halpern's giant orb feather dresses (Chapter 3, fig. 3.58) as an example from the spring/summer 2021 London Fashion Week presentations (Evening Standard 22.09.20). This articulates ideas that I explore in my project using interdisciplinary theories pertaining to the dressed body and the space surrounding it.

According to the psychologists Welsch et al. (2019) the best definition of personal space comes from Leslie Hayduk's 1983 paper *Personal space: Where we now stand*;

...we can define personal space as the area individual humans actively maintain around themselves into which others cannot intrude without arousing discomfort (Hayduk, 1983: 118).

This definition can also be used to define territories which are directly linked to notions of personal space. Graziano writes very accessibly about personal space; the 'neuroscience of personal space is one of the most beautiful and simple stories in brain science, and also now one of the best understood' (Graziano, 2018: 2). He frames personal space as an invisible 'second skin' and our interactions with the world beyond the boundaries of our bodies are ruled by unconscious or learned notions of our personal space. We are rarely naked in the outside world and so clothing can also be defined as a second skin as it acts as a barrier and interface between the body and the surrounding space (Entwistle, 2000: 232). As I have discussed the body and the garment can also be viewed as inseparable, so I argue that clothing is directly linked and essential to our notions of personal space, as both object and idea. The garments produced for this study, *The Arnhem Bodice* and *The Eclipse Dress* (discussed later in this chapter) both directly make visible this personal space.

According to the Danish psychologist and academic Henrik Høgh-Olesen (2008), there are several factors that affect the perception of an individual's personal space; culture, gender, age, personality, and their relationship, and my research adds clothing to this definition. As mentioned, Edward T. Hall made rather sweeping generalisations about different cultures in relation to personal space that would not hold up today (Graziano,

2018: 20), but Høgh-Olesen cites evidence that people from so-called 'contact cultures' such as Southern Europe, Latin America and Arabia have 'shorter interactional distances' i.e., smaller personal space, men prefer more space than women and children have shorter interactional distances. People who are confident or dominant and when people are known to us or similar to us also require less personal space (Høgh-Olesen, 2008: 246). These examples refer to reduced personal space whereas my practice explores how personal space can be extended through the dressed body, therefore circumnavigating different cultural experiences of personal space; the wearer's personal space is made visible and unambiguous. Clothing is how we navigate allocentric space and the tensegrity technique supplements our egocentric space. How these notions of intimate and personal space are tested will be discussed at the end of this chapter.

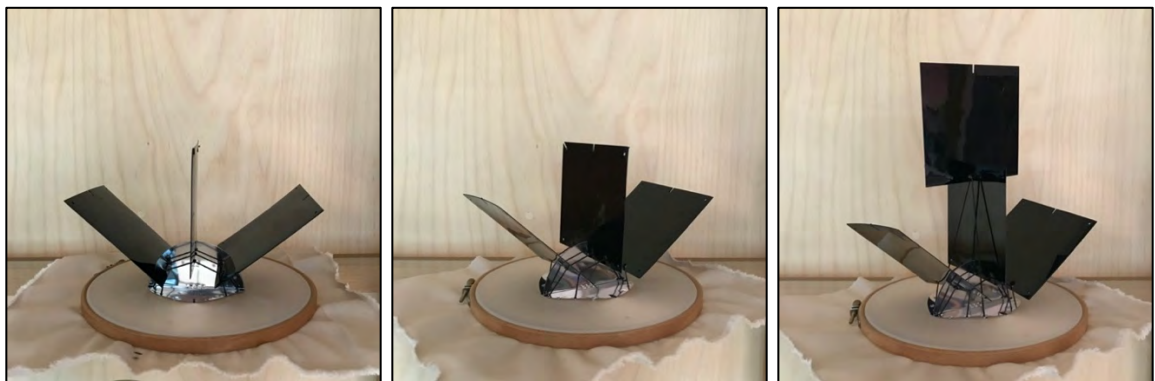
## **Experiments with 'new' sequins**

The experimental work discussed earlier in this chapter produced some interesting results, but their use on the body/garment was questionable; without directly applying to the body, I was still able to evaluate that they would not be successful when applied to the body/garment because of their complexity. As discussed in *Building a tall and wide tensegrity structure*, my methodological approach to this was to attempt another line of investigation, to give me an opportunity to reflect and evaluate the work, as well as an attempt to provoke potential new ideas. So, I decided to explore the use of 'new' sequins; first with 9cm square black sequins and then experimenting with constructing different sequin shapes utilising sequin waste materials acquired from the Sustainable Sequin Company.

The following experiments from 02.03.21 explored using and then developing different sequins shapes other than the traditional circular sequin. These experiments are included here because this line of exploration led to the development of the final tensegrity structures that were used for *The Eclipse Dress* (see figs. 6.107-6.110). They also form part of the linear timeline of the practice.

In October 2020 I bought some 9cm black square sequins to use, but these did not prove to be successful. I started the structure using a pair of circular sequins for the base, and

then inserted three square sequins into notches at approximately '10, 12, and 2 o'clock'<sup>33</sup>. A 2<sup>nd</sup> insertion was only possible in the central sequin as the outer two squares radiated too far away from the base, creating too extreme an angle to use thread and tension. So, I focused my attention on the central square sequin and added a 2<sup>nd</sup> insertion square sequin (figs. 6.58-6.60). Because the square sequins were curling slightly, I had to glue two together and this made the insertion rather heavy and an unstable component in the structure. I abandoned the use of square sequins quickly after this as I saw no potential; the squares were difficult to use, and their form did not add anything interesting to the structure's composition; they were too angular and the form felt rigid, whereas the circular sequins were 'softer' in their form and a good contrast to the lines of thread. Circular sequins are available in diverse sizes whereas the square sequins I had were in one size only, and this probably contributed to why I did not explore the square sequins further. I always encounter a sense of uncertainty whenever I create a new structure, and often need time to reflect on it before accepting its newness, however, the use of square sequins felt lacking in potential.



Figs. 6.58-6.60 9cm black square sequins used as 1<sup>st</sup> insertions and one 2<sup>nd</sup> insertion (02.03.21). 90mm black plastic sequins, 80mm silver plastic sequins, black cotton thread, cotton fabric. Photographs © Richard Sorger.

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<sup>33</sup> The reference points from a clock are used here to enable the reader to better visualise the placement of the notches on the sequin.

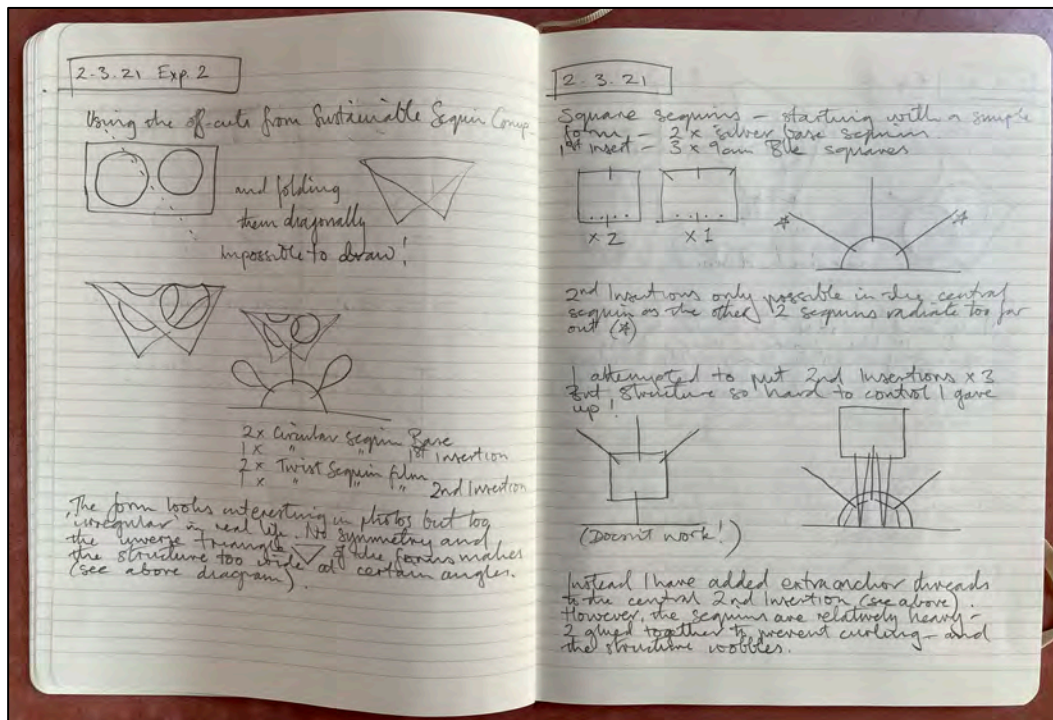


Fig. 6.61 RDJ (02.03.21). Photograph © Richard Sorger.

Intention	Action		Reflection on experiment with square sequins
1		✓	The above experiment with square sequins addresses criteria 1, 2 and 5, by using the tensegrity technique. It is also stable (3). The structure supplements the surface of the fabric and extends out to proxemic space (7). However, it lacks the potential to successfully build beyond the first insertion other than on the middle first insertion (8). Criteria 4 and 6 are not applicable here because the structure lacks the potential application to the body because of its limitations. Previous experiments are a mix of curves and straight lines (circular sequins and thread), whereas this experiment is all straight lines. It has a rigid appearance that lacks the possibility for developmental iterations.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

### ***New materials from The Sustainable Sequin Company***

As previously mentioned, in terms of sequins I had been buying pre-cut circular sequins in black, silver, and clear plastic, the diameters varying from 5-10cm. At this point in my practice, I began to source my sequins from The Sustainable Sequin Company founded by Rachel Clowes, a sustainable textiles designer, researcher, technician and tutor at The University of the Arts, London, specialising in sustainable and durable embellishments using environmentally sound materials and ethical processing. The sequins produced by Clowes are made from recycled PET film; 20% PET and 80% virgin polyester ('not ideal' by her own admission, but currently what is available) 70%-100% PET depending on the weight and quality of the film. Large, pre-bought sequins can curl as they have been cut



from a roll of plastic film and I have compensated for this by gluing two together. Clowes uses films that are a bit thicker and come in sheets (190um and 240um, rather than 150um of the main films) and so they will potentially not curl. Working with Clowes on bespoke sequins also meant that I could request the waste plastic film to try to incorporate into my practice, therefore reducing waste. These offcuts are rectangular plastic film with large circles (the sequins) cut out (see fig. 6.62).



Fig. 6.62 Plastic PET film that The Sustainable Sequin Company cut their sequins from. This offcut is 32.3 x 12.3 cm. The size of the offcut can vary between batches and colours. Photograph © Richard Sorger.

The first sequins I received from the Sustainable Sequin Company were 10cm sequins in silver, clear, matt black, and shiny black. I requested the offcuts of plastic film that are the by-product of cutting out the circular sequins with the intention to try and incorporate them into my practice. For the first experiment on 02.03.21, I used the silver offcut film; 22cm x 12.5cm rectangles with two 10cm diameter sequins cut across the film. I folded the film diagonally, inserting two of these forms at approximately '10 and 2 o'clock' in notches on a pair of base sequins. At '12 o'clock' I inserted a 10cm circular sequin and into this I inserted a third folded silver film. The forms looked interesting in photographs (see figs. 6.63-6.65 and RDJ fig. 6.61), but the structure in real life was irregular and lacks symmetry. The inverse triangle of the film is too wide at certain angles and means that it will be difficult to accommodate with multiples of the same form next to each other. And as much as I want experiment with diverse forms, symmetry is another aim or sub-aim along with simplicity.



Figs. 6.63-6.65 *Experiment 2* (02.03.21) using silver sequins and the offcut film from The Sustainable Sequin Company. 80mm silver plastic sequins, silver plastic sequin offcuts, black cotton thread, cotton fabric. Photographs © Richard Sorger.

Intention	Action		Reflection on <i>Experiment 2</i> (02.03.21)
1		✓	The above <i>Experiment 2</i> (02.03.21) with sequin film addresses criteria 1, 2 and 5 successfully by using the tensegrity technique. It is also stable (3). The structure supplements the surface of the fabric and extends out to proxemic space (7). However, it lacks the potential to successfully build beyond the insertion of the sequin films (8). Criteria 4 and 6 are not applicable here because the structure lacks the potential application to the body because of its limitations.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	N/A	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

## The development of a ‘zero waste’ sequin component

For the next experiment on 02.03.22, I cut up one of the black offcut films into random shapes; one side of the offcut film is straight lines and corners (the outside edge of the film) the other side is curved where the sequin has been cut out (see fig. 6.62). These were then glued to existing circular sequins, creating what I called ‘shattered sequins’ (fig. 6.66). These augmented sequins were then applied to a pair of base sequins as two 1<sup>st</sup> insertions at ‘10 and 2 o’clock’, and a 2<sup>nd</sup> insertion at ‘12 o’clock’. At first, I noted that these could be interesting and a successful way to use up waste materials; zero waste sequin cutting. Their forms were quite sharp and aggressive, which could be interesting; reminiscent of flower buds unfurling as imagined by a German Expressionist. However, they were ultimately discarded as overly complicated once I had produced the next experiment.



Fig. 6.66 *Experiment 3* (02.03.21). The offcut film was itself cut up and the shards were then glued to circular sequins to create a 'shattered sequin'. 80mm black plastic sequins, silver plastic sequin offcuts, black plastic sequin offcuts, clear plastic sequin offcuts, black cotton thread, cotton fabric. Photograph © Richard Sorger.

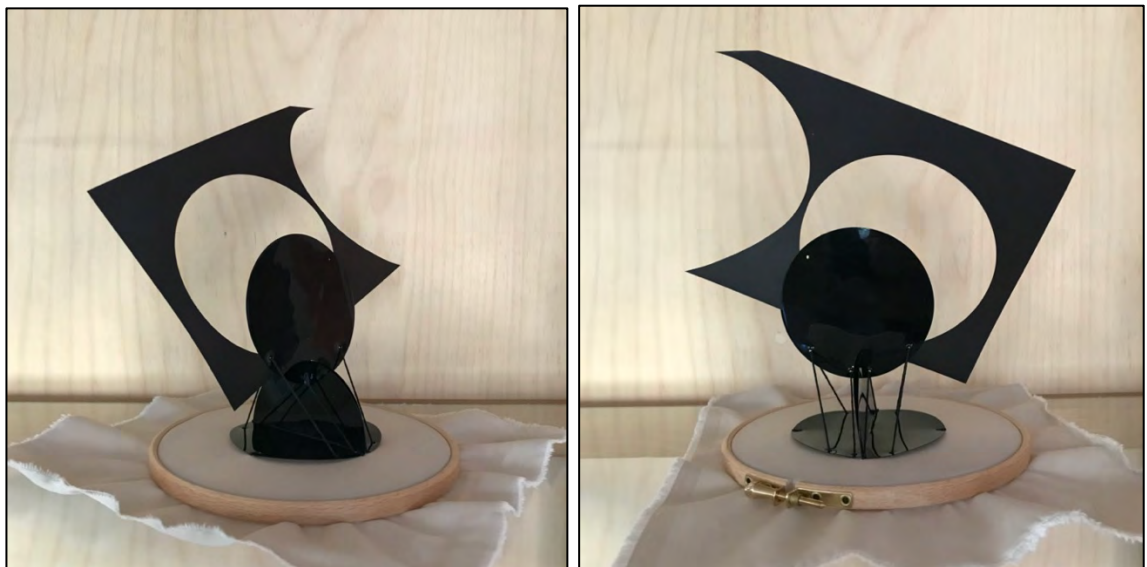
Intention	Action		Reflection on <i>Experiment 3</i> (02.03.21)
1		✓	The above <i>Experiment 3</i> (02.03.21) addresses criteria 1, 2 and 5, by using the tensegrity technique and it is stable (3). The structure supplements the fabric and builds out to space (7). However, its form is too complicated for application to the body via a garment as a carrier (6). Building further out incrementally is also not possible because of the angle of the outside two 1 <sup>st</sup> insertions (8). Criterion 4 is not applicable here, because it was not explored on the body/mannequin because of the structural complexity.
2		✓	
3		✓	
4		N/A	
	5	✓	
	6	✗	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

For *Experiment 4* on the same day (02.03.21), I cut one of the black offcut films through one of the sequin 'voids' (or 'mu' referring back to the Japanese concept) leaving the other intact (see fig. 6.67-6.68). I 'sandwiched' this between two 10cm black sequins which were then glued<sup>34</sup> together. This process created a new sequin form; no longer a simple circular sequin but eclipsing its own void and creating a new form of curves and straight angles; an 'eclipsed sequin'. The simplicity of this form appealed, and like the

<sup>34</sup> At this point in my practice, I had replaced the use of superglue to join two sequins together with double-sided sticky tape. The superglue made the sequins brittle over time, meaning that they could break (snap) more easily. Handling superglue was also an issue as it would leak, mark the sequins and cover my fingers. The double-sided sticky tape, although not a traditional material used for embellishment, proved easier, cleaner, and more flexible to use.

best ideas, it came to me in seconds. It reminded me of a lunar or solar eclipse (the sequin is placed over part of the void left by cutting it out in the first place) and the offcut, being thin plastic, 'waved' when the structure is moved, and as noted at the time 'does this matter? It might add movement to the garment' (RDJ 02.03.21 *Experiment 4*, fig. 6.69). When this new component was applied as 1<sup>st</sup> insertion onto a base it measured 20cm at its highest point. So, although it was not the tallest tensegrity structure produced as part of this research, its relative simplicity meant that it had the potential to be applied to the body/garment, answering one of the sub-aims mentioned above (*Building taller tensegrity structures* earlier in this chapter) that was arrived at during the experiments. I never return to the shattered sequins after this experiment.



Figs. 6.67-6.68 *Experiment 4* (02.03.21). Sequin offcut film was cut through one of the voids left by a sequin and inserted between two 10cm sequins to create a new sequin component; the 'eclipsed sequin'. This was then inserted into a sequin base and tethered by thread and tension. 80mm black plastic sequin, black plastic sequin offcuts, black cotton thread, cotton fabric. Photographs © Richard Sorger.

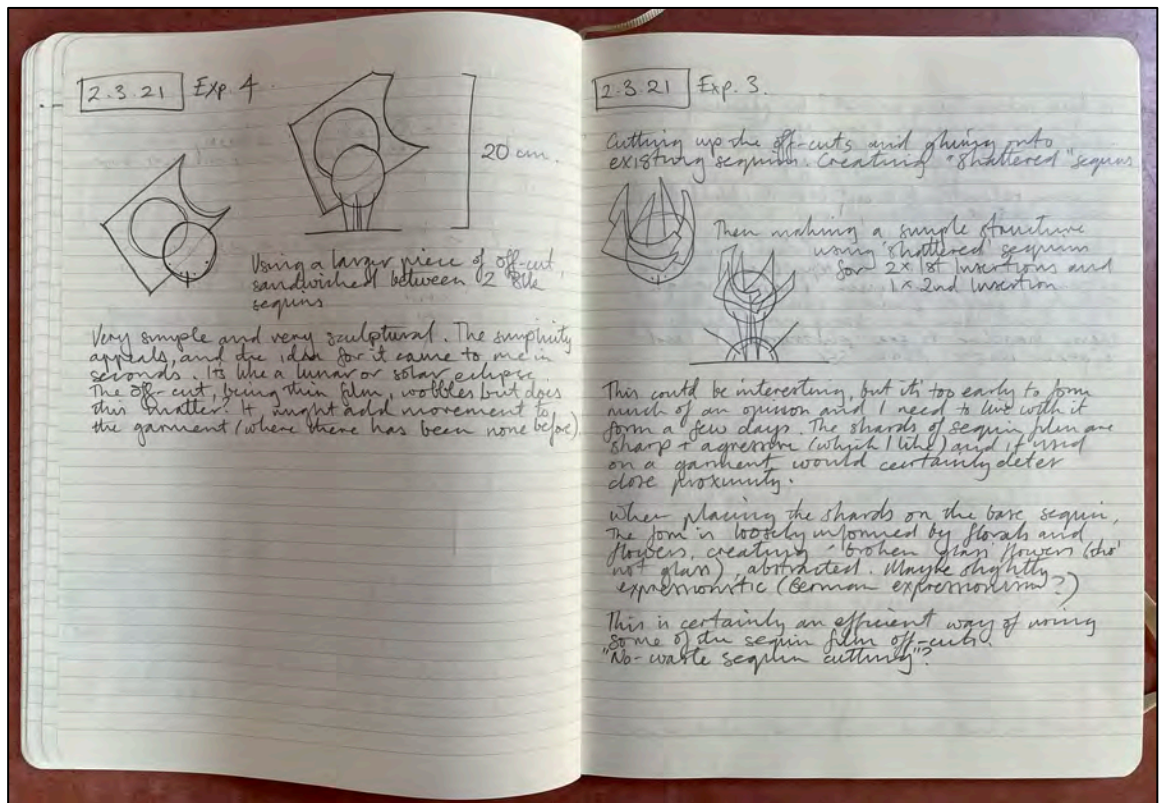


Fig. 6.69 RDJ (02.03.21 cont.). Photograph © Richard Sorger.

Intention	Action		Reflection on Experiment 4 (02.03.21)
1		✓	The above Experiment 4 (02.03.21) addresses criteria 1, 2 and 5, by using the tensegrity technique. The structure supplements the fabric and builds out to space (7). The relatively simple structure suggests a potential for the application to the body via a garment as a carrier (6). Criterion 8 is not possible as further insertions are not possible in the film. However, the structure using the plastic sequin films is relatively tall (approximately 23cm) in comparison the 1 <sup>st</sup> insertion sequins used on early experiments and the use of the sequin film has the potential to be even taller and possibly wider. This will be explored in the next experiment.
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	✗	

Please see page 67 for the full practice evaluation criteria.

Prior to the development of the eclipsed sequin, I had begun to feel disappointed with my experiments with other shapes and forms (figs. 6.58-6.60, 6.62-6.64, and 6.66) and I was concerned that my practice would not move on from *The Arnhem Bodice*. However, *Experiment 4* was more successful than the previous experiments because of its simplicity and I was also attracted by its asymmetric form taken from the process of making the component/sequin itself. This contradicts previous comments about wanting symmetry from the results of the experiments, however, how I use them of the body could be symmetrical.

My next step was to replicate *Experiment 4* adding two further 1<sup>st</sup> insertions at '10 and 2 o'clock' either side of the central insertion. Notes from the RDJ on 09.03.21 ask; what will it look like? How will it move? Does it have the aesthetic appeal to be used on a garment? (And how is 'aesthetic appeal' judged?).

For the three 1<sup>st</sup> insertions I left the rectangular film intact with its two circles cut out, and their 'floppiness' (for want of a better word) is not obviously appealing and was taking my practice into new territory that I was initially uncertain of. These rectangles of film, the outer edges of which were straight lines and right angles, are a bit literal; they are obviously the offcuts of the sequins, so as with *Experiment 4*, I cut across one of the holes and this abstracts the form (for a comparison, see figs. 6.70 and fig. 6.67). However, not all the negative spaces were cut through leaving some intact, creating what I call 'negative space sequins' or 'negative sequins'. These 'sequins' engage with both the Japanese concept of mu (the void, see chapters 3 and 5) as well as the stereometric method's implied volume as a sculptural volume<sup>35</sup>. It could be conceptually argued that the negative sequins are a new material for embellishment.



Figs. 6.70-6.72 The subsequent version of *Experiment 4* with multiple films (09.03.21). 80mm black plastic sequin, black plastic sequin offcuts, black cotton thread, cotton fabric. Photographs © Richard Sorger.

<sup>35</sup> Although it is debatable whether a flat film can have 'volume', when the structures are applied *en masse* to the body/garment they can be viewed as stereometric volumes because they are no longer 'flat' but a part of the whole work.

Intention	Action		Reflection on experiment completed on 09.03.21
1		✓	The above experiment on 09.03.21 addresses criteria 1, 2 and 5, by using the tensegrity technique. The structure supplements the fabric and builds out to space (7). The relatively simple structure suggests a potential for the application to the body via a garment as a carrier (6). Criterion 8 is not possible as further insertions are not possible in the film. However, the structure using the plastic sequin films is relatively tall and wide (approximately 25cm tall and 43cm wide) in comparison to earlier experiments that are either too complex or not as tall and wide, such as the individual structures used on <i>The Arnhem Bodice</i> .
2		✓	
3		✓	
4		✓/X	
	5	✓	
	6	✓	
	7	✓	
	8	X	

Please see page 67 for the full practice evaluation criteria.

## The application of the zero waste tensegrity structures to the body

It was only when I placed the zero waste tensegrity structure onto the mannequin that I began to see its potential; the holes where the sequins were cut out created negative space sequins in the surrounding space of the garment, areas of space, void or mu, that become part of the body/garment, embodying stereometric implied volume. This initial placement of one structure on the mannequin (figs. 6.73-6.75) was enough to encourage me to make multiple versions of the same tensegrity structure, using up silver and clear plastic film offcuts, to see what they looked like *en masse* on the mannequin.

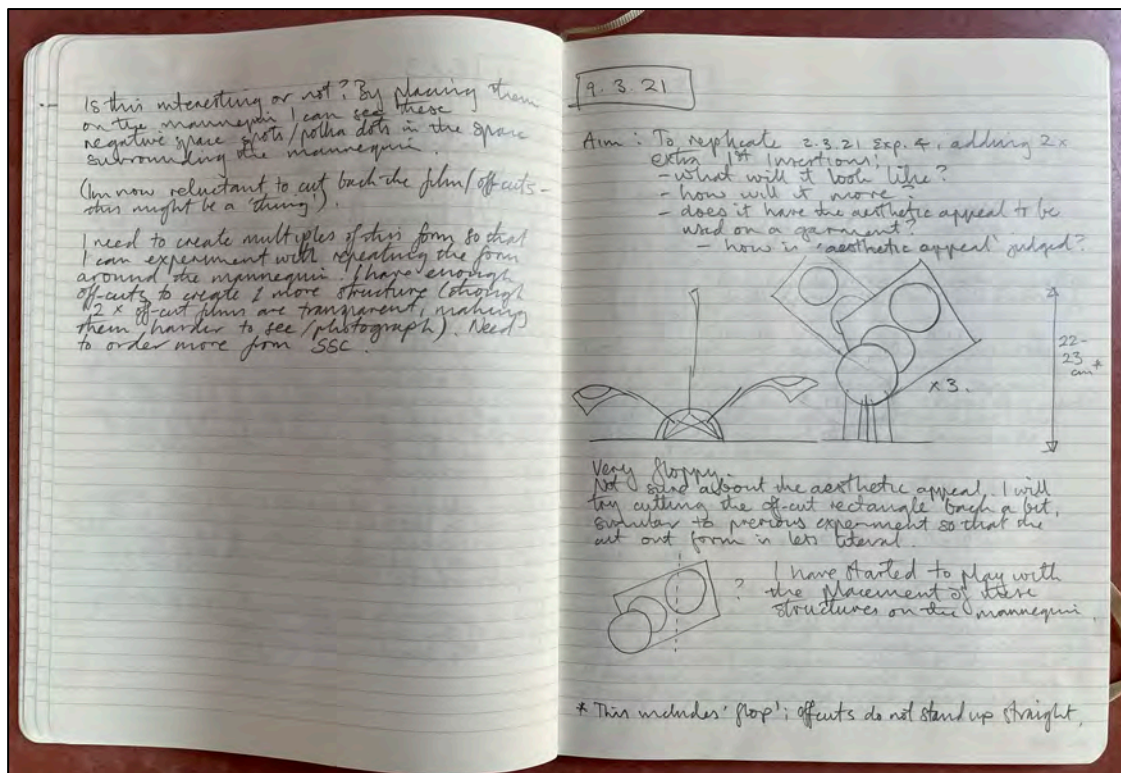


Fig. 6.72 RDJ (09.03.21). Photograph © Richard Sorger.



Figs. 6.73-6.75



Figs. 6.76-6.78



Figs. 6.73-6.81 Stand work using *Experiment 4* and the subsequent version with multiple films (09.03.21). Photographs © Richard Sorger.



Figs. 6.82-6.84 Stand work using multiples iterations of *Experiment 4* (11.03.21). Photographs © Richard Sorger.



The experiments I discuss earlier in this chapter made between 26.10.20 and 23.02.21 (figs. 6.1-6.57) focused on how far I could extend into the proxemic space of the fabric using the tensegrity technique. Although the extension into space reached 30+cm above the fabric surface, these structures were not useful or aesthetic if applied to the body, due to the above discussed reasons, complexity of structure being one of them. A much simpler solution was discovered with the development of the zero waste tensegrity structures that started with *Experiment 4* on 02.03.21. This proved to be much more successful when applied to the body (mannequin) and I discuss the development of the final practice for this study in the next section.

Intention	Action		Reflection on stand work completed 09.03.21
1		✓	In the above stand work, notions of body and space are embodied through practice, applying the stereometric method and tensegrity to explore proxemics (4). The technique/embellishment can be applied to the body through a garment as carrier (6). The structures supplement the surface of the fabric and build into proxemic space (7). Criterion 8 is not applicable here because the structure does not allow for incremental building out to space through further insertions, however, the structures reach out to proxemic space up to 28cm, which is much further than the individual structures used on <i>The Arnhem Bodice</i> .
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## Developing *The Eclipse Dress*

Just over five months passed before my next journal entry on 26.08.21. I was not practice-free this whole time, but the stand work I produced was recorded with photographs only rather than in my RDJ (see figs. 6.88-6.90) because this method of working was not new. Leading up to working on the mannequin, I made several versions of the structures from 09.03.21 (I didn't record how many structures I made), using a new batch of sequins from The Sustainable Sequin Company cut from a slightly different rectangular film, 37cm x 12.5cm. Four 8cm sequins were cut from each of these films, and for the purposes of creating the components for the structures, I cut through one or more holes, creating three different shapes which can be seen in the diagram in the RDJ on 02.09.21 (fig. 6.99). These were then applied as 1<sup>st</sup> insertions to a pair of base sequins that were grafted onto black felt, so that the black felt could be cut away and these structures could be re-used on any final piece I created. Each structure was made up of three 1<sup>st</sup> insertions; the insertions at '10 and 2 o'clock' were always the same, but the one at '12 o'clock' was different. This was to do with how the films are cut and how many of

each of the three forms they can make. As well as the outer two sequin components being different to the central one, they also 'point' in different directions; if the outer two can be viewed as pointing upwards because of how the film was inserted into the sequin, then the central insertion will point down, and vice versa (see RDJ fig. 6.106 for a drawing of a structure, where the outer two insertions are pointing down).

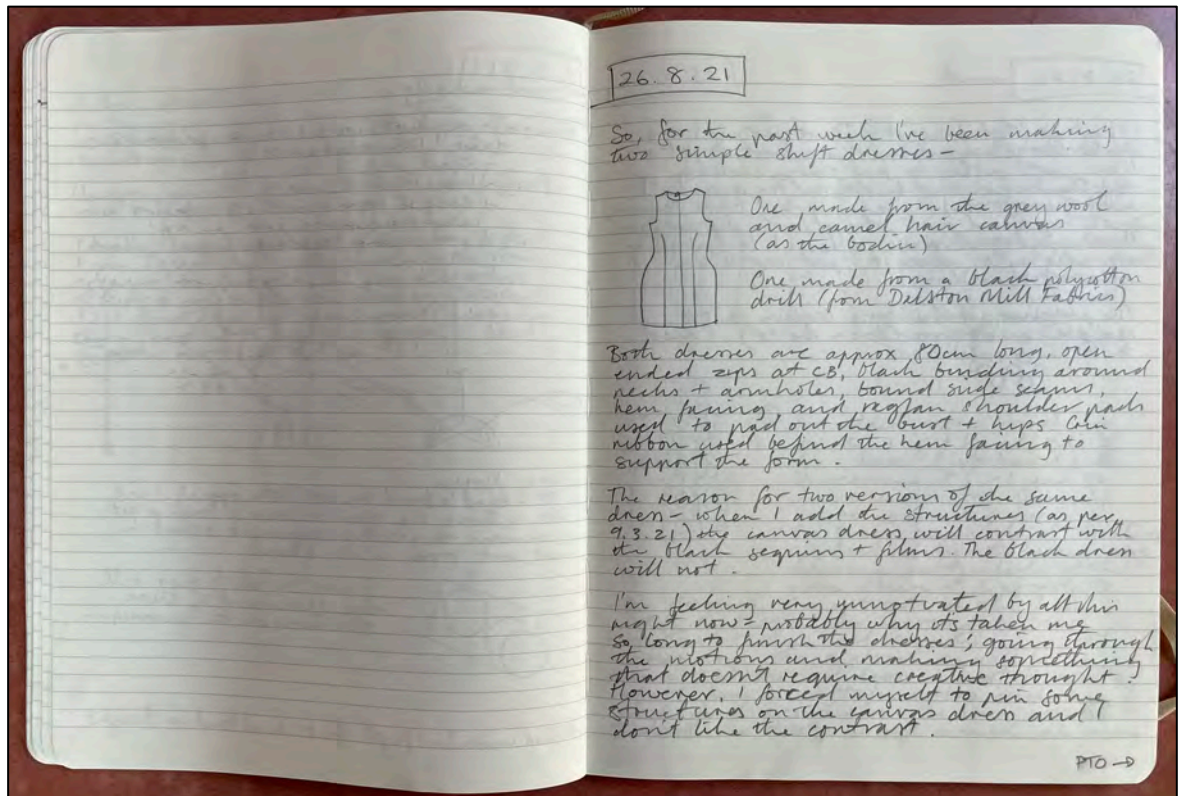


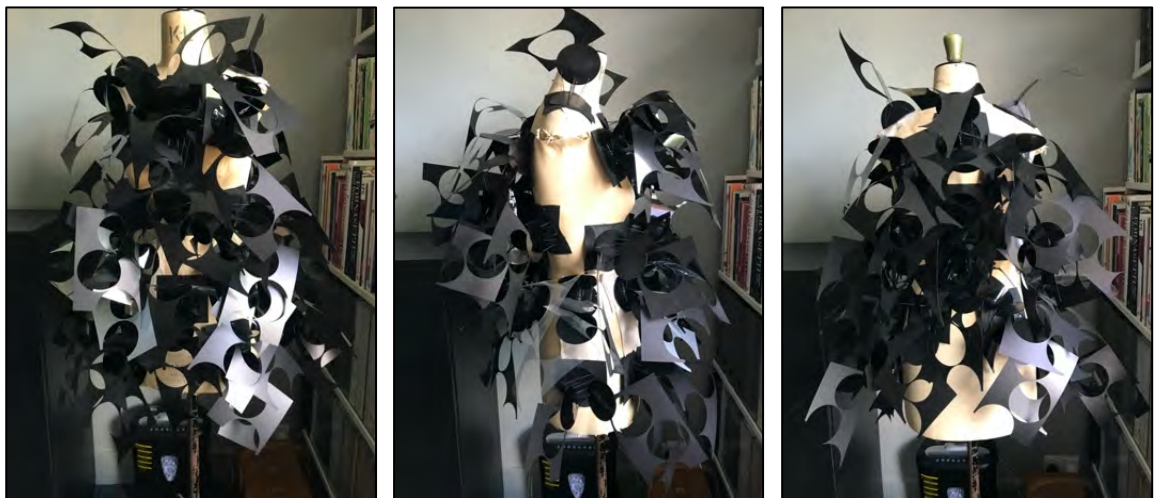
Fig. 6.87 RDJ (26.08.21). Photograph © Richard Sorger.

But before I decided on the composition of a final garment, I pinned multiples of the structure to the mannequin in various areas, such as the shoulder, the hip, the centre front, to assess their potential for use on a final garment. The more that were applied to the mannequin the more interesting it became; the mass of films, negative space sequins, combined with their kinetic movement when the mannequin is rotated, had the potential to answer some of my aims and objectives for my practice (see *Introduction*) using a tensegrity structure quite different to *The Arnhem Bodice*:

*Aim 3; To explore the boundaries of the body and garment, and proxemic space.* The tensegrity structures when applied to the body/garment reach out to space and extend the boundaries of body/garment. This is possible because I have established that the

body and garment are inseparable by using the arguments of Gautier, Entwistle, Barnard and Soper in Chapter 5, and embellishment, through the application of supplementary is also an inseparable part of the body/garment when used.

Objective 4; *to explore the proxemic space beyond the surface of the garment; intimate and personal distances and territories, through the concept of embellishment.* The tensegrity technique uses stereometric volumes and spatial embellishment to make visible these implied spaces.



Figs. 6.88-6.90 Iterations of *Experiment 4* 09.03.21 added to the mannequin (23.06.21). Photographs © Richard Sorger.

### ***Notes on making the base dress for The Eclipse Dress***

When I made the *The Arnhem Bodice* in 2019, I attempted to apply as much of the embellishment directly to the fabric before making the garment. This proved to be problematic, particularly when constructing the garment itself (see Chapter 5). For *The Eclipse Dress* I decided that applying multiples of the complete tensegrity structures to a finished dress would not be ‘cheating’ any more than applying pre-embellished crin ribbon to *The Proxemic Dress* by hand was ‘cheating’ (see Chapter 1). It also meant that I could re-use the structures that were made to experiment with on the mannequin before deciding on the final placement on the dress itself.

So, starting in August 2021, I made two simple shift dresses similar in form to *The Arnhem Bodice* but 22cm longer that would act as carrier for the embellishments (*The Arnhem*

*Bodice* measures 57cm at the centre back, the easiest place to measure it after it was covered with tensegrity structures). One version of the dress was made from the grey wool and camel hair canvas used for *The Arnhem Bodice*, and the other was made in a black polycotton drill. Both dresses were approximately 80cm long from shoulder to hem, with open ended zips at the centre back. The edges of the dresses were finished with bias binding around the neck and armholes and the internal seams were also bound with bias binding. Raglan shoulder pads were used to pad the bust and the slightly exaggerated hips. Crin ribbon was used behind the hem to add some support to the form.

I made two versions of the same dress in two different fabrics for a reason; when the embellishment is added to the wool and camel hair canvas dress, there would be a contrast between the base fabric and the black of the components (I should mention here that I intended the final embellishment to be in a mix of matt and shiny black sequins and films), whereas the black polycotton drill dress will 'blur' with the black embellishment. I then used these dresses to pin the existing structures to, to help me decide between the two dress bases.

I reached the decision to use the black cotton drill dress between 26.08.21 and 27.08.21. It was noted in my RDJ at the time (see fig. 6.95) that when the tensegrity structures were applied to the dress they need to be placed quite far apart because of the size of the structures, and large spaces between the base sequins lack a dynamic tension. This was more noticeable on the grey canvas dress, whereas on the black dress they blended in, and dress and embellishment become visually inseparable. I could add smaller structures between, or just add sequins flat to the surface of the fabric, but this extra embellishment as decoration seemed superficial, and the dress will be more successful if it is all 'function' i.e., all the embellishments embody the stereometric method and make visible, and solid, the proxemic space beyond the surface of the body/garment.

Another decision for using the black structures on the black dress, and this only became apparent and obvious through the process of making and experimenting, was that visually it became harder to see the distinction between dress and embellishment. This further re-enforced the concept that embellishment is the supplement to fabric and in this case,

dress as well. The dress when worn, as discussed in Chapter 5, becomes inseparable from the body, and by extension, body/garment and embellishment become fused together as one.

Even though I decided to use the black dress base, I continued to pin and place individual structures on the grey canvas dress (see figs. 6.91-6.94) so that I could test the placement of the tensegrity structures without damaging the final dress base, starting at the bottom centre front. For this version, the fin of the folded base sequins was vertical, and I placed them in a half drop repeat pattern<sup>36</sup>, first by working up the centre front and then placing further structures on the dart that runs from bust to hem either side of the centre front (see RDJ, fig. 6.95).

Despite working on the grey dress, the more structures that were added, the less the grey base could be seen, and the tensegrity structures with the plastic films dominate the form. However, due to the alignment of the 1<sup>st</sup> insertions, these sequins were all horizontal and gravity made all the films 'droop' (fig. 6.93). Despite this, the more structures that were added to the dress, the more dynamic it became, particularly at the sides where the sequin cut outs, or negative sequins, became more pronounced and visible. The structures, when applied in this manner, reach 15-27cm into proxemic space.



Figs. 6.91-6.94 Tensegrity structures were pinned to the grey wool and camel hair canvas dress to test the placement of the structures (27.08.21). Photographs © Richard Sorger.

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<sup>36</sup> A 'half drop' pattern is made by repeating every second line of a series of motifs at a half-length to the first line, similar to a row of bricks in a wall, or tiles on a wall.

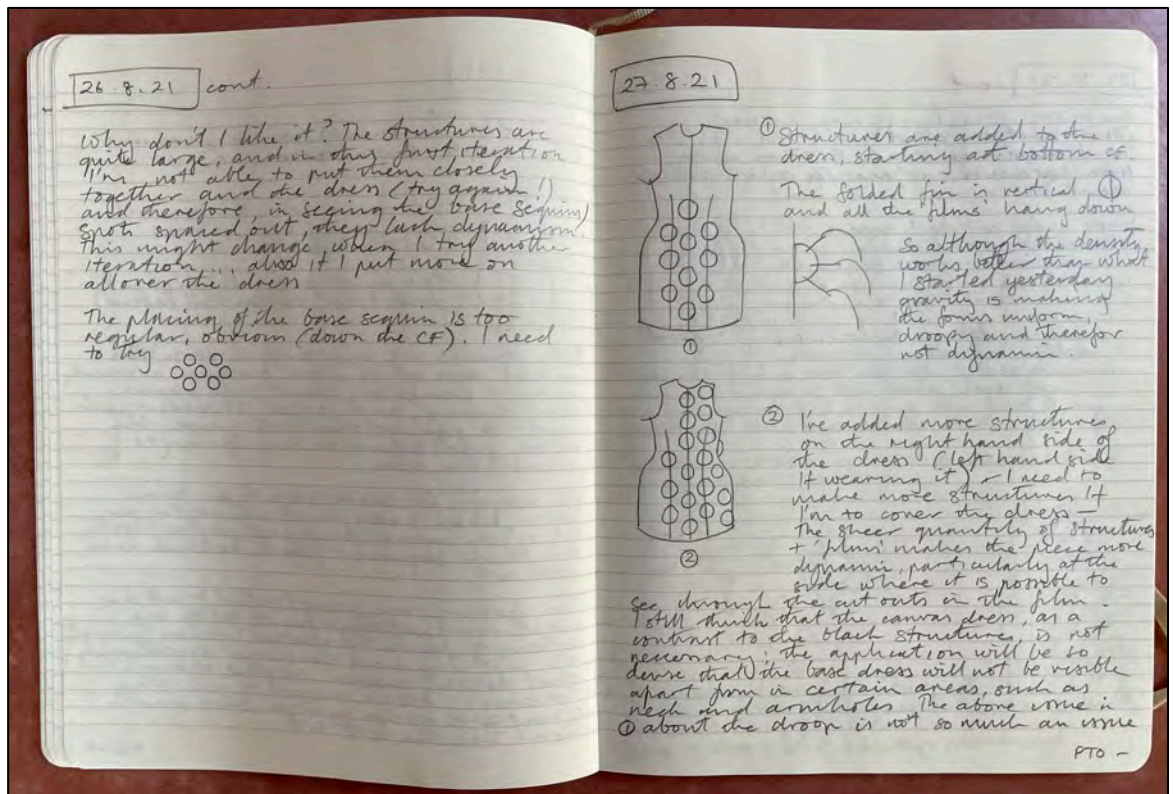


Fig. 6.95 RDJ (26.08.21 cont. and 27.08.21). Photograph © Richard Sorger.

On 02.09.21 I reapplied the structures so that the folded fin of the base sequins was horizontal, and this meant that the films, attached to the 1<sup>st</sup> insertion sequins which were now vertical, stand away from the tensegrity structure and the base dress reaching up to 28cm out to proxemic space (measured from the surface of the fabric). This iteration was much more successful (figs. 6.96-6.98), however there was one potential issue with the placement of the structures in this version; when the fin of the base sequins was vertical, the structure can bend slightly with the curve of the body; when the fin of the base sequins was horizontal, the fold worked against the curves of the body.



Figs. 6.96-6.98 Grey wool and camel hair base dress and initial placement and exploration of tensegrity structures on the dress (02.09.21). The structures have been placed with their base sequin fins horizontally, therefore the sequin and film components stand away from the body much more, creating a more dynamic proxemic silhouette than can be seen in figs. 6.93-6.94. Photographs © Richard Sorger.

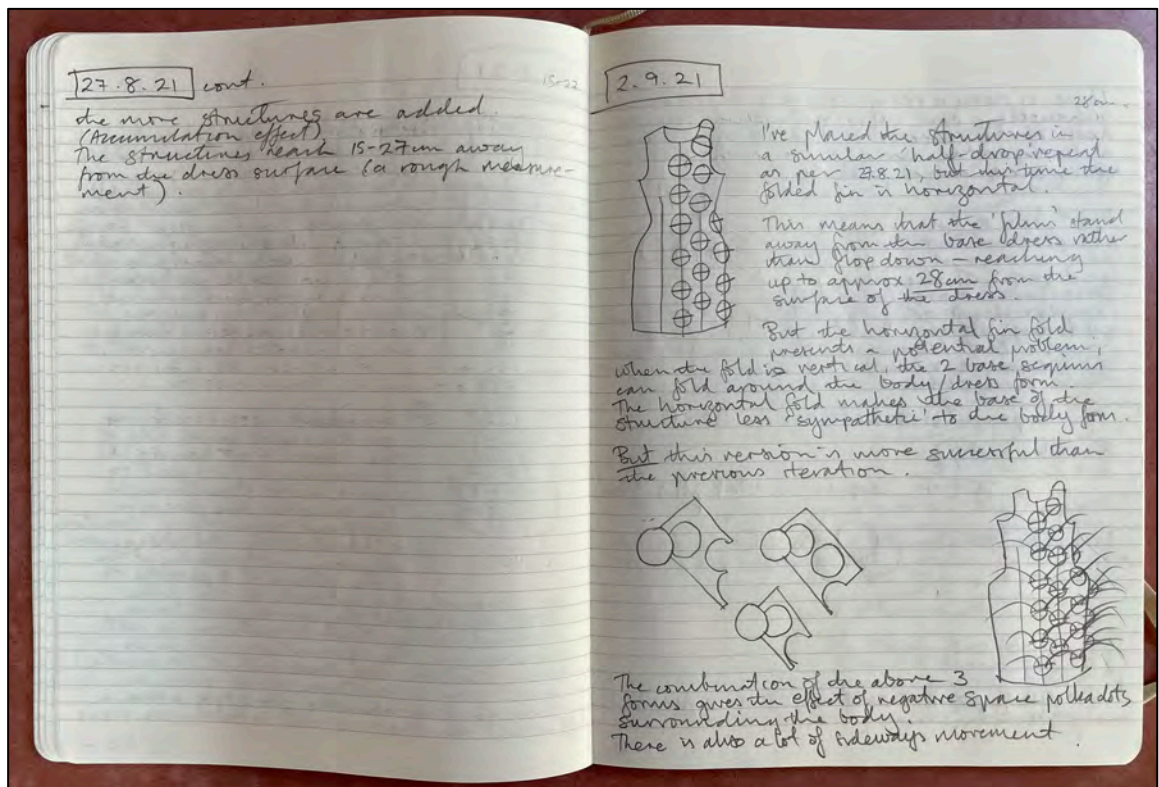


Fig. 6.99 RDJ (27.08.21 cont. and 02.09.21). Photograph © Richard Sorger.

Between 02.09.21 and 15.10.21, I started and completed the final dress. I didn't keep notes in my RDJ during this process as I had resolved and recorded my thinking up to 02.09.21. The process of making was a case of 'just doing' (figs. 6.100-6.105).



Fig. 6.100-6.101 The final dress in progress (08.09.21). Photographs © Richard Sorger.



Fig. 6.102-6.103 The final dress in progress (09.09.21). Photographs © Richard Sorger.





Figs. 6.104-6.105 The final dress in progress (10.09.21). Photographs © Richard Sorger.

Intention	Action		Reflection on stand work completed 23.06.21 to 10.09.21
1		✓	In the above stand work and the application of the structures to a base dress (completed 23.06.21 to 10.09.21), the technique and embellishment explore and embody practice using the stereometric method and tensegrity (2). Notions of body and space are embodied through practice, applying the stereometric method and tensegrity to explore proxemics (4). The embellishment can be applied to a material (fabric) (5). The technique/embellishment can be applied to the body through a garment as carrier (6). The structures supplement the surface of the fabric and build into proxemic space (7). Criterion 8 is not applicable here because the structure does not allow for incremental building out to space through further insertions, however, the structures reach out to proxemic space up to 28cm, which is much further than the individual structures used on <i>The Arnhem Bodice</i> .
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## The finished *Eclipse Dress*

The last entry in the RDJ was 15.10.21 upon completion of *The Eclipse Dress*. The dress was completed using fifty-six separate structures; 444 sequins and 166 films in total. The finished piece is reminiscent of Givenchy's *Evening Dress* from 1969, and the Balenciaga dress from 1965, both embellished with ostrich feathers (see Chapter 3, fig. 3.57). The embellishments extend approximately 28cm from the surface of the dress into proxemic space. There are some differences beyond the obvious between *The Arnhem Bodice* and *The Eclipse Dress*; *The Arnhem Bodice* employed hard proxemic embellishments (hard proxemic embellishment refers to the choice of materials used for the structure and the

outcome of an embellishment. Hard proxemic embellishments are rigid, (see Chapter 3), whereas *The Eclipse Dress*' tensegrity structures are 'soft proxemic embellishments' similar to those cited in Chapter 3, for example the dresses from Givenchy autumn/winter haute couture 2019 (see Chapter 3, figs. 3.55-3.56), and the Halpern dress from spring/summer 2021 (see Chapter 3, fig. 3.58). Unlike *The Arnhem Bodice* where the embellishment is static, these structures have more movement due to the films which form a mass (mess?) of positive and negative sequins in proxemic space.

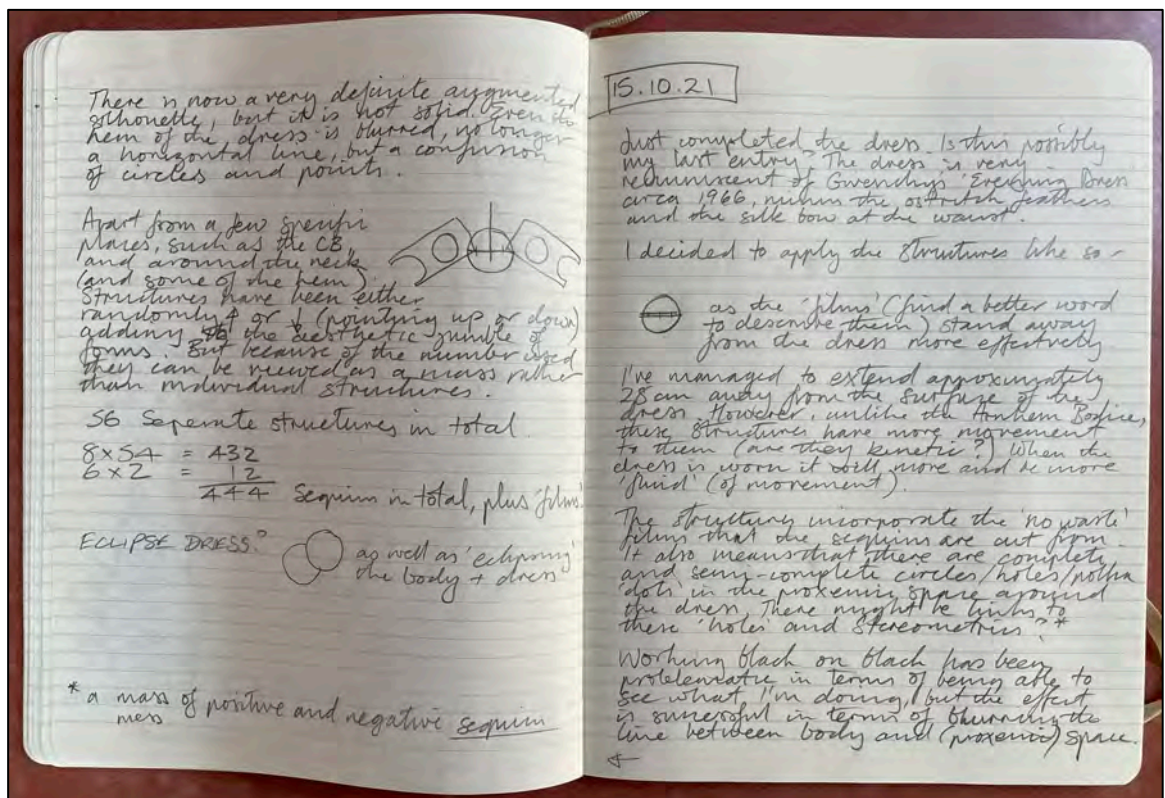


Fig. 6.106 RDJ (15.10.21). Photograph © Richard Sorger.

The dress creates a very definite supplemented proxemic silhouette, but it is not solid. Even the hem of the dress is no longer a definite horizontal line; instead, it is 'blurred' by the overhang of the embellishments, a confusing mass of circles, curves, and points. This 'blurring' also occurs when worn (see figs. 6.107-6.110); the embellished dress conceals and reveals the limbs of the model and becomes more pronounced when in movement (see YouTube Video 9: <https://youtube.com/shorts/8noLxKAFz6c>; Video 10: *The Eclipse Dress (Closer)* <https://youtube.com/shorts/GglUshpfK5M>; Video 11: *The Eclipse Dress (Movement)* [https://youtube.com/shorts/Dm8FC\\_1Vf8E](https://youtube.com/shorts/Dm8FC_1Vf8E))

Apart from some specific places such as around the neck, the centre back, the shoulders and some of the hem, the structures were placed randomly either pointing up or down (if it 'points' up, or 'points' down, was dictated by the outer two insertions at '10 and 2 o'clock'), although the placement on the dress followed a strict 'half drop' pattern (see RDJ fig. 6.99 for diagram), but due to the sheer number of embellishment on the dress, this random pointing up or down had no dominant effect on the overall mass. However, where possible I followed the half drop repeat pattern (see RDJ, fig. 6.99 for a diagram).

The dress was problematic to embellish despite not constructing the tensegrity structures directly on the flat fabric. For example, working with black thread and black embellishment on black fabric and dress was difficult to see. The size of the structures and the movement of the films has also made it awkward to work with when hand sewing one structure after another, next to another and so on. The horizontal fin of the base sequins was also a slight issue, with the fold of the base sequins working against the curves around the body and dress, but it was not as much of an issue as I thought it would be; where there was a slight awkwardness to where and how the base sequins were attached to the dress, this was hidden by the proxemic mass. However, *The Eclipse Dress* was successful in terms of the production of new practice that embodies the proxemic space of the wearer. It made solid and rendered visible the invisible notions of personal territory as well as extending the boundary and personal territory of the body/garment out to space.

In the videos of a model wearing *The Arnhem Bodice* and *The Eclipse Dress* produced for this study (see *Appendix 3* for links to all the YouTube videos for this study) demonstrate the difference between the tensegrity embellishments used on these two garments; *The Arnhem Bodice's* tensegrity structures are rigid and do not move unless manipulated by hand, whereas *The Eclipse Dress's* mass of eclipsed, negative space sequins move and make a soft sound when the model walks, drawing parallels with the feathered Givenchy, Balenciaga and Halpern dresses (figs. 3.55-3.58), however, *The Eclipse Dress* is made from plastic zero waste sequins and the overall proxemic silhouette is harder and more angular, even if the silhouette is similar to the feathered dresses.

*The Eclipse Dress* embodies proxemic space, specifically intimate proxemic space (0-45cm). It was not possible to conduct experiments of a model wearing the bodice or dress in public spaces due to COVID-19 restrictions, and as a potential area for further investigation, this will be discussed in the *Conclusion* of this thesis. However, it is possible to theorise about the implications of my practice when worn, by discussing how proxemics and personal space can be tested in the next section.

Intention	Action		Reflection on the finished <i>Eclipse Dress</i>
1		✓	The finished <i>Eclipse Dress</i> ; The technique challenges conventional and historical methods of embellishment using evaluation and reference as a measure; 'research for practice' (1). The embellishment explores and embodies practice using the stereometric method and tensegrity (2). Notions of body and space are embodied through practice, applying the stereometric method and tensegrity to explore proxemics (4). The embellishment can be applied to a material (fabric) (5). The technique and embellishment can be applied to the body through a garment as carrier (6). The structures supplement the surface of the fabric and build into proxemic space (7). Although the eclipse sequins do not enable building out to space incrementally (8), they extend out to space 28cm out to intimate proxemic space.
2		✓	
3		✓	
4		✓	
	5	✓	
	6	✓	
	7	✓	
	8	N/A	

Please see page 67 for the full practice evaluation criteria.

## Testing proxemics and personal space

Graziano writes that it wasn't until after (exact time unspecified by Graziano, 2018) Hall published *The Hidden Dimension* in 1966 that psychologists began to test theories of proxemics and personal space, however Robert Sommer published the findings of his experiments into personal space in the journal *Sociometry* in 1959 (approximately seven years before Hall's theories of proxemics) exploring how schizophrenic and non-schizophrenic people in a hospital 'arrange themselves when they are interacting'<sup>37</sup> (Sommer, 1959: 259). In later experiments (when is not specified by Graziano), 'volunteers were asked to walk towards each other and stop when the interpersonal distance began to feel uncomfortable' (Ibid., 22). What scientists discovered through these experiments is that personal space expands with anxiety (Ibid., 22-23), is further reaching at the front rather than the sides and back of the body ('anisotropic') and when necessary, it can compress, for example when travelling during rush hour on public

<sup>37</sup> Schizophrenic people were found to have larger areas of personal space.

transport. Versions of these experiments are still used to explore nuance of personal space and distance such as those discussed by Høgh-Olesen (2008) and Welsch et al. (2019).

Psychologists are not alone in testing notions of personal and intimate space; the artists Marina Abramovic (1946) and Ulay (1943-2020) collaborated over the period 1975-1988 and their work together was concerned with performative embodied interrogation of binary oppositions such as male/female and active/passive (Richards, 2018: 19; Summers & Santone, 2000). In 1977 they collaborated on a performance called *Imponderabilia* in Bologna, Italy (fig. 6.85). Both artists stood naked facing each other in doorway in the Galleria Comunale d' Arte Moderna and visitors were invited to pass between them in order to enter the space beyond. The artwork creates discomfort for both artist and participant as intimate and personal space is invaded ('one of the biggest problems, apart from closeness and the rest, is the visitors step on your feet' Abramovic in conversation with Laurie Anderson in *Modern Painters*, 2010: 68). It is not clear if the exact purpose of the performance was to test notions of proxemics and personal distance, however the artists are directly and deliberately challenging the participants to compress their personal space, territories, and boundaries, in order to squeeze through the door. The proximity to strangers (both for the artists and the visitors) is compounded by Abramovic and Ulay's nudity, making the situation beyond the usual social norms; their nakedness challenges social boundaries of how we feel about being in close proximity to undressed strangers.



Fig. 6.85 *Imponderabilia* Marina Abramovic and Ulay, 1977-2017. Photographs © Marina Abramovic courtesy Lisson Gallery.

The academic Heidi Overhill tests Hall's notions of proxemics in what she calls 'apple pie proxemics' (Overhill: 2014) exploring the interactions of two people (herself and her husband) carrying a hot apple pie in a kitchen 'work triangle'; a 1913 diagram by the American home economist Christine Frederick illustrating the 'chain of steps' taken while working in a kitchen (Ibid., 67, fig. 6.86). This experiment tested this 'work triangle' finding that it neglected body volumes or the spacing between multiple users (notions of egocentric and allocentric space, discussed earlier in this chapter), as well as identifying that

... both physical and social proxemics are important... where zones of potential social conflict are generated whenever two workers wish to use the same space at the same time (Ibid., 82).

Personal space is an egocentric 'protective bubble' or 'portable territory' (Hall, 1966; Høgh-Olesen, 2008: 247) with the body at the centre. What Overhill argues is that this does not account for the diverse volume of bodies (or multiple bodies) when using proxemics to plan spaces. The 'ground zero' of personal space does not happen at some

internal mid-point in the body, as assumed in Frederick's diagram, and it would be better measured from the surface of the body outwards. As established in Chapter 5, the surface of the body is complicated by clothing, and it is actually from the surface of the garment that we measure proxemics.

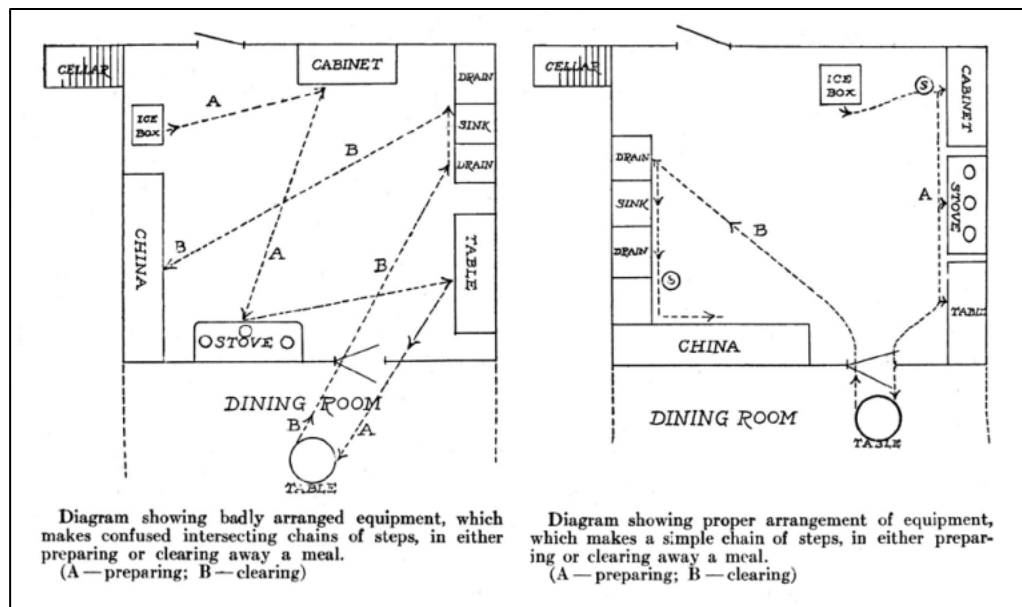


Fig. 6.86 Christine Frederick, diagram of 'badly arranged' and 'proper' equipment in the kitchen, 1912. Image from Overhill (2014).

*The Eclipse Dress* embodies the notion that proxemics should be measured from the surface of the body/garment; the tensegrity technique for fashion embellishment supplements the silhouette and extends the boundaries of the body/garment through the embodiment of stereometric volumes out to the immediate surrounding space. This dress and *The Arnhem Bodice* (discussed in the previous chapter), make visible the implied space of personal proxemics as well as increasing the volumes of the body which potentially, according to Overhill's research, affect notions of egocentric and allocentric space and will affect how the wearer of these garments moves through space. My practice and this study demonstrate how embellishment, when applied to the body enable the negotiation and visualisation of space.



Figs. 6.107 -6.110 The finished *Eclipse Dress*. Photographs © Richard Sorger. Model: Hannah Martin.

## Conclusion

In this chapter I discuss the conclusion of my practice for this study. I experimented with building taller tensegrity structures with longer bugle beads but rejected them as too complicated for the application to the body/garment. I moved onto experimenting with



new component forms, before arriving at the eclipsed sequin that is used as multiples on the final piece.

I have discussed spatial theory, complicating Hall's notions of proxemics much further by discussing the theories of territories and how personal spaces can be viewed as inseparable from body, as argued by selected social scientists in this chapter. This builds on the argument from the last chapter that through the application of parergonal space to my practice, these spaces can be viewed as part of the body/garment and by extension, part of the embellishment as well.

I discuss allocentric and egocentric space and how we navigate these spaces with our bodies. There is not always a clear demarcation between our bodies, our personal space, and the space that we move through such as allocentric space. And this is further complicated by the individual's notions of personal space which may change depending on the circumstances. Theories of personal space are complicated by the inclusion of fashion and dress, body, and garment, and as demonstrated, embellishment further complicates this discussion. The practice realised as *The Eclipse Dress* (figs. 6.107-6.110) answers the aims for my practice as outlined in the *Introduction* to this thesis; notions of body and space are embodied through this practice, by using the tensegrity technique for embellishment and the stereometric method to make the implied space of proxemics visible and solid.

*The Eclipse Dress* is so-called because the individual sequins 'eclipse' the circular void in the offcut film of each structure, but now, on completion another eclipse becomes evident; the sheer mass of the tensegrity structures now eclipses the body/garment of the wearer, embodying theory discussed in Chapter 5 where body, garment, and embellishment become inseparable and indistinguishable from one another. *The Eclipse Dress* makes visible Hayduk's definition of personal space 'the area individual humans actively maintain around themselves into which others cannot intrude without arousing discomfort' (1983: 118) and despite being a soft proxemic embellishment, the materials of the dress -cut plastic film- can act as a deterrent to an invasion of personal space.

Proxemic space is traditionally measured from the surface of the body. I have demonstrated that the use of the tensegrity technique extends the body's boundaries further out to space. The boundaries of where the body end and where proxemic space begins are blurred by the theory of parergonal space. *The Eclipse Dress* embodies intimate proxemic space, reaching out 28cm from the surface of the body/garment. The dress extends the body's silhouette out to space, creating a new boundary as well as augmenting personal portable territory, making embellishment essential to amplifying how we experience space.

# Conclusion

## The conceptualisation of fashion embellishment

This doctoral study integrates theory and practice to expand the subject of fashion embellishment and to develop the conceptualisation of fashion embellishment for the first time from the perspective of fashion practice. In Chapter 2, the first part of the contextual review for this thesis, I examined the historiography and materiality of the basic components for fashion embellishment and in particular I navigated the complex etymology of sequins. This established the historical context for the study of embellishment in contemporary fashion practice.

However, it was in Chapter 4 that I began to conceptualise embellishment through the engagement with Derrida's theory of supplementarity to discuss what happens when the raw materials of embellishment -sequin, bead, thread- are grafted to a base fabric. Supplementarity is not a simple addition; it fulfils an essential lack and through its addition, it 'adds only to replace' (Derrida, 1967: 145). This was foundational to my argument that fabric and embellishment complete each other and become inseparable. So, in terms of the practice of embellishment, the embellishment completes the fabric in a way that the two are fused together and inseparable. Therefore, embellishment is also not a simple addition, and it can be viewed as a 'completion'. This conceptualisation drawing upon Derrida, articulates what I have always felt about my practice; that the fabric, and the design itself, are not complete until the fabric has been embellished. This drive to embellish can be seen in examples of practice produced as part of my eponymous brand; there are no garments that are not embellished with design (the graphic motifs rendered in sequin, bead, and thread).

In Chapter 5 I discussed how Barnard theorises that clothing and fashion are tools and have a social and cultural function. He uses the theory of supplementarity to argue that clothing is not just an addition to the body, that our bodies are not complete until they are dressed, and they make the body and the social self possible. Barnard develops this argument to state that as tools, clothing and fashion can be viewed as prosthesis;

something that is added to the body and without which the body would be incomplete. I argued that if garments are prosthesis and extensions of the body, then it can be argued that embellishments, when applied, can be viewed as prosthetics also. This is possible because supplementarity conceptualises the fusing of fabric and embellishment and in Chapter 5 I discussed how body and garment are conceptually inseparable using the arguments of Gautier (Gautier & Lehmann, 2017), Barnard (2014), Entwistle (2000) and Soper (2001). The material that makes the garment, in terms of my practice, is fused with and inseparable from embellishment and therefore embellishment can also be considered as part of the body when worn. This is important because embellishment can now be viewed as more than a simple addition to fabric, but inseparable and when used, it is a tool that enables the completion of the body.

I argue that this new conceptualisation of embellishment, as inseparable from the fabric and body, and as a prosthetic that enables expressions of the cultural self, can therefore be applied universally to all embellishment practice as a result of this study.

## **Tensegrity technique, proxemic embellishment, and personal space**

As I have discussed above, the conceptualisation of fashion embellishment can be applied to all embellishment practice. However, the application of theories such as Derrida's discussion of *ergon* and *parergon* in Chapter 5 and the spatial theory discussed in Chapter 6, in terms of embellishment practice, are specific to the work produced during this PhD study: the tensegrity technique, *The Arnhem Bodice*, and *The Eclipse Dress*, and the examples of proxemic embellishments cited in Chapter 3. It was only through the conceptualisation of embellishment practice as discussed in the previous section, that I was able to engage with and negotiate spatial theory -such as proxemics, egocentric and allocentric space- through practice. Having established the body/garment and embellishment as inseparable, I was then able to engage with spatial theory concerned with the body.

As discussed in Chapter 4, the practice for this research quickly produced a new technique for embellishment; the tensegrity technique. The tensegrity technique uses the

sculptural tools of Snelson's tensegrity and Gabo's stereometric method for fashion embellishment for the first time by me and fashion practice in general. These tools supplement the fabric using the traditional embellishment components of sequins, beads, and thread, together with the implied volumes of stereometrics, creating three-dimensional structures beyond the surface of the fabric and reaching out to the space around the body.

The tensegrity technique and proxemic embellishments such as those referenced in Chapter 3, when applied to the body through the carrier garment, as demonstrated by *The Arnhem Bodice* and *The Eclipse Dress* produced for this study, can be understood as the parergon to the body's ergon; the body's surrounding frame. This frame occupies liminal parergonal space as discussed by Richards (2008) in Chapter 5 that can be viewed as both part of the body but also the surrounding space. Parergonal space defies 'any simple ordering... of inside or outside' (Richards, 2008: 38) and therefore, the stereometric volumes that are conceptually a part of the tensegrity technique and the finished *Arnhem Bodice* and *Eclipse Dress*, can also be simultaneously viewed as part of the body as well as the surrounding space.

This becomes more obvious in the tensegrity embellishment of *The Arnhem Bodice* (discussed in Chapter 5) where the stereometric volumes become larger between the solid forms of the components at the furthest reaches that radiate from the body/garment's surface. This starts to 'blur' where embellishment, and by extension the body, begin and end. Soper asks where the body end and clothing begins (Soper, 2001: 13-32), but parergonal space develops this question by arguing that, in terms of proxemic embellishment and the practice produced for this study, there is no clear point where the body/garment ends and the surrounding (personal) space begins. This 'porous and ambiguous body edge' (Sara & Littlefield, 2014: 299) forms the boundary of the body (Entwistle, 2000: 232). It is proxemic embellishment that makes possible the extension of the boundary of the body; a new boundary, pushed to the very tips of the embellishment and in the case of *The Eclipse Dress*, a boundary that flutters and moves around the body (see YouTube Video 9: *The Eclipse Dress* <https://youtube.com/shorts/8noLxKAFz6c>; Video 10: *The Eclipse Dress (Closer)*)

<https://youtube.com/shorts/GglUshpfK5M>; Video 11: *The Eclipse Dress (Movement)* ([https://youtube.com/shorts/Dm8FC\\_1Vf8E](https://youtube.com/shorts/Dm8FC_1Vf8E)).

In Chapter 6 I argued how embellishment, through its conceptualisation, can be used as a spatial tool to navigate and experience personal space. I first contextualised space by briefly discussing Massey's ordering of social space which is made up of individual territories (Massey, 1994: 120), but it is the individual territories, or personal space, as defined by Hall and Høgh-Olesen that this study is concerned with; the egocentric 'protective bubble' or 'portable territory' (Hall, 1966 and Høgh-Olesen, 2008: 247) that we carry with us when we move through allocentric space.

Proxemic embellishments, such as the tensegrity technique used on *The Arnhem Bodice* and *The Eclipse Dress*, make visible the personal space surrounding the body through the application of the stereometric volumes of the tensegrity technique. These embellished garments also increase and extend the boundary of the body out to space, increasing the portable territory, and therefore enabling the wearer to experience their bubble of surrounding personal space.

Overhill (2014) demonstrates that proxemic spaces are measured and negotiated from the surface of the body. *The Arnhem Bodice* and *The Eclipse Dress* use hard and soft proxemic embellishments respectively to first make visible intimate proxemic space, 0-45cm from the surface of the garment, as defined by Hall (1966). Because these garments also extend the boundary of the body/garment through the use of spatial embellishment, they have the potential to enhance the wearer's awareness and understanding of their territory as they move through and negotiate allocentric space.

This integration of fashion embellishment practice and theory demonstrates how this study has expanded current understanding of the subject of embellishment. Initially this occurred through conceptualisation of all embellishment practice, but it is only through the development of practice for this study that I identified and defined proxemic embellishments (see Chapter 3 for examples) and developed the tensegrity technique used on *The Arnhem Bodice* and *The Eclipse Dress*. This technique engages with spatial

theory, and the proxemic embellishments in turn have the potential to amplify the experience of space for the wearer.

## Contribution to Knowledge

The Contribution to Knowledge for this study is summed up by the following three points-

- This thesis brings together and reviews the literature on the history, materiality, and production techniques of fashion embellishment, with a particular emphasis on sequins.
- This research integrates practice and theory to develop the conceptualisation of fashion embellishment from the perspective of a practitioner. This perspective, and the application of selected interdisciplinary theories to the subject, enables embellishment to be considered beyond the confines of fashion theory and its history.
- The practice for this doctoral study develops a new technique for fashion embellishment that uses sculptural tools for the first time in its production.

As outlined in the Introduction of this thesis, there is paucity of literature concerned with the subject of embellishment. This study draws together studies of embellishment for the first time capturing the historiography of the subject in terms of materiality and technique. This thesis cross-referenced key texts to give a clearer overview and definition of the components of embellishments -sequin, bead, and thread- with a particular emphasis for the first time on the complicated history of terms for what is commonly referred to as a sequin the first time. This research also identifies key practitioners in the field of fashion embellishment for whom embellishment is key to their designs, such as Manish Arora, Ashish, and Elsa Schiaparelli. This is discussed in the Introduction to this thesis and in *Chapter 2: Contextual Review; Materials and Practice* and *Chapter 3: Contextual Review; Practice, Body, and Space*.

There is no literature that directly conceptualises the subject of fashion embellishment. This PhD study creates a dialogue between practice and theory and rethinks the subject of embellishment from the viewpoint of a practitioner and this adds a new perspective to the subject through practice-led research, research for design, and research through

design, using a methodology that foregrounds practice. This research brings into fashion discourse a range of approaches and theories from diverse disciplines, such as supplementarity and spatial theory, to think about embellishment beyond the confines of fashion theory and the history of the subject, to develop how embellishment can be viewed and used. This study redefines and expands the understanding of what embellishment means through the engagement with these theories, but it also demonstrates how embellishment can be used to experience space through practice and theory.

The approach to practice for this study has been vastly different to my experience of producing commercial fashion collections for my eponymous brand. For my label I produced two to four seasonal collections a year, and each collection was stand-alone in thematic terms. The work produced was dictated by the timeline of production; working backwards from when the finished sample garments needed to be ready. There was always a definite deadline about when experimentation had to finish so that the final garments could be completed. It often felt that there were still thematic ideas, designs and techniques, that could be explored further but the lack of time prevented their development. The length of time allocated to this research meant that a substantial body of work was produced, assisted by a lengthy reflective process, compared with the fast pace of designing for production. This is the first body of work that I have produced when I am satisfied with the exploration and outcomes I have achieved.

I introduced the tensegrity technique for fashion embellishment in *Chapter 1; Methodology* and I have discussed its development throughout this thesis; how the practice of embellishment supplements fabric, what happens when embellishment practice is applied to the body, and how the embellishment/body/garment engage with spatial theory to renegotiate personal space. The tensegrity technique for fashion embellishment uses the sculptural tools tensegrity and the stereometric method to make visible and solid the implied volumes between structures as well as the proxemic space surrounding the body. This is the first time that these sculptural tools have been used for embellishment and the first time that embellishment has been explicitly used to explore notions of space.



This research has enabled the development of practice through a multitude of experiments and reflections in the Reflective Design Journal (RDJ), creating a process that is not possible working within the fashion industry where practice is dictated by the number of seasons in a year. The RDJ enabled research *for* design and research *through* design -as defined by Frayling (1993) and discussed in *Chapter 1: Methodology*- as a place to record and reflect on the practice for this study. It was a place where I could return to previous experiments and comments made at the time to develop or improve iterations of these experiments. There were several moments during this research when I felt I had reached a 'dead end' in a particular avenue of exploration and the RDJ was an essential document to return to; not only because it recorded all the experiments with directions on how to replicate them, but it was also a place of inspiration. I found the diagrams and the content of the work I had produced exciting and full of potential, and this in itself would provoke me to attempt new work.

For this PhD study I produced over fifty iterations of the tensegrity technique which demonstrates a depth of investigation as well as exploring the technique thoroughly in terms of scale, components, and forms, plus its application to the body and what this means. There has been ample opportunity to reflect and review the practice produced for this study, and it has also allowed for the exploration of avenues of research that have not been successful such as growing salt crystals and fungi for potential embellishment usage (these experiments are discussed in Chapter 4).

On a personal note, I never imagined that this study would involve so much theory and it has been incredibly challenging but ultimately rewarding to engage with areas of thought not directly connected to my subject. As a fashion practitioner, it is not usual to engage with fashion theory, let alone Derrida's writing or spatial theory. However, through the process of this doctoral study, I have honed my analytical thinking, and this richly rewards my practice and my academic career; I am now better able to construct and dissect an argument, and the delivery of my teaching has improved because I am better equipped to explain an idea or to analyse what the needs of a situation might be. I have grown

through the process of this study, and I am now a more reflective and articulate practitioner.

## How this study answers the Research Questions

The first research questions for this study asked; *How can the development of a new technique for fashion embellishment be used to explore the relationship between the body, garment, and the immediate surrounding proxemic space?* The tensegrity technique, a new embellishment technique developed for this study, is the first time that sculptural tools -tensegrity and the stereometric method- have been used in the production of embellishment. These sculptural tools are what makes possible the building of embellishment out to space. The technique uses traditional embellishment components, sequins, thread, (and to some extent beads, though not used in the final garments for this study), to build from the surface of the fabric, garment, and body, and out to space. The stereometric method 'solidifies' the implied volume beyond the surface of the body/garment that is made visible through embellishment. It is the spatial quality of the practice that is new and enables the exploration of body/garment and space.

The tensegrity technique has proved to be quite versatile and for this study I have produced a multitude of samples as documented throughout this thesis, and two garments, *The Arnhem Bodice* and *The Eclipse Dress* (discussed in chapters 5 and 6 respectively). These two garments demonstrate the versatility of the tensegrity technique, creating two very different pieces; the embellishment used on *The Arnhem Bodice* is a hard proxemic embellishment (a rigid structure, see Chapter 3). It has a more obvious and apparent structure, the circular forms of the sequins are very visible, and a closer inspection easily reveals to the viewer the thread and tension that supports the individual structures. As a contrast, *The Eclipse Dress* is a mass of soft proxemic embellishments (a less rigid and more tactile form of embellishment discussed in Chapter 3) that have more movement, especially when worn. The individual structures are less apparent; a 'swarm' of embellishment. The dress 'eclipses' the body of the wearer, confusing where one begins and the other ends thus embodying fashion theory concerned with the inseparability of the body and garment and making the porous edge of the body more ambiguous. The dress extends the boundary of the body and

simultaneously increases personal territory. The embellished garments produced for this study, become extensions of the body, prosthetics (as defined by Barnard and discussed in Chapter 5), and they become essential to how the wearer experiences space. Both these garments further our understanding of embellishment and establish how clothing is essential to how we experience space.

The tensegrity technique differs from the examples of proxemic embellishments cited in *Chapter 3: Contextual Review; Body and Space* because of the use of traditional components and the explicit use of sculptural tools. Iris van Herpen (figs. 3.32-3.38) and Hussein Chalayan (figs. 3.39-3.40 and fig. 3.45) use technology and new materials in the production of proxemic embellishments. Noir Kei Ninomiya uses metal (figs. 3.39-3.31). The use of feathers for proxemic embellishment dates back to the example of the Balenciaga dress from 1965 (fig. 3.57), and it can be argued that this is an established and ‘traditional’ embellishment component and material, however, as demonstrated in Chapter 2, the use of sequins, beads, and thread has a much longer and established history for embellishment. This research also demonstrates how the application of the tensegrity technique has developed into diverse structures and forms, culminating in two garments using very different versions of this technique; *The Arnhem Bodice* and *The Eclipse Dress*. Another difference between my work and the proxemic embellishments of these practitioners is that my practice is underpinned by theory; fashion theory, spatial theory, art history, cultural studies and anthropology. This integration of practice and theory was discussed at the beginning of this chapter.

The second research question asked; *How can the subject of fashion embellishment be conceptualised using selected interdisciplinary theories to expand its meaning?* In Chapter 4 I used complementarity to discuss what happens when embellishment is applied to fabric and how, in terms of my practice fabric has an essential lack that is not complete until it is embellished; firstly, in terms of my practice, fabric that lacks embellishment lacks design and so embellishment fulfils design. Secondly, fabric alone is not enough to explore proxemic space and so embellishment is the supplement to fabric to make this possible. In Chapter 5 I discuss fashion theories that argue that the body and garment are inseparable. As established in Chapter 4, embellishment and fabric supplement each

other and make each other complete. So, if body and garment are inseparable (the body/garment), then embellishment, when used, is also inseparable from the body. If fashion and dress are essential to expressions of the dressed and fashion body, as argued by Entwistle and Barnard, and according to Barnard can be viewed as a tool, a prosthetic, that makes the body possible, then embellishment is also a prosthetic that can also make the body possible.

The final research question asked; *How can practice question notions of personal space and proxemics through the extension of the boundaries of the dressed body, using embellishment as a spatial tool to achieve this? The Arnhem Bodice and The Eclipse Dress* both answered this by using the tensegrity technique to build stereometric volumes into the proxemic space surrounding the body. They supplement the silhouette and extend the body's boundaries, creating ambiguous parergonal space, that is no less solid because it is implied volume. I argue that clothing is essential to our perception of personal space, and that by extension, embellishment, when used, is also essential to how we experience egocentric and allocentric space because it embodies proxemic space and enables the wearer and viewer to visualise space, boundaries, and territories.

## **How this study answers the Aims and Objectives**

### **Aims**

As outlined in the Introduction to this thesis, this study had multiple aims and objectives;

1. *To produce a body of practical work that explores the key themes of 'material', 'practice', 'body' and 'space', in the context of specific spatial theories. The practice produced for this research demonstrates these key themes as evidenced in the chapters relating to each theme.*
2. *To negotiate the concept and understanding of fashion embellishment through its application via garments to the body and its proxemic space. My practice has been conceptualised in Chapters 4, 5, and 6 through discussion with interdisciplinary theories in order to expand the meaning and use of embellishment.*

3. *To explore the boundaries of body, garment, and proxemic space.* The final pieces for this study embody proxemic space as well as discuss the boundary of the body through theoretical concepts.
4. *To use interdisciplinary sculptural theories as tools to develop new embellishment technique,* as evidenced in the use of tensegrity and the stereometric method to produce the tensegrity technique for fashion embellishment.

## Objectives

1. *To identify gaps in current literature through research into the history and development of fashion embellishment.* This is discussed in the *Introduction* and Chapters 2 and 3 of the contextual review.
2. *To undertake a review of key fashion practitioners whose work is concerned with the four key themes: 'material', 'practice', 'body' and 'space'.* This is discussed in *Chapter 2: Contextual Review; Material and Technique*, and *Chapter 3: Contextual Review; Practice, Body, and Space*.
3. *To identify the spaces relating to the body and garment and the boundaries they create by using selected fashion theory as well as selected theories from social science and how they contribute to spatial theory.* This is discussed in Chapters 5 and 6, by discussing parergonal space in relation to embellishment; how stereometric tensegrity structures occupy but do not 'own' the space surrounding the body. They do, however, expand the boundary of the body. In Chapter 6, proxemics is discussed through the frame of anthropology and psychology and how they affect our perception of- and movement through- allocentric space.
4. *To explore the proxemic space beyond the surface of the garment; intimate and personal distances, through the concept of embellishment.* The three-dimensional tensegrity technique on *The Arnhem Bodice* reaches out 12.5cm into proxemic space, and *The Eclipse Dress* extends out 28cm into intimate proxemic space.

# Summary of chapters

## Chapter 1: Methodology

In *Chapter 1: Methodology*, I introduced the key terms of this study such as Edward T. Hall's proxemics, and the sculptural tools of tensegrity, as used by Kenneth Snelson, and Naum Gabo's stereometric method. I also introduced the practice produced prior to this study, in particular *The Proxemic Dress* (2014) which was an instrumental influence on the direction of research for this practice-led PhD research.

I introduced the basic principles of the tensegrity technique, a new technique for fashion embellishment that was developed for this research, that utilises tensegrity in its structure and the stereometric method in its outcome; real and implied volume is added to the surface of a fabric, using traditional components for embellishment (sequin and thread) and tension.

My methodological approach for this study was 'research for design' and 'research through design' as defined by Frayling, but complicated by Bulley and Şahin (2021), and Kaszynska et al.'s (2022) discussions of 'practice research in design' and the 'Triple S' scheme of 'situational', 'situated' and 'situating' (2022: 2), that my approach embodies. The term I use to encompass all of these approaches is 'design as research'.

Much of the practice produced for this doctoral study employs 'thinking through making' as a method, but another key approach to the production of practice for this study was the Reflective Design Journal (RDJ) and the reflection enabled through the notes and diagrams contained in its pages.

## Chapter 2: Contextual Review; Material and Technique

Chapter 2 and Chapter 3 formed the contextual review for this study. Chapter 2 focused on the materiality and techniques of embellishment by bringing together literature on the history, materiality, and production techniques of fashion embellishment. The basic components for embellishment -sequins, beads, and thread- were discussed, first by examining the complicated etymology of sequins.

The historiography of sequins, and beads, and thread, were investigated as was the materiality of these components. I then moved onto the discussion of other materials, first by discussing the historic and problematic use of feathers for embellishment, before discussing innovations such as the use of peace silk, silicone, and concrete, for fashion embellishment. I then discussed techniques employed in the production of embellishments. First by discussing the techniques and practice produced by hand, such as the Lunéville method that employs the tambour hook to produce embellishments and the vermicelli stitch ('vermicelli droit fil') developed by Albert Lesage which enables embellishment onto stretch fabrics. Finally, I briefly discussed the development of machines used for fashion embellishment.

### **Chapter 3: Contextual Review; Practice, Body, and Space**

Chapter 3 began by discussing practitioners for whom embellishment is key; I discussed designers such as Elsa Schiaparelli and Ashish Gupta for whom embellishment is essential to the work itself, and designers who have used embellishment to express conceptual ideas such as Miucca Prada and Viktor & Rolf. The discussion of the former (Schiaparelli and Gupta) lead into my discussion of Derrida's supplementarity in Chapter 4 and the latter (Prada and Viktor & Rolf) outlined how embellishment can be conceptualised through a new reading of practice.

I moved onto discussions of supplemented 'solid' silhouettes that extend the body and boundary of the wearer, citing examples of historical clothing, such as crinolines and bustles, and contemporary fashion, such as Rei Kawakubo's *Comme des Garçons' Body Meets Dress-Dress Meets Body* collection from 1997. I then discussed examples of supplemented silhouettes that could be read as employing the stereometric method to create volumes from material and space. I moved on to discuss the space between the body and garment, introducing the Japanese spatial concept of *ma* (which was explored further in Chapter 5) and I used *ma* to frame my discussion of fashion and architecture with the examples of Lucy Orta and Rick Owens which both supplement the silhouette.

The chapter concludes with examples of hard and soft proxemic embellishments from contemporary fashion, by practitioners such as Noir Kei Ninomiya, Iris van Herpen, and Hussein Chalayan, that are closest to the practice I produced for this research. This study draws parallels with the examples of sculptural clothing mentioned in this chapter, but it creates new practice via the tensegrity technique for fashion embellishment as embodied by *The Arnhem Bodice* and *The Eclipse Dress*.

## **Chapter 4: Material into Practice**

In *Chapter 4: Material into Practice*, I explained materiality and technique in my own practice. I examined early decision making about colour and the choice of components, such as the move from sewing thread to embroidery thread in the tensegrity structures, as well as discussing the further iterations of the tensegrity technique. The title of this chapter *Material into Practice* in part refers to what happens when the materials of embellishment -sequin, thread, bead- are applied to the fabric through practice (practice in this sense refers to technique), but practice also refers to the outcome of the work.

In this chapter I began to conceptualise embellishment practice by drawing on Jacques Derrida's theory of supplementarity. I argued that embellishment can be viewed and practiced as a supplement and in terms of my practice it completes fabric. Embellishment as supplement also allows my practice to begin to negotiate proxemic space. It can also be viewed that supplementarity supplements the subject of embellishment; it gives meaning where there was none before.

## **Chapter 5: Practice onto Body**

The practice discussed and illustrated in this chapter is first concerned with the early application of the tensegrity technique onto the body, represented by a mannequin, and how I explored and assessed the effectiveness of the structures at various points on the 'human' form. These initial experiments were completed in 2016, and in 2019 I developed first *The Arnhem Toile*, and then completed *The Arnhem Bodice*.



In *Chapter 5: Practice onto Body* It was first necessary to discuss the differences between 'fashion' and 'dress' and how the fashioned body and the decorated body contribute to notions of the social and cultural self, establishing what 'fashion' and 'dress' mean in relation to this study. I brought together fashion theory by Entwistle and Barnard about how fashion and dress are essential to notions and expressions of the cultural self. Barnard argues that there are no bodies that are not *dressed* in fashion, even when naked, and it needs adornment to exist. Barnard takes the discussion further by arguing that clothing, dress, and fashion, are tools (prosthetics) that make our bodies possible, and I extrapolated from this, arguing that embellishment should also be viewed as a prosthetic. Dress and fashion are needed to situate our bodies in culture and society, essential to our identities and as tools and prosthetics, they supplement the body. Embellishment, when present is an inseparable part of the body and garment and in this context, it is a prosthetic that makes the (human) body possible.

By moving my practice from individual structures and onto the body and ultimately a garment, it was necessary to discuss the relationship between the body and garment using selected theories to first establish that we experience the world through our bodies and, because all bodies are established as dressed bodies, clothing is also essential to how we experience the world.

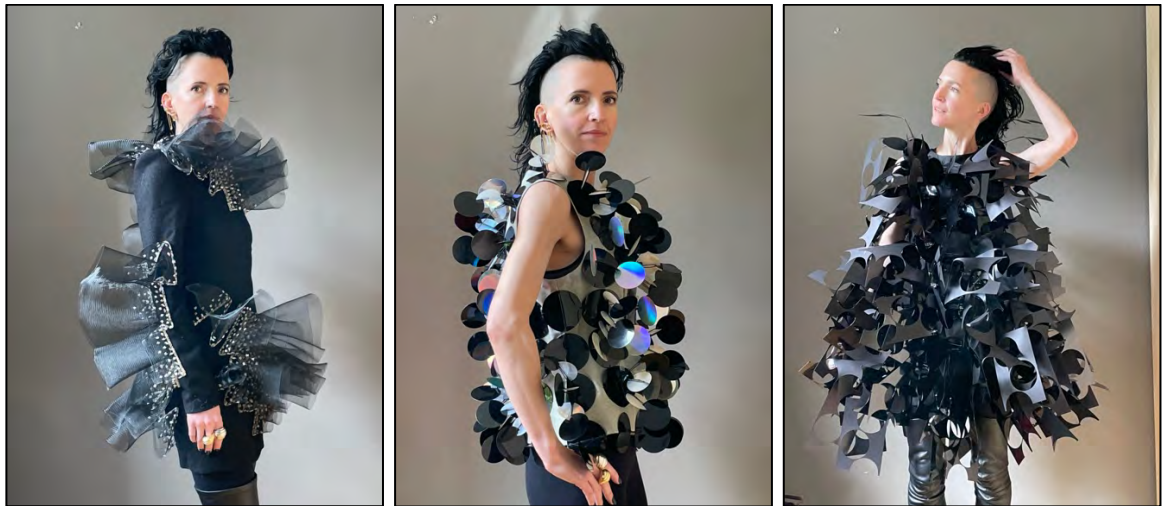
I discussed how the body and garment can be viewed as inseparable by using discussions of Gautier, Entwistle, Barnard, and Soper. By introducing to the discussion Derrida's notions of ergon and parergon, and then Malcolm Richards' parergonal space, I drew parallels with the stereometric method. I concluded that the parergonal space the tensegrity technique embellishments occupy on the surface of the garment, can be viewed as part of the body/garment and space. *The Arnhem Bodice* is conceptually part of the body when worn and extends the limits, boundary of the body, out to the exterior world, reinforcing the notion that proxemic embellishments can be viewed as the interface between the body and space.

## Chapter 6: Body out to Space

In *Chapter 6: Body out to Space* I moved beyond the surface boundary of the body/garment to discuss the relationship between the body/garment and the surrounding social space (territories). First by discussing social space to give context to subsequent discussions about space that are more concerned with the body at its centre. I discussed proxemics in more depth, complicating Hall's initial theories with those of Heini Hediger, Michael Graziano, Henrik Høgh-Olesen, and Heidi Overhill, including how we move through egocentric and allocentric space.

The practice in Chapter 6 is concerned with building proxemic structures out to space and how far they can reach. Although some interesting structures were produced, as documented in that chapter, their potential application to the body and garment was judged not to be successful due to their complexity, which would affect the overall aesthetic of the garment. It was not until I began to experiment with diverse forms of sequins, and the offcut films the sequins were cut from, that I arrived at a structure that had the potential to work on the body.

Proxemic space is traditionally measured from the surface of the body. I have demonstrated that the use of the tensegrity technique extends the body's boundaries further out to space. I discussed how personal space is viewed by the individual as territory and that my practice, in the form of *The Arnhem Bodice* and *The Eclipse Dress*, extends the boundary of where the body ends (in space) and simultaneously increases personal, portable territory, making embellishment essential to amplifying how we experience space.



Figs. 7.1-7.3: *The Proxemic Dress* (2014); *The Arnhem Bodice* (2019); *The Eclipse Dress* (2021). Photographs © Richard Sorger. Model: Hannah Martin.

## Potential areas for further investigation

This PhD study is finished, but its themes have the potential to carry on beyond the completion of this research.

### Testing practice in a wider context

Due to COVID-19 issues such as the various lockdowns we had in the UK, I was limited in how and when I photographed my finished garments on a model. Although *The Eclipse Dress* was finished on 15.10.21 it was not until 29.05.22 that I was able to photograph the dress, as well as *The Arnhem Bodice* and *The Proxemic Dress*, and that date itself had been delayed from an earlier plan because my model had COVID-19 at that time.

I photographed and videoed the model in my house, just the two of us, and even though COVID infections were not at serious levels in May 2022, threat of infection still clouded any behaviour. Because of this concern, I did not entertain the idea of using more than one model, nor could I consider taking the model into public wearing my pieces to gauge and test how body and dress interact with space and people in a wider environment, and this is potential area of future investigation for this research.

As a potential development after this study, I could take a model or models out into social spaces and then record the responses of the wearer and viewer; the models' perception

of wearing the garment in wider surroundings and the viewers' responses to being in close proximity to the model/body/garment. This would enable me to begin to evaluate responses and to test my practice in relation to proxemic, egocentric and allocentric spaces.

The embodied practice recorded in the series of eight videos made with a model wearing the three garments discussed in this study (the videos are discussed in *Experiential bodies* Chapter 5) also make apparent multisensory experiences and affects beyond how the garment looks. *The Eclipse Dress* makes sound, and how the surface of all garments feels for both wearer and viewer could be explored. Both haptic experiences -hearing and touch- and their relationship with embellishment practice offer areas for further investigation.

## **Journal papers**

During the process of this project, I have presented aspects of my research at conferences, the most recent being *A Not Unruffled Surface; Contemporary Sculpture and Dress* at the Henry Moore Institute 24.02.21, when I presented a paper called *BODY out to SPACE; Embellishment as a spatial concept* which focused on my use of sculptural tools for my practice. However, this is only one aspect of the research produced for this study and there are several themes that could be developed into papers. The aim is to now publish aspects of this project in accredited journals such as *Fashion Theory: The journal of Dress, Body & Culture* or *Fashion Practice: The Journal of Design Creative Process & The Fashion Industry*.

## **Collaboration with a fashion designer**

Another potential application for my project is to use it for fashion. I have no intention of producing commercial collections again as I did between 2006-2011, but this project offers the potential for collaboration with an established designer. This would take my practice out of the world of academia and into the commercial realm. My designer of choice would be Rick Owens; his work often employs supplemented silhouettes and new techniques, realised as sculptural forms. He is not a designer who employs much embellishment in his collections; any embellishment is usually in the form of sequined

fabric as a texture and colour. Therefore, I think there is a gap (a lack) that my practice could supplement. My practice isn't mass producible, but in the same way that haute couture is not for mass consumption, my practice could be used for catwalk showpieces, intended for press only.

A natural fit might be considered with the practice of Iris van Herpen, however, I do not believe that my practice would supplement or add to her existing work in a manner that she is not able to produce herself; unlike Owens, she already uses proxemic embellishments (see Chapter 2) and is concerned with new materials and technologies. The tensegrity technique can be viewed as using traditional components for new practice by using sculptural tools in its production.

## **Testing and defining ma**

One interesting turn in my research was the investigation of 'ma', 'mu', and the space that exists between the body and garment. I was not expecting to examine this space and although I have written briefly about the subject of ma as part of Chapter 5, it would be interesting to conduct some practice-led research that engages with this topic.

My initial practice-led response would be to inverse the tensegrity technique *below* the surface of the garment, next to the skin so that it elevates the fabric and increases the space between the body and garment. This is not without certain challenges such as how would embellishment feel against the skin and how can it be made to work? what base fabric would be suitable? And what would the form of the final garment take? This further study would again employ a methodology of 'design as research' and 'thinking through making' as well as a return to using a Reflective Design Journal to record thoughts, observations, and diagrams.

## **Reflection and refraction as a stereometric component for embellishment**

In Chapter 4 I first noted that reflection was an interesting property of using silver sequins (see Chapter 4, *Experiment 12b* (22.03.16), figs. 4.27) and the experiment developed

30.10.20 to 31.10.20 in Chapter 6 (see Chapter 6, Figs. 6.9-6.14). This illusion of multiplicity can further imply volume and could be an interesting area for future practice, resulting in a garment that uses the tensegrity technique and reflection to create stereometric volumes of implied (proxemic) space. This line of research would also involve engagement with theories about the reflection and what it means.

### **What can other practitioners gain from this study?**

The Reflective Design Journal documents all the experiments undertaken for this study. The intention for the notes and diagrams from the very beginning, was not only so that I could replicate an experiment, if necessary, but that the notes and diagrams should be clear enough for another practitioner to recreate my experiments. The notes in the RDJ enable this, but it is also hoped that a practitioner can develop a personal approach to using the tensegrity technique, advancing its use and forms.

I have expanded the knowledge of, and the meaning of, embellishment, giving meaning to the subject where there was previously none. Not only this, but I have discussed how the supplemented silhouette is essential to how we experience space. This is not only limited to the use of embellishment, and the interaction of fashion and space is underexplored and ripe for further research.

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# Appendices

## Appendix 1

### Academic Contributions

#### *Conferences*

##### **A Not Unruffled Surface: Contemporary Sculpture and Dress**

Henry Moore Institute, 24 February 2021

Conference paper: *BODY out to SPACE; Embellishment as a spatial concept.*

##### **Space for Fashion Thinking and Practice: Review, Reflect, Revise**

Fashion Research Network, Coventry University, London, 8 Sept 2017

Conference paper: *Building a New Technique for Fashion Embellishment; Tensegrity and the Stereometric Method.*

##### **5<sup>th</sup> International Conference on Global Fashion**

University of Stockholm, 20-21 Oct 2016

Conference paper: *Supplementarity, Embellishment and The Decorated Body.*

##### **Fashion: Exploring Critical Issues 8th Global Meeting**

Mansfield College, Oxford, 5-7 Sept 2016.

Conference paper: *Exploring the Meaning of Fashion Embellishment and Developing a New Technique.*

##### **The Body + Space**

Middlesex University, London, 18 Sept 2014.

Conference paper: *The Proxemic Dress.*



## Appendix 2

### The Proxemic Dress<sup>38</sup>

I:F Bodies + Space Conference: Representation and the body and space

Middlesex University September 18th-19th 2014

#### ***Abstract***

Clothing occupies the immediate space between the body and our surroundings. It can be protective and comforting and through the manipulation of silhouette, clothing can augment and define the notion of the personal space of the wearer.

Historically, the female silhouette in the West has been much more extreme than it currently is; through the use of volume, crinolines and padding, areas of the body have been exaggerated and a greater space around the body has been occupied by clothing. These exaggerated silhouettes (for example, the use of a farthingale skirt), were primarily 'fashionable', but a secondary effect would be to make intimate approach more difficult and therefore increasing the personal space around the wearer.

Personal space can be defined as the region surrounding an individual, which they regard as psychologically belonging to them. The anthropologist Edward T. Hall coined the term *proxemics* in 1963 to refer "to the distance between people as they interact" (Cherry, [www.psychology.about.com](http://www.psychology.about.com)) and he described four levels of personal space and social distance; intimate distance, personal distance, social distance, and public distance, ranging from zero to twenty-five feet.

Personal space is invisible, intangible. It is conceptual rather than concrete. It is 'implied space'. Between 1915 and 1917, the Russian Constructivist artist Naum Gabo explored the body and space, developing a revolutionary sculptural technique which he termed *stereometric*: through a series of figurative sculptures of two heads, a bust and a torso

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<sup>38</sup> This paper is presented in its original form (2014) and it has not been formatted in the same manner as the thesis.

that had an open cellular construction, Gabo represented “the space in which the existing mass is made visible” (Sidlina, 2012 p.30) through the absence of traditional sculptural solidity. He implied the mass of the body through the use of space.

For the I:F Body + Space conference (thread; Representation and the body and space) I propose to make an artifact (a dress) and use it to discuss notions of personal space and proxemics, employing Naum Gabo’s *stereometric* principle of implied volume; extending the dress beyond the body and making the personal space of the dress (and wearer) visible.

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Cornelia Parker interviewed by Alastair Sooke for The Telegraph online 24 May 2013  
[www.telegraph.co.uk/culture/art/10077197/Hay-2013-Artist-Cornelia-Parker-on-five-works-and-the-pieces-that-inspired-them.html](http://www.telegraph.co.uk/culture/art/10077197/Hay-2013-Artist-Cornelia-Parker-on-five-works-and-the-pieces-that-inspired-them.html)

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Caroline Evans and Susannah Frankel, *The House of Viktor & Rolf* (Merrell Publishers Ltd 2008)

Natalia Sidlina, *Naum Gabo* (Tate Publishing 2012) p.30

## The Proxemic Dress (Paper)

Richard Sorger

For the I:F Body + Space conference (thread; Representation and the body and space) I will discuss examples from art, design and fashion where personal space and the body have been explored. I propose to make a dress and use it to discuss notions of personal space and proxemics, employing Naum Gabo's *stereometric* principle of implied volume. Personal space is invisible, but it can be argued that it is psychologically and emotionally real. Through the use of various materials and techniques –primarily embellishment- I want to make the personal space of the dress (and the wearer) visible, extending the dress beyond the parameters of the body, exaggerating the silhouette and making the invisible visible.

According to the anthropologist Edward T. Hall, every living organism 'has a visible physical boundary- its skin- that separates it from its external environment' (Hall & Hall 1990 p.10). In terms of humans, this visible boundary (the skin) is surrounded by a series of invisible boundaries that are harder to define but no less real. These invisible boundaries begin with a person's personal space and end with their territory. Territoriality is 'the act of laying claim to and defending a territory' (Hall & Hall 1990 p.10) and is necessary to survival. Personal space is another form of territory.

Personal space can be defined as the region surrounding an individual, which they regard as psychologically belonging to them. It is an invisible 'bubble' or field that surrounds a person, expanding or contracting depending on circumstances such as the relationship to the person/s in the surrounding vicinity, their emotional state, their cultural background and what activity they are doing.

Clothing occupies the immediate space between the body, skin, and our surroundings. It can be protective and comforting and through the manipulation of silhouette, clothing can augment and define the notion of the personal space of the wearer.

Historically, the female silhouette in the West has been much more extreme than it currently is; through the use of volume, crinolines and padding, areas of the body have been exaggerated and a greater space around the body has been occupied by clothing. These exaggerated silhouettes (for example, the use of a farthingale skirt), were primarily fashionable, but a secondary effect would be to make intimate approach much more difficult and therefore increasing the personal space around the wearer. Ironically, while increasing the space around the wearer, some of the garments, for example the corset, would contract the body of the wearer, reducing physicality and the space of the body.



Illustrations c.1860 of a crinoline underskirt and the dresses it supported.

The anthropologist Edward T. Hall coined the term *proxemics* in 1963 to refer ‘to the distance between people as they interact’ (Cherry, [www.psychology.about.com](http://www.psychology.about.com)) or more specifically ‘the interrelated observations and theories of man’s use of space as a specialised elaboration of culture’ (Hall 1966 p.1). Hall described four levels of personal space and social distance; Intimate distance, Personal distance, Social distance and Public distance. For the purposes of this project I am mostly concerned with notions of Personal Distance and Intimate Distance.

Contemporary fashion still explores silhouette, but apart from extreme ‘show pieces’ intended for the catwalk, celebrities, and magazines, the silhouette impacts less on creating personal space around the wearer (in-built personal space) as, it could be argued, it once did.

It can also be argued that any enhanced silhouette explores notions of proxemics and personal space, but I would like to look at specific examples that can be used to illustrate the concept of proxemics and personal space.

## ***Public Distance***

Edward T. Hall defines public distance as the space of twelve to twenty-five feet around the individual. This distance is often used when speaking in front of an audience, such as when giving a lecture in front of a group of students or when separation from a crowd is required, for example when observing a public figure, or being observed. Cages and boxes can be used to create public distance (think: Hannibal Lecter in his cell during his initial interview with Clarice Starling in the film *Silence of the Lambs*). The *Popemobile* is the specially designed vehicle with the bulletproof glass box within which the pope sits and then is driven around. Although the space immediately around the pope (the confines of the glass box) is smaller than the definition of public distance, the box is about protection, visibility and keeping the public at a distance; the space around the pope extends beyond the *actual* physical dimensions of the box. He is raised above the crowd, highly visible and yet untouchable.

## ***Social Distance***

Hall defines social distance as four to twelve feet. It is literally beyond arms' reach. It is often used with casual acquaintances, some co-workers (depending on the relationship) and when interacting with people (possibly on a regular basis) with whom the individual doesn't have a close relationship. For example, a postman, shopkeeper, or ticket inspector.



Tilda Swinton sleeps in 'The Maybe' at the Serpentine Gallery 04 September 1995 in London. (Photo: Andrew Winning/AFP/Getty Images)

The artist Cornelia Parker collaborated with the actor Tilda Swinton on a piece called *The Maybe* (1995 and 2013). Swinton appeared to lay asleep on a mattress inside a glass vitrine for eight hours a day, like Sleeping Beauty in her glass coffin, and visitors to the

exhibition could watch. According to Parker, this made Swinton feel incredibly vulnerable, possibly in part due to her personal space being invaded by strangers, as well as being 'on exhibition'. The space around Swinton was further demarked by a line drawn on the floor, discouraging the public from getting too close to the artwork, but it is unlikely that anyone would press their face against the glass due to social conventions and a respect for Swinton's personal space. Swinton no doubt felt discomfort due to the close proximity of strangers, and the viewer would also feel this discomfort about invading Swinton's space. Parker's piece questioned and made visible the invisible boundaries of personal space.

### ***Personal Distance***

Hall defines personal distance as one and a half feet to four feet. This distance, according to Hall, occurs between people who are family members or close friends and refers to the distance between individuals while socializing. Personal distance could also refer to the distance between some co-workers (depending on the relationship).

In regards to clothing and fashion, exaggerated skirts such as those employing crinolines or farthingales were primarily fashionable, but a secondary, perhaps unintentional, effect would be to increase the personal space around the wearer through the circumference of the skirt. These dresses also augmented the body, greatly increasing its size, giving the wearer a greater 'presence'. For example, the clothes worn by Queen Elizabeth I, recorded in paintings, greatly added to her status and had the effect of making her look imposing and powerful.



An example of a farthingale-enhanced silhouette and a neck ruff as worn by Queen Elizabeth I. Everything

about these outfits dissuades personal and intimate contact, as well as conveying a sense of power through the scale of the clothes. Queen Elizabeth I ('The Ditchley portrait') by Marcus Gheeraerts the Younger, oil on canvas, circa 1592. "The Ermine Portrait". Painted in 1585 by Nicholas Hilliard (*In the collection of the Marquess of Salisbury; On Display at Hatfield House. www.tudorhistory.org*)

Neck ruffs as worn by Queen Elizabeth I dissuade personal and intimate contact. In the second portrait, the head appears disconnected from the body and the monarch's head is presented to the viewer as if on a plate (John The Baptist style) but without the whiff of victimhood. The below outfit by Junya Watanabe (Autumn/Winter 2000-2001) is a direct descendant of the neck ruff. This outfit is more conceptual than practical (it is about the idea and the technique); it prevents approach, but as the arms appear to be 'pinned down', it also prevents the model from reaching out and making contact of her own. Neck ruffs visually isolate *and* draw attention to the face, and in this case of the Watanabe outfit, it isolates the wearer.



Junya Watanabe Autumn/Winter 2000-2001. Photos by Christopher Moore 2000

The traditional burqa, an enveloping garment worn by some Islamic women, is socially (and religiously) about modesty, but also allows the wearer to form a barrier between herself and her immediate surroundings. She creates space for herself inside the garment due to its voluminous silhouette, and to some extent the wearer becomes anonymous, unrecognisable; only her eyes can be seen (if not covered with panel). The garment dissuades approach by anyone except individuals known to the wearer (and who know the wearer is within) and so the likelihood of an invasion of personal space is greatly reduced.

### ***Intimate distance***

Hall defines Intimate distance as being between zero and eighteen inches. It is indicative of a close relationship between people and can occur during activities such as sex, hugging, whispering, touching, etc.

In 1977 the performance artist Marina Abramovic created an artwork called *Imponderabilia* with her collaborator, a male artist known by the single name of Ulay. The pair stood naked in the doorway to a gallery space and visitors to the performance had to squeeze between them both in order to enter, invading the intimate personal space of both artist and visitor. The nudity of the artists compounded the discomfort felt by the visitors. Ambramovic was also interested to see whether the visitor would squeeze through facing her or Ulay, making a choice between facing a naked woman or a naked man (most people choose to face Ambramovic- was this because of her greater 'celebrity' or because she was female?).

In terms of fashion and clothing, it could be argued that certain garments invite intimate contact and an invasion of intimate distance, whether they are seductive, sensual or have a tactile quality (or possible combinations of all three). Fabrics such as fur invite touch (even if the wearer doesn't!).

All of the above four definitions of personal space and distance can also be divided into Close- and Far Phases. In terms of intimate distance, the close phase is direct contact with the body, usually during sex, wrestling, comforting, and protecting. The far phase is six to eighteen inches and occurs during close social contact such as whispering and between people who are intimate.

### ***The Etheric Body, Auras and Effluvia.***

The above descriptions of personal space and proxemics are instinctive and practical notions of space applied by the individual in daily life. Personal space is implied space, but has no substantiality other than in the individual's mind. However, this does not mean that the concept of personal space is not 'real'; to the individual these territories are barriers that are keenly felt.



Occultists and esoteric philosophers have explored other notions of what occupies the immediate space around the human body. They view the immediate space around the body as a metaphysical extension of the body. This extension of the body is spiritual in nature, though perceived as real.

The etheric body, or ether-body, is the name given by Theosophy to the subtle body; an energy field that surrounds our immediate bodies. Theosophy refers to systems of esoteric philosophy concerned with seeking knowledge of the nature of divinity. The etheric body is believed to be in immediate contact with the physical body, sustaining it and connecting it with 'higher' bodies (other spiritual 'powers'). Esoteric thinking also suggests that there is also an aura of constantly shifting colours that surrounds the body and the esoteric writer David V. Tansley compares it to the *aurora borealis*. The aura's colours can change according to an individual's mood, and although invisible to the human eye, some people claim to be able to see/read it.

In the late 1800s, photography was used to 'capture' such occult phenomenon as auras and 'vital fluids'; the mystical radiation supposedly given off by the human body. According to the German doctor Franz Anton Mesmer in the mid-1770s vital fluids were comparable to a magnetic field that governed 'the human body's inner balance and its relationship to its surroundings' (Chéroux, 2004 p.114). Incidentally, it was this experimental photography that led to the discovery of X-rays. Vital fluids or *effluvia* were recorded by photographing parts of the human body (often the hand) using early photographic methods such as photographic plates or daguerreotypes. Nimbuses of color or pattern that were interpreted as effluvia would often surround the resulting images of fingers and hands.



Effluvia from an Electrified Hand Resting on a Photographic Plate, 1896. Jakob von Narkiewicz-Jodko: Effluvia from an Electrified Hand Resting on a Photographic Plate, 1896, Société Astronomique de France, Paris. (*The Perfect Medium; Photography and the Occult*, Yale University Press 2004)

The above photograph of a hand displaying *effluvia* was created by passing electricity through the subject's body, using a Rumkorff coil (now known as an induction coil; 'a type of electrical transformer used to produce high-voltage pulses from a low-voltage direct current (DC) supply' ([http://en.wikipedia.org/wiki/Induction\\_coil](http://en.wikipedia.org/wiki/Induction_coil))) connected to a glass vacuum tube; the subject held the glass tube in one hand and placed the other on the photographic plate and 'the vital force contained within the body was thus externalised by electricity and imprinted on the plate' (Chéroux, 2004 p.116-7). Photos of Vital fluids, where the lines of 'energy' radiate from the hand at right angle, correspond to descriptions of *the etheric body* as given by clairvoyants (Tansley, 1977 p.66). To clairvoyant sight, the etheric body extends no more than approximately a half-inch from the body and appears as a fine 'network or web of energy streams' (Tansley, 1977 p. 23).

Viktor & Rolf's 'No' pantsuit from the 'Black Light' collection (Spring/Summer 1999) plays with the silhouette and the immediate space around the wearer. The collection was shown twice during the catwalk show; firstly under a black ultraviolet light in which the white silk gazar fabric only would show up, and then under a white light where the whole ensemble would be visible. The black silk gazar ruffles create an aura around the outline of the body that was not immediately perceived when initially shown on the catwalk and can be interpreted as defining the intimate distance around the front and back silhouettes.



'No' pantsuit S/S 1999 Viktor & Rolf. Photograph by Peter Tahl from *Viktor & Rolf Haute Couture Book*, Groninger Museum 2000

### ***Naum Gabo, The Stereometric Principle and The Proxemic Dress***

Personal space is invisible, intangible. It is conceptual rather than concrete. It is 'implied space'. The Russian Constructivist artist Naum Gabo developed a revolutionary sculpture technique where for the first time implied space or volume became an essential component of the sculpture itself. Gabo termed this revolutionary sculptural technique *stereometric*.

In order to demonstrate the stereometric principle, Gabo created two cubes from painted plywood with the intention of illustrating 'the main differences between two representations of the same object' (Sidlina, 2012 p.30). The first cube was a solid, closed form, which represented a volume of mass. The second cube opened inwards, representing 'the space in which the existing mass is made visible. Volume of mass and volume of space are, sculpturally speaking, not the same thing. Indeed, they are two different materials' (Sidlina, 2012 p.30)



Two Cubes (Demonstrating the Stereometric Method) 1930. Image [www.tate.org.uk](http://www.tate.org.uk)

Between 1915 and 1917, Gabo explored the body and space, through a series of figurative sculptures of two heads, a bust and a torso that had an open cellular construction. Gabo represented 'the space in which the existing mass is made visible' (Sidlina, 2012 p.30) through the absence of traditional sculptural solidity. He implied the mass of the body through the use of space. Natalia Sidlina, talking about Gabo's figurative sculptures of two heads, a bust and a torso, says, 'they were assembled, like a house of cards, from carefully cut out cardboard planes. The honeycomb-like pockets of air of which the paper and card structure was comprised replaced the volume and mass of traditional stone and bronze sculpture' (Sidlina, 2012 p.27).



Head No.2 by Naum Gabo 1916, enlarged version 1964. Image [www.tate.org.uk](http://www.tate.org.uk)

Watanabe's pleated garments -if we can call the technique employed pleating; they are more akin to concertinaed Christmas decorations than traditional ideas of pleating- from Autumn/Winter 2000-1 initially appears to be quite bulky, but the spaces made by the honeycomb technique means that the garments' mass is mainly 'air' - it is implied volume. The spaces between the layers of fabric are as tangible and as essential as the material itself.



In order to illustrate the above ideas of personal space, I intend to develop an idea for a dress called The Proxemic Dress, using Gabo's stereometric principle of implied volume.

The dress shape itself will be simple and structured, using an appropriate material, and I will embellish crin ribbon (short for *crinoline* ribbon; a stiff but loosely woven tape, originally made from horsehair, more commonly used in millinery, but also used to support the hems of dresses) onto the surface of the material once the dress has been made. Due to the stiff nature of the crin ribbon and utilizing backwards/forwards lines, the ribbon will self-support and stand away from the body, creating an aura of material. The 'movement' of the line of the embellishment on the surface of the fabric will create a 'transparent solidity' around the body, which refers to the implied volume of the stereometric principle.

The crin ribbon will be embellished at its outer edges (the edge furthest away from the body itself) with simple bugle beads; the reason for this is to extend the embellishment away from the body into the proximity around the body where embellishment doesn't traditionally occupy. This moves the embellishment away from the body into the intimate distance around the body emphasizing proximity/personal space, but unlike the Viktor & Rolf 'No' pantsuit, the aura around the body will be transparent, less solid, implied, and ephemeral. I will also work on the front and the back of the dress, unlike the Viktor & Rolf outfit, where the ruffles are only on the sides of the outfit and silhouette. And unlike the examples of Watanabe's 'pleating' the body beneath can still be seen.

In conclusion, I intend to use references from the history of fashion (in particular references to the ruff), questions raised by performance art about proximity, and anthropology (proxemics), to create a dress that discusses notion of the body and personal space.

## Appendix 3

### YouTube links to videos

Video 1: *Fermenting Fungi*

<https://youtu.be/ni-UjA037Mc>

Video 2: *Growing Salt Crystals*

<https://youtu.be/QnwcBlQ9y8w>

Video 3: *Tensegrity technique experiment with salt crystals*

<https://youtu.be/fyX-Zy7M7iY>

Video 4: *The Proxemic Dress*

<https://youtube.com/shorts/LZk3mfS67jY>

Model: Hannah Martin

Video 5: *The Proxemic Dress (Closer)*

<https://youtube.com/shorts/G5Mo2uHNfhU>

Model: Hannah Martin

Video 6: *The Arnhem Bodice*

<https://youtube.com/shorts/ykSFUKWA-8o>

Model: Hannah Martin

Video 7: *The Arnhem Bodice (Closer)*

<https://youtube.com/shorts/S5p0q27hWdQ>

Model: Hannah Martin

Video 8: *The Arnhem Bodice (Rotation)*

<https://youtube.com/shorts/ZK96YRbIAQQ>

Model: Hannah Martin

Video 9: *The Eclipse Dress*

<https://youtube.com/shorts/8noLxKAFz6c>

Model: Hannah Martin

Video 10: *The Eclipse Dress (Closer)*

<https://youtube.com/shorts/GglUshpfK5M>

Model: Hannah Martin

Video 11: *The Eclipse Dress (Movement)*

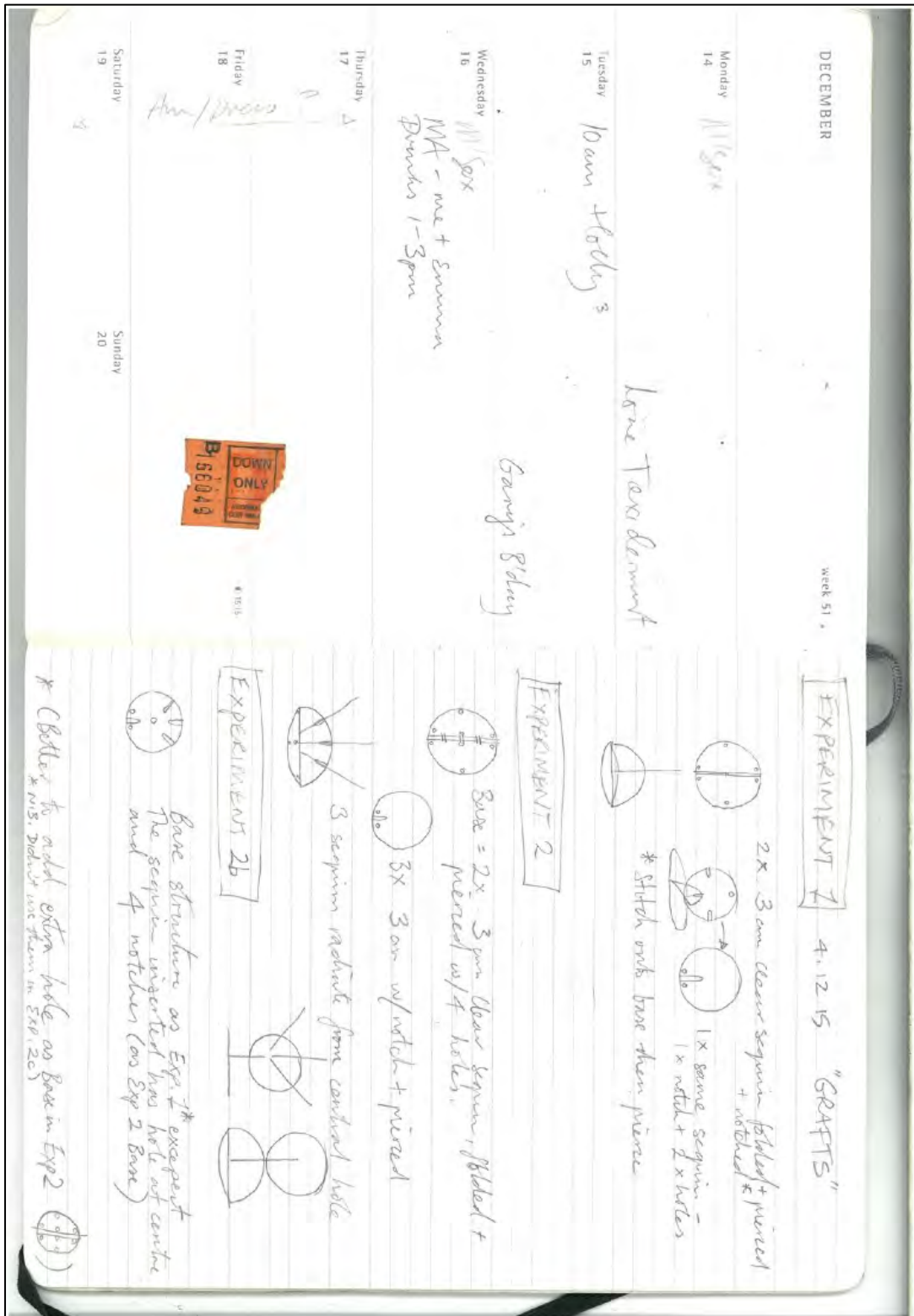
[https://youtube.com/shorts/Dm8FC\\_1Vf8E](https://youtube.com/shorts/Dm8FC_1Vf8E)

Model: Hannah Martin

All videos © Richard Sorger, filmed in De Beauvoir Town, Hackney, London.

# Appendix 4

## Reflective Design Journal pages in chronological order



Figs. 1.26 and 4.1 Reflective Design Journal (RDJ) 04.12.15



DECEMBER week 52

Monday 21  
Tuesday 22  
Wednesday 23  
Thursday 24  
Friday 25  
Saturday 26  
Sunday 27

Chris + Carolyn's Experiment

From Star Wars & Screen on Base.

EXPERIMENT 2c "GRAFTS"

1. used black thread to reconstruct the base. That part is connecting the sequins to secure the base.

2. when doing 3rd insertion still upward tier - merging all 3 sequins on base of yoke & base individually

3. when situated not in the fold but slightly upward also I have added a central hole to both base sequins to secure the next insertion.

4. 2nd Sequin (1st insertion) inserted

5. 3 x 3 in Sequins inserted

6. These holes are better when situated not in the fold but slightly upward also I have added a central hole to both base sequins to secure the next insertion.

EXPERIMENT 3

Base - 2 x 4 cm sequin, filled with 4 holes each 7 notches

• An experiment with 2 sizes & multiples

• The first insertion (A2) will be 3cm

• 2nd insertion - alternated between 1 notch + 4 notches

• 3rd insertion - 9 x 2 cm sequin

Fig. 4.2 Reflective Design Journal (RDJ) 04.12.15 cont.

DECEMBER  
JANUARY

Week 53

Monday 28  
Kurt

Tuesday 29  
Squaring the round?  
Kumon's boxes?  
Mastrom's

Wednesday 30  
Supper Paul + Kelly 7pm

Thursday 31

Friday 1  
Book Her A Bover's shot.

Saturday 2

Sunday 3  
3/4/96/9/100/104

---

**EXPERIMENT 4**

Insertion of 'retour' in the space above the pattern

2 x 4cm Clear

3 x 3cm Clear (1st insertion)

6 x 24mm Black Squin

1 x 4cm Clear

**EXPERIMENT 5**

Large Students

\*First 2 Squin (4cm) base on 5x4. But next 2/4 Squin (not right angles - fold) have different side formation

3 x 2.5cm Squin base

3 inches in each folded section (not very easy to do some of them...)

They central fold - 3 x 2cm (but the ones either end only get in the way...)

The other 4 folds - insert 3/4 3cm Squin (clear). Then insert 3 x 3.5cm Black

Centre - insert four into the 2cm Clear then 3 x 2.5 Black

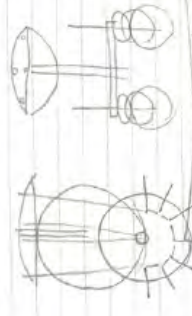
\* Decision question: why place in stages during the work of the student? Why this can happen once squinbase are attached, but then trying to handle 'retour' you need for decision making. However, when I don't know the outcome

Fig. 4.3 Reflective Design Journal (RDJ) 04.12.15 cont.

GENERAL NOTES ON EXPERIMENTS 1-4 GRAPHS

\* Some planning / Thinking ahead weeks /  
 measuring standard frequency, one sequence  
 any, based on water level, nothing can be  
 problematic, also - matches, doesn't fit with the  
 spaces between sequences (and / or) first  
 \* building around central / flat - first  
 sections - should be kept to one and / or  
 small sections  
 \* The suspension: Perhaps, use a geometric  
 earlier samples still on the 1st / 2nd  
 insertion singularly with repetition,  
 through from a central / side hole, but this  
 appears to need a / suspension: There is more  
 structure / support of several sequences are  
 threaded together

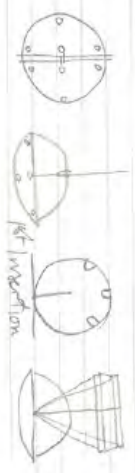
EXPERIMENT 8 TENSEGRITY



N.B. Because the drawings  
 in the 2 x 1st sections  
 are not in same plane,  
 top sections are out of  
 alignment. This  
 can be rectified by  
 widening top section  
 for the bridge.

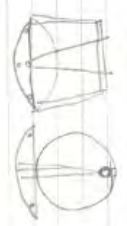
- Double insertion (1st)
  - Single insertion w/ Bk 3rd Seq. in other end (2nd insertion)
  - 2 x 7 cm. square insertions (3rd insertion)
- Getting the tension right for the first insertion  
 is difficult, and the design is full with the  
 first insertion.

EXPERIMENT 6



Insertion of 3 Bk. Bridge beads in the 2nd  
 insertion. (These proved to be very unstable  
 even when threaded together (and below))

EXPERIMENT 7 TENSEGRITY



By giving 2 (two) sequins for the  
 1st insertion the bridge is balanced  
 between down and / or more  
 struts. The arching struts  
 are either side of the base / set.  
 N.B. The notches on the 1st sequin  
 by too far apart or too angled or  
 they are too far apart for the bridge.  
 Inside 3 notches and used only  
 2 notches, smaller sequins in  
 3rd notches, just to fill it.



X3 Bk

Fig. 4.5 Reflective Design Journal (RDJ) 04.12.15 cont.

cont.  
 5 + PARB ~~4th Sept.?~~

Work 10.12.15

th. Space + "Striated Space". 3rd Space?

Miller (lost in love)? Boundaries?

How use a bit of books to look at re-  
 as. Kacem.

or with practical experiments, more  
 working on the thread and 'clear'

one to define terms for practical use &  
 other PhD completors for other institutions.

Experiment 9 (Scale)

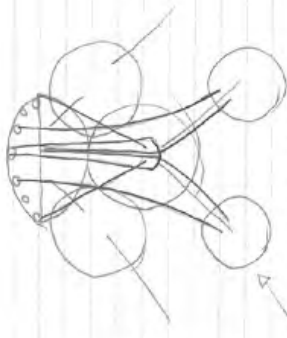


Scale = 2 x 4cm  
 1st/insertion = 3 x 3cm  
 2nd insertion = 5 x 4cm

\* Stopped here for a while  
 because as the sample has  
 a planning from I will  
 make another experiment  
 as above but making a  
 3rd insertion, possibly a 4th

(9b)

As above, but with 3rd insertion of  
 6 x 4cm sequin  
 4th insertion 2 x 3cm sequin



The 3rd insertion in the  
 central sequin needed  
 to be re-adjusted with  
 thread and sewing across  
 by support the 4th  
 insertion better.

Fig. 4.4 Reflective Design Journal (RDJ) 04.12.15 cont.

5.1.16

### EXPERIMENT 10

GRAFTS/VERSATILITY & (COLOUR)

Working on from last year's practice, now starting to look at the use of colour (primarily red) and strand. I thought red as it is a strong colour - halfway between black and white (?) and it is one of the earliest base colours I adopted in my practice



Clear 4cm x 2  
1st + 2nd Insertion as Exp. 9  
(used heavy texture to make  
distinguishing between various positions)  
3rd Insertion 3cm, red sequen. final  
as Exp. 9b x 4  
Control 3rd Insertion 1x Black 3cm

Back + 1st Insertion - Clear  
2nd Insertions 5x red sequen. These are indistinguish-  
able from clear sequen. 1x 3cm Black  
3rd Insertion 4x 3cm red + 1x 3cm Black  
Red strand used throughout except for Black  
insertion - 5th strand used.

Not terrible, out of line -  
Net made attached to it  
Exp 9 + 9b. Except  
to have a final quadrupling  
of colour for the red  
has 1d. thread



TEMPERATE for  
Nidiving 3cm



Fig. 1.27 Reflective Design Journal (RDJ) 05.01.16



**EXPERIMENT 10b** GRAFFS/TENSEGRITY/COLOR

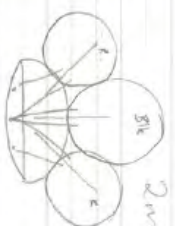
as Exp 9. Wiping the sequin Tensgrity pan able to more accurately plot holes + markers.



Base = 2 x 4cm Clear sequin  
1st insertion = 3 x 3cm Clear sequin



Thread for 1st insertion is Red and then Black for 2nd insertion



2nd Insertion = 4 x 4cm Red  
1 x 4cm Black

As opposed to Exp 9, the threads for 2nd insertion Black sequin come from outside holes rather than the central hole.  
This works better - in terms of operating the colour off the surface of the fabric, 'suspended' by threads.

**EXPERIMENT 10c** Version of Exp. 3 using colour



Base = 2 x 4cm Clear w/ 7 notches  
1st insertion =



x 4 Red



x 3 Black

2nd insertion =



x 2mm

Red thread for 1st insertion  
Blk thread for 2nd insertion

Fig. 4.30 Reflective Design Journal (RDJ) 05.01.16 cont.

**EXPERIMENT 10e**

as 10D is far as the 2nd insertion (because the form was pleasing)

- 1st insertion 3x pink redener 3cm
- 2nd insertion 8x Red 3cm (See opposite)

Although the direction above the fabric part made it is apparent and as a set system in pleasing - not only completed but also abundant - not only numbers 12 sets of 3 either end (2nd insertion) also for a 9cm centre pin in the opposite of making further samples where the centre is an odd number.

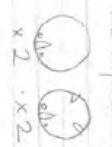
The choice of needle fabric black cut thread and red sequins (or gold) - shows a pattern and the angles that the sequins settle at are interesting and varied.

**EXPERIMENT 10f** Variations on a theme (10c)

7x Notches on Base sequin



1st Insertion 3x 5cm Red 4 x 1cm Red



2nd Insertion 4x 3cm Red



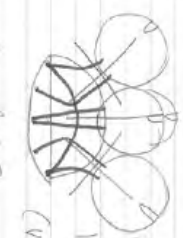
\* In future - could use long buckle head as a spacer between 2nd insertion 3cm sequin would like to strabulage

**EXPERIMENT 10D**

Colour / Thread

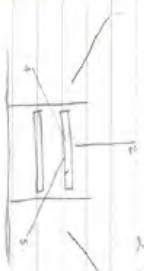
Nude / Beige cotton fabric base - this might help the polyester sequins, spin up against a more neutral background. Also just have using a thicker embroidery thread - starting the importance of the thread in the structure of the embellishment

- 2x Base sequin (4cm Clear) usual sewing thread
- 1st insertion 3x 3cm Clear (Pin will elevate the 1st row above the fabric)
- 2nd insertion 8x 3cm redener



1st 2nd Insertion (Black Thread) (V. cute!)

- 3rd insertion - 6x Red 3cm 2x Blue 3cm



one element on being wide enough for needle and they can be fragile have sharp wedge which cut the thread, 4 & 5 tend to pull the fabric to some extent prevent effect of the wider leaving the surface... (M8 hole remove a tight squeeze due to thickness of thread)

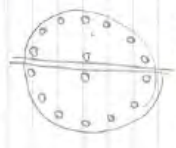
6/18 are on opposite side to 2/4/5

Side view of 3rd insertion Red thread used to differentiate from Row 1's. 2 Black (with) beads introduced for no blue resin this variety. These beads

Lesson of Experiment 7b

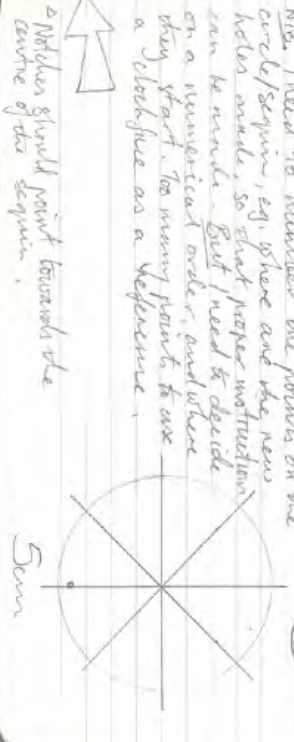
16.2.16

This structure composed of clear sequins would benefit from being rearranged using your previous attempt (P1) to draw attention to the shared structure. I will also consider adding synthetic holes to make the structure more visible.

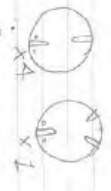


The holes made on the 2x4cm clear sequins are by eye. One does not see them in the fabric base (using a sewing machine) - large - to make fabric. The notches are cut through both sequins at same time so they match (placement + angle).  
 \* This is not surprising at all because least the base to be cut with the 'back ground' of the fabric. Compact strong woven fabric attached to it and this sample is about the architectural suspension threads.

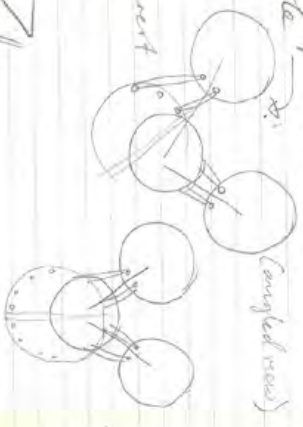
The 1st insertion is 3x3cm clear. The black spots indicate new holes added to draw and help with later insertions (4th insertion).  
 Note: I need to number the points on the circle/sequin, eg. where are the new holes made, so that paper instruction can be made. But I need to decide on a numerical order, and where they start. The many points to use a clock face as a reference.



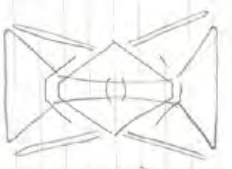
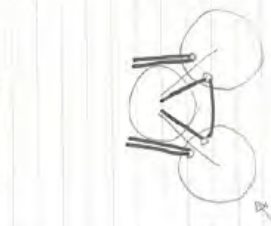
2nd insertion: 4 x 4cm clear (no additional holes needed)



3rd insertion: 4 x 4cm clear. We can see the original sample the 3rd insertion (x4) went clockwise from a hole in the base through the base hole.



This type to avoid the stretching of these insertions, they are also suspended across using only 2 holes nearest each other.



Aerial view of points of 1st insertion (main centre)

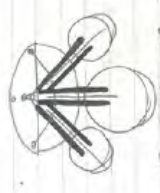
4th insertion: 2 x 4cm clear. To avoid the consequence of the 4th insertion when considering how the notches in the outer 2 1st insertions as 'vertical guides', the 4th insertion will start on its 'journey' to the 4th insertion. 4th insertion - as previous sample but directed through extra holes in 1st + 3rd insertions. (4th insertion is a little unstable, but rest structure good).

Fig. 4.36 Reflective Design Journal (RDJ) 16.02.16 cont.





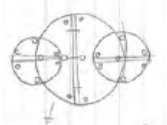
Exp 4<sup>th</sup> end. I added new holes as there is not enough room for the angles to radiate from the central holes and I didn't want them to lean in from the outer holes (as in previous Exp 4.) - I want the angles to be the straws.



10.03.16, I deconstructed the sample and reconstructed it using black cardboard. The 2nd insertion sequin now appears to be on direct (8/16) stems. The junction would be below in also now rotated. (Could be by doing all 1st insert temp. 2nd insert as opposed to completing all work on third trace / 1st and 2nd insert on days during the side bases / 1st insertions?)

\* The sequin of II sit fine, but the sequins of III sit right against each other and don't quite fit. If the matches on the 3cm bases are cut further back this should allow it to fit.

**EXPERIMENT 11** 11.3.16 Multiple Base Structures



Base = 2 x 4cm Clear  
4 x 3cm Clear

Threads from the centre of the gaps bases connect to the central hole of the four base. This is to hold down the inner edges of the 3cm base. This is in response to the holes I've made in air bases and should be considered



3mm central hole has groove rather than hole. Make hole larger or use alternate holes

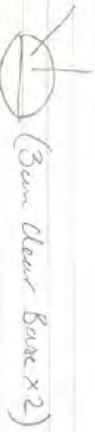
11b Base - 2 x 4cm 8/16 casing  
4 x 3cm Clear

1st Insertion - Clear  
2nd Insertion - Black - 6 x 3cm  
white sub. thread  
2 x 4cm } Centre  
4 x 3cm Clear  
1 x 3cm }

The black base acts as a focal anchor onto the fabric. The eye clear insertion creates a visual gap between base + 2nd insertions (Black). Again, I'm trying to make the sequin operate in the space above the fabric, as if hovering / floating.

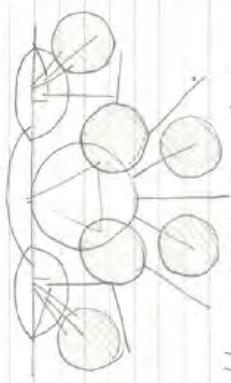
\* N.B. If repeating II there is an issue with how the 1st insertion sequin sit against each other (inserted into the different bases).

Fig. 4.41 Reflective Design Journal (RDJ) 11.03.16



1st Insertion = 1 x Blue 3cm  
 1 x Clear 3cm  
 On reflection of the structure I decided to add another notch to the clear sequin (1st insertion) in order to insert a 3cm Blue sequin

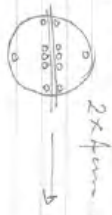
From one side, aspect thin notes forms a more domed appearance



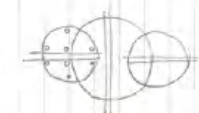
○ = Blue

The silver sequins with no mirrors to some extent they in their generating. Sequins - Tenacity threads (Construct) The effect from partly giving a take a hold of Mirrors. Distortion + Multiplanar forms.

EXPERIMENT 12 22.03.16



(Blue Side Thread)



Silver/Blue mirror? 1994 Pop/Pluship Glass.

1st Insertion into 4cm base -  
 2nd Insertion (Fit works...)  
 ↓ into central sequin

3 x 3cm Silver  
 4 x 4cm Silver



The blue sequins give the strands something to reflect...

2nd Insertion into side sequin blue 4 x 3cm Blue. using the 2 x 2.5cm Clear bugle bead. This helps with the tenacity and placement/angle of the sequins. n.b. Bugles used on the 2x holes of the lower of structure - after 2x holes just thread - bugle not needed.

1st Insertion into the 2x (side) 3cm Clear base -  
 2 x 3cm Blue  
 2 x 3cm Clear - (to keep the even close the fabric)

\* The sequins spray the sequins just and the angle in different compound to other holes without.

126

Using Silver sequins as the bases - instant mirroring effect does this produce.

1st Insertion in team Silver base = 3 x 4cm Clear



2nd Insertion in sequin 'a' - 3 x Silver 5cm  
2nd Insertion in sequin 'b' - 4 x Blue 3cm \*

\* + using 4 x 2.5cm Blue bangle (1 think thought they work/would add to the reflections)

Using 4 x Bangle on the outside transparency through

1st Insertion in 3cm Silver bases = 2 x 4cm Clear  
2 x 3cm Clear



2nd Insertion 2 x 3cm Blue.

This construct/structure has a more open structure than 12 and the base does reflect the above structure (using the threads + bangles) but the complex lines (rotation from central hole of bangle sequins (the team base) construct/make complicated the reflection.

Fig. 4.28 Reflective Design Journal (RDJ) 22.03.16 cont.

I need an arm for the mannequin. I should also start playing the multiple of different forms together and I should try the forms on the 1/4 scale stand to simulate a different scale...

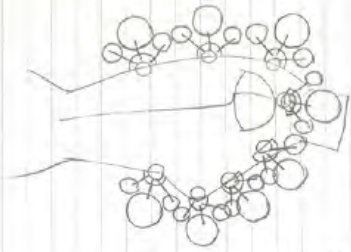
16.516. Using the forms on the sides or centers of the mannequin to express/quote words.

proportion space around the mannequin. The line of form on the spine is so tight, but what would the equivalent look like?

— Finding forms in the space lines of the mannequin as these relate to pattern blocks/stand

— From holding the feet and over, over the shoulder, over down the back - very pleasing, graphia must show how a movement happens.

It's only as they start playing the forms on the stand as they truly some clear/make parts his clear relationship to the human form that creates me.



FRIDAY 16th May '16 Working on the mannequin...  
Anodizing/Cabinet Varnish

8x EXP 11 using clear/Ble/Silver Spectrum.  
Base = 2x 4mm Ble

1st insertion = 2x 2x 3mm Clear + 4x 3mm Clear (Sd)  
2nd insertion = (Carbine) 1x 5mm 2 Ble, 2x 4mm

6x 3mm Ble

Making 8 versions of the same form was quite tedious. I started them a while ago but then on hold as other stuff took over, and started work on them again yesterday. Finishing today. But interesting to find that in the mannequin has been useful (I'm) giving them to the mannequin or more begins to give the impression of how they might be used on the body/garment/stand.

He being placing them at oblique angles on the body (why are they oblique?) delicate, shoulder, front and the back (spine) he worked around naturally so far - I don't think the forms are perfect enough or sometimes to play with asymmetry - strong at last to parallel a man.

I'm very aware of the huge potential of the technology in terms of style/scale/color and their placement on the body/garment/stand. I had in the base fabric. Do they embedded between larger forms, covering the whole surface. I can't wait to do collections when ideas needed a quiet turn around. (The line of form down the spine look like the plates on a Stegosaurus)

Fig. 5.10 Reflective Design Journal (RDJ) 13.05.16

24.2.18

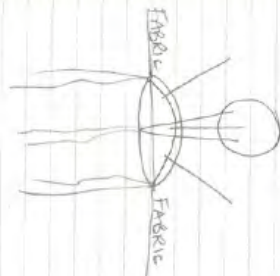
Making a Temperature Structure for use in a self-light growth experiment.



2x 4cm Clear Bore Squirm Thread  
Black embroidery Thread

I'm sewing the bore squirm on with end thread - I normally use an ordinary cotton thread for sewing & leaving a long length below the knot on the underside of the fabric to hang in the saline solution when I 'tie off', I'm also leaving a long thread. My hope is that the salt will grow up the thread, and through the fabric.

1st Infection - 3x 4cm Clear Squirm  
2nd Infection - 1x 3cm Clear Squirm  
Central 1st Infection



Embodiment in left of frame on set out of pair of saline solution  
Stout  
24.2.18  
End?

Fig. 4.47 Reflective Design Journal (RDJ) 24.02.18

Polymers are in powder into a receptacle  
 paper substrate (powder) is stirred  
 in water can absorb (?) quite a lot  
 of paper left to cool at room temp.  
 crystals begin to form but the crystal  
 solution is just allowing a some taking  
 out all solids.

23.6.18

3 X Structures to be used in conjunction  
 with a paper substrate solution

Base = 2 X Clear sequin 

1st Invention = nitro 1.8 - 3cm Clear sequin  
 nitro 2 - 4cm

Back embedding thread in panel,  
 The sequins are sandwiched first with  
 fine sandpaper to add pressure (that  
 pressure for the crystal to grow on).

The form is basic and synthetic will  
 only 1 invention - firstly, start with  
 1/4" show it will work so along coast &  
 spread a bit of time on the structure and  
 spreading, the pan part I'm going to use for  
 the solution are not huge so the structure  
 needs to fit into the middle of the pan  
 (opposite domain).

par ① - The structure is immersed upside down  
 in the solution

par ② - The structure (The fabric still on  
 frame for all 3 experiments) sits on  
 top of the pan with threads  
 forming the structure trail in the  
 solution

par ③ - as par ②, but a paper substrate  
 crystal in "seed" & one of the  
 trailing threads

\* Solution is cast + filtered.

P.T.O

Fig. 4.47 Reflective Design Journal (RDJ) 23.06.18

① - Very small crystals form where endospore filament is submerged, but in further growth, crystals not interesting

② - Obtaining hypogeous - no growth. Only slightly on the threads

③ - As above. Crystals formed in the bottom of jar but not on stratum.

17.9.18

- Two more attempts - This time using hot water and not filtered.

① as ①

② as ②

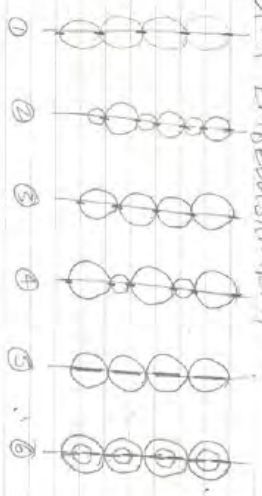
③ as ③

N.B. Stratum might be used - used half a packet in 600 ml.

Fig. 4.49 Reflective Design Journal (RDJ) 23.06.18 cont. and 17.09.18



SEAM ENSEMBLEMENT



- ① = 4 x 4mm Clear Seam w/ 8/16 thread  
Storage knee-vela twigs against the  
curves,
  - ② = 3 x 3mm Clear Seam + 3 x 2mm Clear  
Seam 8/16 thread
  - ③ = 4 x 4mm 8/16 Seam, 8/16 thread
  - ④ = 3 x 4mm 8/16 Seam + 2 x 2mm 8/16 Seam
  - ⑤ = 4 x 4mm Silver Seam, 8/16 thread of seam  
across the jld of the seam.
  - ⑥ = 4 x 4mm Silver Seam + 4 x 2mm 8/16 Seam  
in the center of each 4mm silver seam.  
The silver acts as a mirror, creating  
'multiple' 8/16 seams
- The jalded seamers sit in the seams

BOUCE 16.4.19 TOIVE

Fabric - Following canvas. The person being the  
structure, a neutral colour, it will  
act as a contrast to the rive of the  
seams. It requires sig of 18 g/m<sup>2</sup>.

MAKE - The make will be prototypic system  
this system structures are attached to  
will be different & see using a sewing  
machine and so this needs consideration.  
I will repond to these issues as if is  
conquered

DESIGN - I will use a starting point, the photos  
of my embolism in the stand, I  
partly order by the one photograph by  
Egghin. The individual structures may  
need to be less complicated and I can  
repond to the placement of the embolism  
in a site specific manner - always  
scale, using embolism in the part  
of the printing, for example, jalded seams  
over the seams and on the edges.

Also, I'm thinking about using a 'black  
synthetic' lining to part of the construction.  
Raw edges will be preferable if I have to  
see by hand.

- Notes on 1st Toile -
- cover bust point on start,
  - curve/exaggerate the hips,
  - more pleating up on the  
curves / corners of my seam.
  - Be more curve of neckline -  
it's too flat & flat

Fig. 5.43 Reflective Design Journal (RDJ) 16.04.19

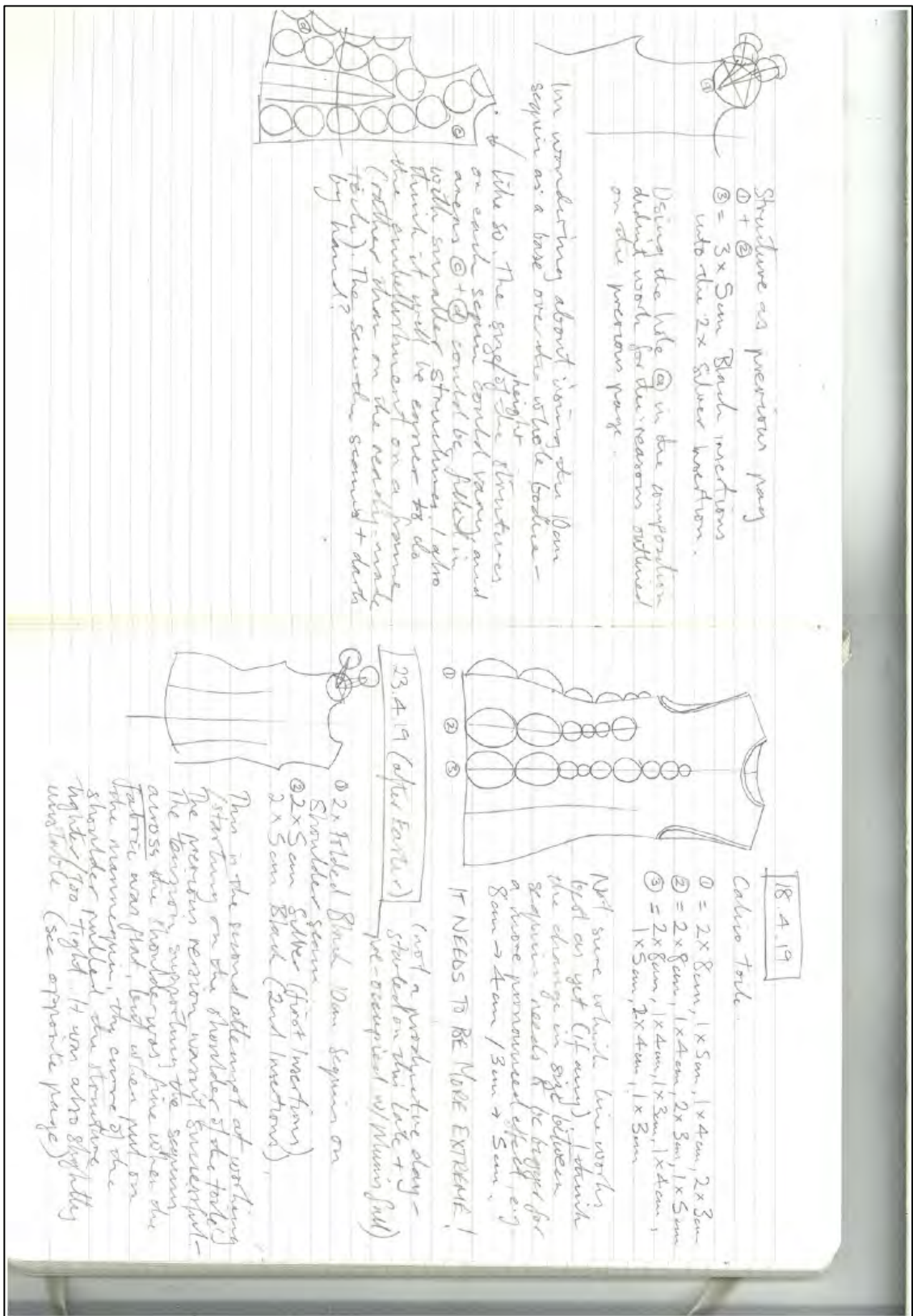


Fig. 5.47 Reflective Design Journal (RDJ) 18.04.19

29.04.19

The start will need to be hand sewn on one side, the fabric is embossed it will no longer fit under a sewing machine.

Some structures will need to be added post frame - how do I do this?

Bottoming the form might be structure ① in use early, but get better with practice.

It might be necessary to add more holes to the hole sequins; as the body curves, the sequins need to be more spaced & the fabric so they don't lift off the surface of the frame.

③ The beam B/E sequins tend to curve/flare more than the silver or clear - glue 2 together?

Having finished the 1st part better as much as possible, attached it to the previous section table (see previous page) which has a pre-existing structure on the silver side. Then placed 2 more structures (2 blue, and a third at the beam -

above side

The side of the sewing starts well creating a more striking effect. Many embossed side very easily use to create new sub-structures which are post edges, and post implied space, stereometrically.

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discussed on the previous page (20.4.19). As this the first version of the jacket I want to explore the form of the silhouette when applied to a garment, rather than complicate matters with varying forms + signs (this might come later).

The side view/form work well, by this I mean the structure on the side same good the structures either side of that on the front + back which are symmetrical. This is because the bottom 'pins' of structures are all linked vertically with 3 x 1st + 2nd interaction. The

creates a pleasing exaggerated 'curve' to the hips - varying proportions. The silhouette isn't solid, but implied volume / solid mass is opened out.

I will cut apart the back layer of the tulle with the embellishments and re-apply the existing forms to see if I can make the silhouette of the back as successful as the front...

This time I will start applying forms from the bottom of the garment and work upwards, returning the mass towards the top of the garment when I reach that area.\*

The first re-iteration in which appeared a form of the side profile/silhouette

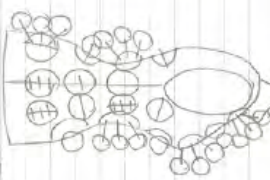
\* I did the opposite when embelishing the 1st version

24.6.19

(not the date created, but the date of modification)

I completed the back of the tulle 2 weeks ago. (10.6.19?)

The side silhouette works on the front but not the back. I couldn't exactly replicate the front because of the 3rd structure of the shoulder, the pleats on the back require me to go horizontally because of the curve of the body / proportions. This affected whether the corresponding form would fit horizontally or vertically as I have indicated. He alternate



There the forms with 3 1st & 2nd interaction were horizontal rather than vertical as in the front

rather than

There are photographs that show the resulting silhouette (or lack of...) I also swapped out the sequins on the shoulder seam for 1 day the sequins, but they look (by get) a static signature and so I kept around they also look like using mirrors have decided to keep all the sequins and forms the same as

Fig. 5.56 Reflective Design Journal (RDJ) 24.06.19

19.8.19 Start of Actual Piece For Assembly.

Approximate sequin needed -

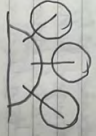
Black Seam (for Base)  $50 \times 2 = 100$

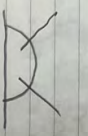
Black Seam  $36 \times 2 = 72$   $72 \times 2 = 144$

Seam Transparent Seam  $36 \times 2 = 72$

Holographic Seam  $22 \times 2 = 44$

(Generally) Two structures will be used -

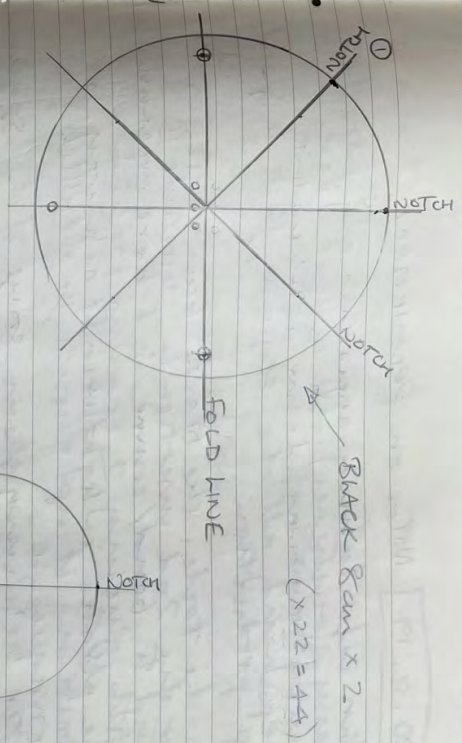
- ① 
  - 2 x Black Seam (Base)
  - 3 x Semi Trans (1st Insertion)
  - 3/16 Black Seam (2nd Insertion)

- ② 
  - 2 x Black Seam (Base)
  - 2 x Hole Seam (1st Insertion)

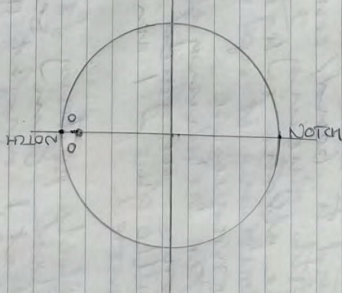
The 1/2 circle made 29.6.19 uses 11 x ① and 11 x ② } x 2 for whole piece

But there will be some site-specific repairs made when making the actual piece, such as at the CP + side.

\* I've decided to double them up by gluing 2 together - one on its own can bend.



3 x SEMI-TRANSPARENT SEAM (x 22 = 66)



BLACK Seam (2x) 3 - glue together and then install. (x 22 = 66)

Fig. 5.57 Reflective Design Journal (RDJ) 19.08.19

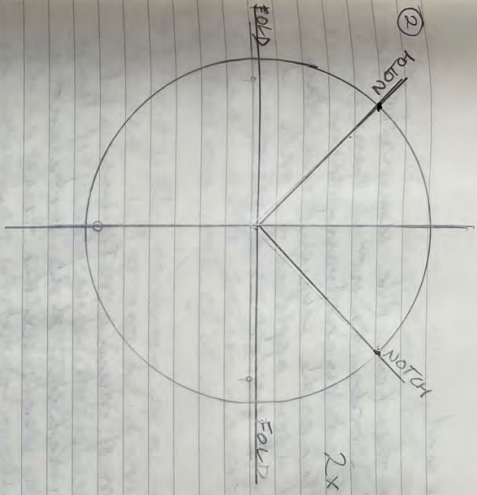
20.8.19 Notes on PRODUCTION!

After capitalizing approximately how many structures will require how many sequins, I am not taking + measuring all the sequins just to speed up production.

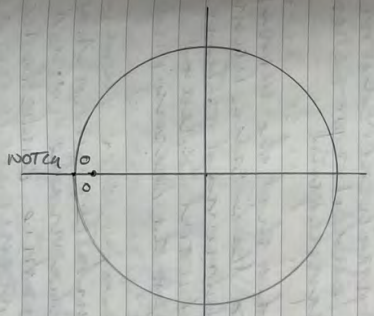
On the table, the black beam sequins for the 2nd insertion in structure ① tend to bond/corrode, so I have experimentally with gluing 2 sequins together. The adhesive is not waterproof anyway, so doubling it up should be good. I will compare after holding them, some of the sequins come unglued, so perhaps use the little glue I am re-gluing them using more.

While putting folds and holes into the band (am sewing) in thinking that I might glue the 2 together, they join so that I can notick them before sewing to the plate - this means that the notches will be in the correct place on both sequins, and avoiding putting the notches in one sewn down which can be arbitrary.

(This is day 2 of applying, but everything has been slowed down by visits & Doctors/pharmacies/consultants and a MRI scan for my on going scatica.)



2 x Black & Green  
(x12 = 44)



2 x Holographic beam  
(x11 = 22)

Fig. 5.62 Reflective Design Journal (RDJ) 20.08.19

21.08.19

Miles and.

Need Bill-tackling the seam. Bill requires together by their pins in order to match them. He wants to. But need super-gluing them also - this is better as the sewing can stay firm, and upon application onto fabric, making it easier and more efficient.

22.08.19

During the process of gluing, stitching and marking the spacing, there is plenty of time to reflect on the making of the garment not addressed by making the toile.

For example - how do I finish the neck, armholes and hem, and how does it fasten at the back. For practical reasons I decided on an open ended zip - easier to put on and off a manoeuvre.

I'm playing with the idea that the canvas could be suspended onto a flat satin lining, to add stability to the fabric, and perhaps an aesthetic value as I want to leave neck + arm holes raw, so the lining might show on a black edge.

Leaving neck + armholes unfinished. Seams potentially finishing make canvas, the garment panels are embellished with a sewing machine. I'm planning to hem with be easier as it can be done by

hand. I like deconstructed garments and so can use that as an excuse. But decision in a balance between the finished and unfinished, so a paper hem will address this.

I'm going to make up a panel of canvas, lined with satin - minus embellishment to test the look of it.

\* Next \* after making up a first panel I decided not to mount it onto a lining - the pattern fabric I will use is much more stable (wool/camel hair mix). The two layers mounted together were getting by a time, and now with the dart would be an issue as it needs getting open and pressing open. I will put a lining under the garment and this will hide the stitches on the wrong side of the fabric as well as cover/insulate the darts.

23.8.19

Thinking in the hour on the way to another convention, yesterday... perhaps I can be thinking around neck and armholes to turn the edges under and make neck/armholes more finished. If this works, mounting will need to be sewn onto the fabric before it is embellished and when ready to get out and make garments, it can be turned under, giving a neat, of course it works.

(Sergis so far). (2.9.19/4.9.19/5.9.19/6.9.19)  
8.9.19/9.9.19/11.9.19) 15.9.19

Fig. 5.63 Reflective Design Journal (RDJ) 21.08.19 and 23.08.19

5.9.19

Notes on Assembly

I should finish the embellishment on the pattern today - tape will still be some structures to get added during the garment construction.

Thinking about the assembly of the bodice -

- ① Dart (hand sewn)
- ② Side seam (machine sewn)
- ③ Zip in center back (hand sewn)
- ④ Positive front (hand sewn)
- ⑤ Shouldered seams (machine sewn)

Revising - It will be easier to manipulate one panel to sew the dart by hand, side seam can be done on a machine, because there is the space (back of embellishment) on the sides which post-  
 construction - I can have sew the zip in, as the panels will lay flat either side. The zip in opens tender, so one seam in this can be opened and I can hand sew the centre front.  
 Prior to this, I might machine sew bias binding on the seam allowance of the CF & make better the internal finish of the garment. Passing the seam of the side seam beyond sewing or after.

The above notes are 'thinking sketching', I pinned the embellishment on the panels today and spent some time thinking

5.9.19

Further about the construction of the bodice, I cannot be certain what and how, but I must be certain what and how, I be machine sewn. Obviously the most that is done by machine the better, quicker and better.  
 I will start tomorrow with sewing binding onto the seam allowance on the dart the first and then experiment with if the zip can afford, be sewn by machine.

Saved the binding onto center front seam allowance - geometric machine not great and still a lesson in a little off, but in time to see if in for a service.

I have pinned the darts, but I'm not anxious about putting the zip in yet so I will do that next, before sewing side seams, for easier maneuverability. Practising with a zip on cargo pant, as it's a wide side, I put a zip in.

Zip has gone in fine \*NOTE TO SELF\* If using pre-rendered zip on future garments, sew onto fabric before stretching or frame and embellishing.

11.9.19

The bodice is essentially made. I now need to add additional post-production structures -

- 2x Shoulder
- 3x Sides x 2
- 1 @ Centre Front Structures
- 10x Hem on Back

Fig. 5.64 Reflective Design Journal (RDJ) 05.09.19 and 11.09.19



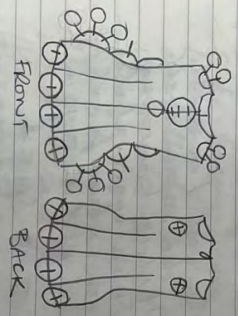
11.9.19

cont.

The additional structures are sewn into a felt base, using temporary stitches. (The 2x base sequins) The idea is that I construct the 1st + 2nd iterations, into the temp stitching on the base sequins and then cut away the felt base as much as possible. The base sequins can then be sewn onto the bozole.

13.9.19

(Hopefully the last day!) Planning the post-production additional structures.



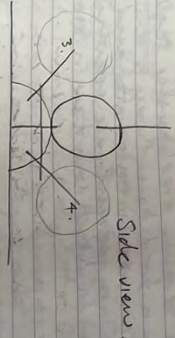
Got an email today to say I've been 'de-selected' from the exhibition due to funding!

14.9.19

Finally finished the bozole by applying the 10x structures around the holes here in a way with structure of the

left side - the sequin overlaps the sequin of the hem in a different way to the other side. This needs repositioning and re-stitching. This prevents me sewing in the hip pain. But now there is no work...

Fig. 5.65 Reflective Design Journal (RDJ) 11.09.19, 13.09.19 and 14.09.19



I tried adding another insertion to 3+4 but too unstable.  
 Not really successful. Photographs taken but due to being stuck on glass it doesn't photograph well. I will dismantle it to re-use the pieces.

26.10.20

NOT THINKING - JUST DOING!

(Using up left over sequin from the previous table which were not usable / faulty etc.)  
 Not sure yet about layout to achieve. Some vague thoughts about making something with more insertions, maybe more complex. I want to try to re-design the technique, possibly in a more free-form manner?

It's been over a year (!) since I last made any practical toys and so I need to re-learn how to build the structures.

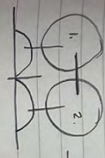
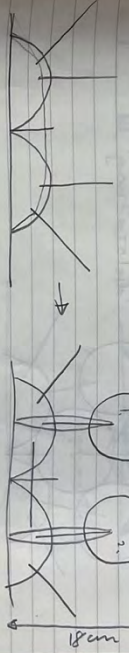


Box = 3(6) x 8cm Rlb.



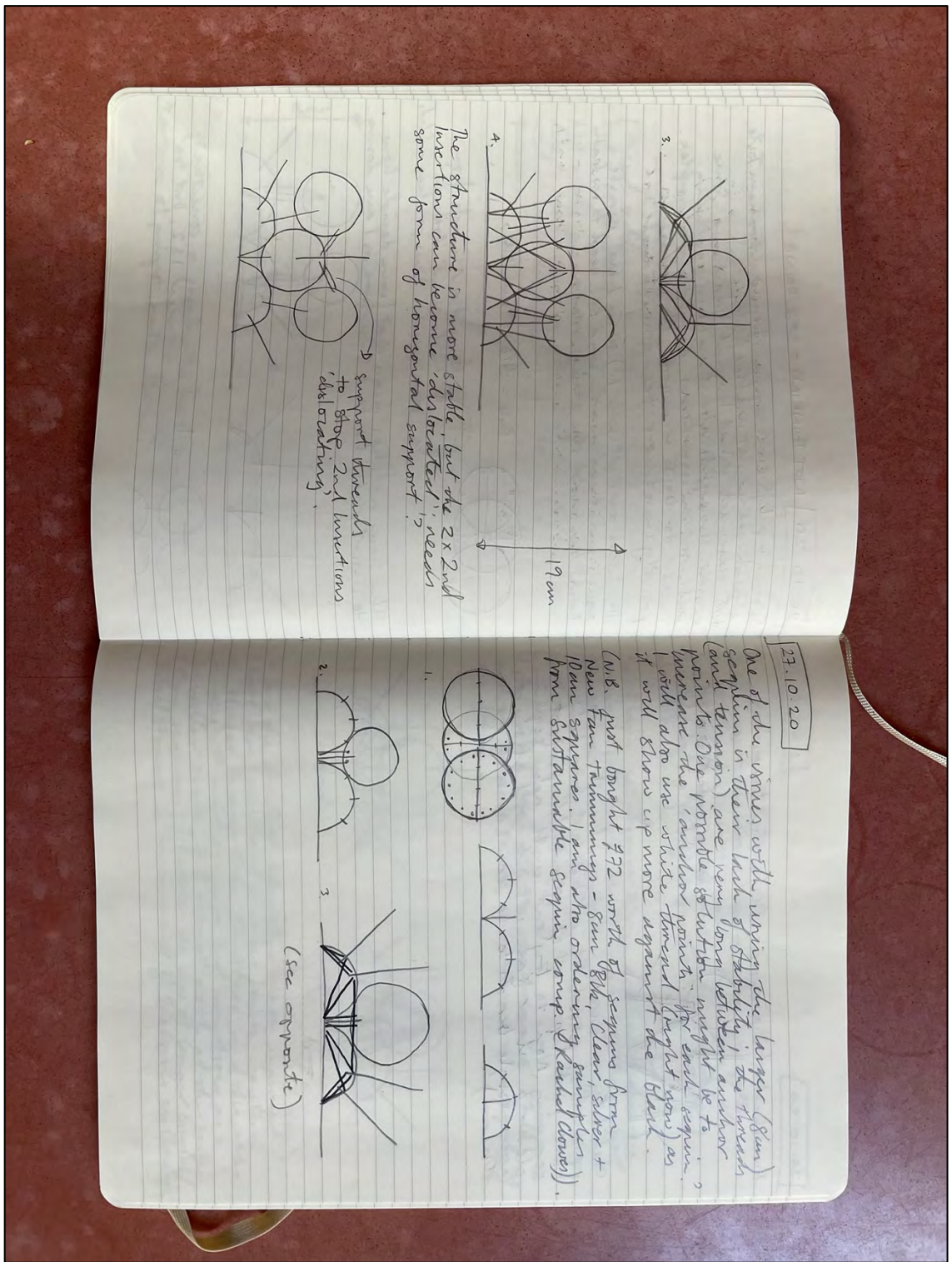
1st insertion made from 'reclaimed' Anstran sequin. New notches added.

The new notches mean that I can decide how to insert onto the base structure as I am doing.

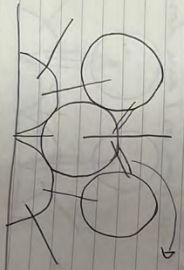


→ I tried attaching a sequin between 1&2, but too unstable when trying to construct.

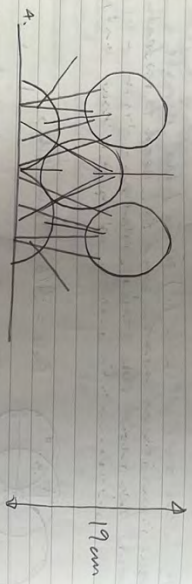
Fig. 6.1 Reflective Design Journal (RDJ) 26.10.20



The structure is more stable, but the 2x2nd  
 locations can become 'dislocated', needs  
 some form of horizontal support.



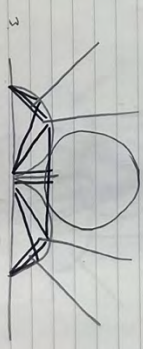
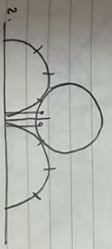
Support towards  
 to stop 2nd locations  
 'dislocating'.



23.10.20

One of the issues with using the larger (8mm)  
 sequins in their lack of stability, the strands  
 (and tension) are very long between anchor  
 points. One possible solution might be to  
 increase the anchor points for each sequin.  
 I will also use wide thread (might you) as  
 it will stress up more against the back.

(N.B. just bought 972 worth of sequins from  
 New Fan Trimming - 8mm Gold, Clear, Silver +  
 10mm Square. I am also ordering sequins  
 from Sustainable Sequin Group (Katie Lowe)).

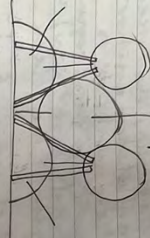


(see opposite)

Fig. 6.5 Reflective Design Journal (RDJ) 27.10.20

30.10.20

Finished the previous design structure -



Not a perfect sample, but very encouraging

Stability is much improved and has opened up a lot of possibilities. The last few days have used up a lot of rejected imperfections. Now to try and work with new sequences - clear & silver for which will allow the new bryle beads to be seen (as well as the thread).



29.10.20

The experiment from 27.10 is unstable; the 2nd sections don't stay in place, despite multiple anchor threads. The issue is the length of the anchor threads supporting the main; 1/2m at their longest (supporting the middle 2nd section).

So, I am returning to an earlier technique using long bryle beads as part of the support structure. In this instance, with one 12.5cm glass cord fast straws with a 3mm diameter, cutting the length to 49.

I will try to replicate the experiment of 27.10 using straws to see if it improves integrity of the form.



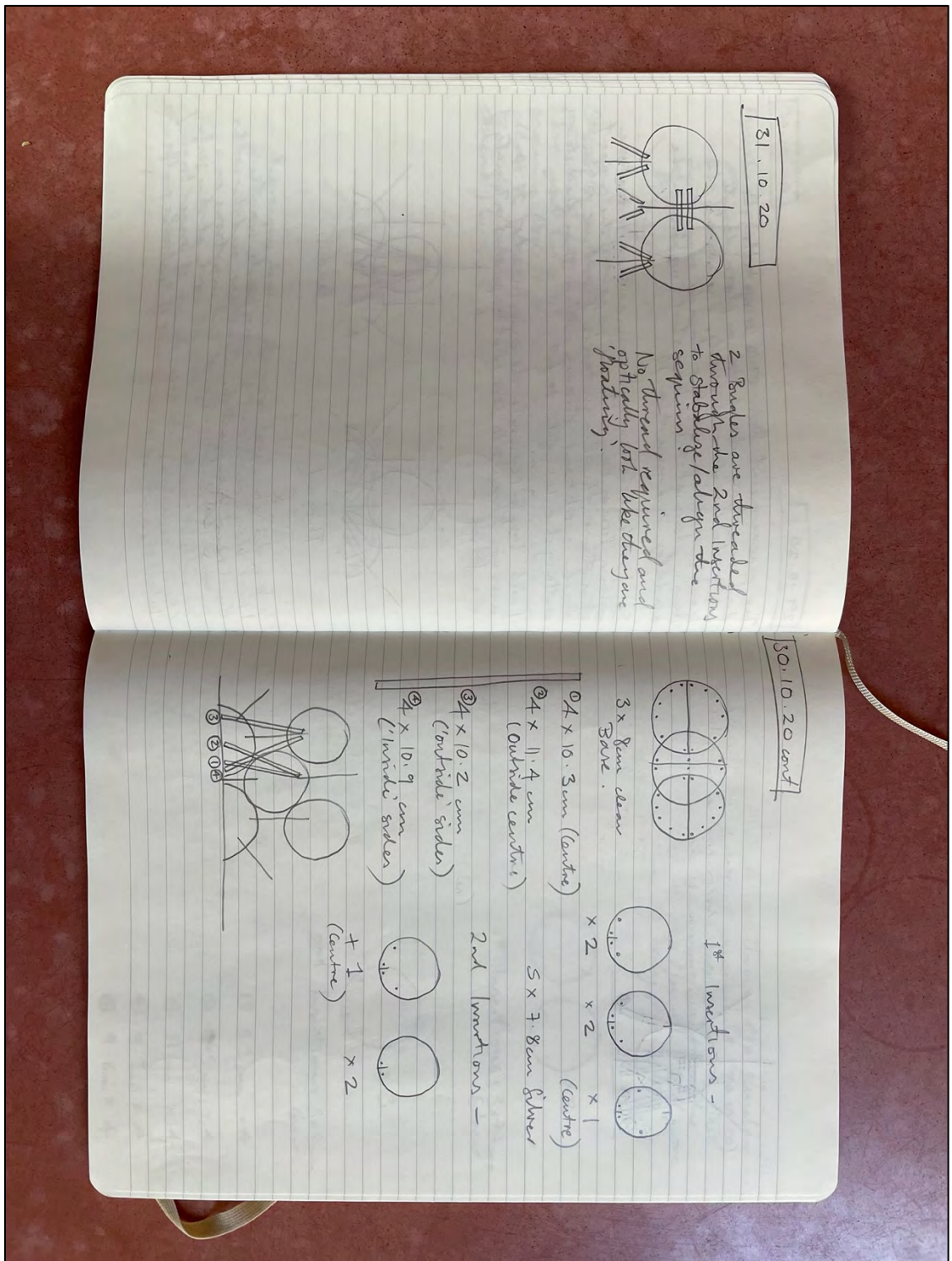
Thread.



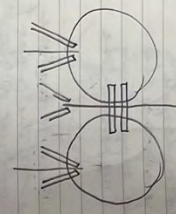
Beach.

So far the structural integrity is much improved. I have been resistant to using beads, wanting the thread to support the structure, and then worry for the 1st sections and 2nd sections on a smaller scale (8mm sequins). However, the use of longer bryle beads/straws is reminiscent of Snelson sculptures.

Fig. 6.8 Reflective Design Journal (RDJ) 29.10.20 and 30.10.20

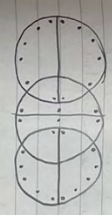


31.10.20

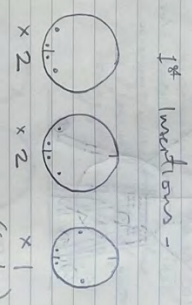


2 Beams are threaded through the 2nd iterations to stabilize/align the system  
 No thread required and optically isn't like other systems

30.10.20 cont



3x Beam clear space



1st iterations -

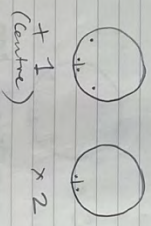
① 4 x 10.3 cm (centre)

② 4 x 11.4 cm (Outside centre)

③ 4 x 10.2 cm (Outside sides)

④ 4 x 10.9 cm (Inside sides)

2nd iterations -



+ 1 (centre)

x 2

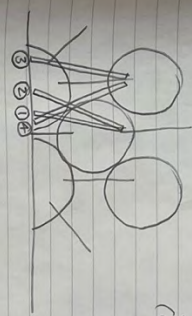


Fig. 6.15 Reflective Design Journal (RDJ) 30.10.20 and 31.10.20

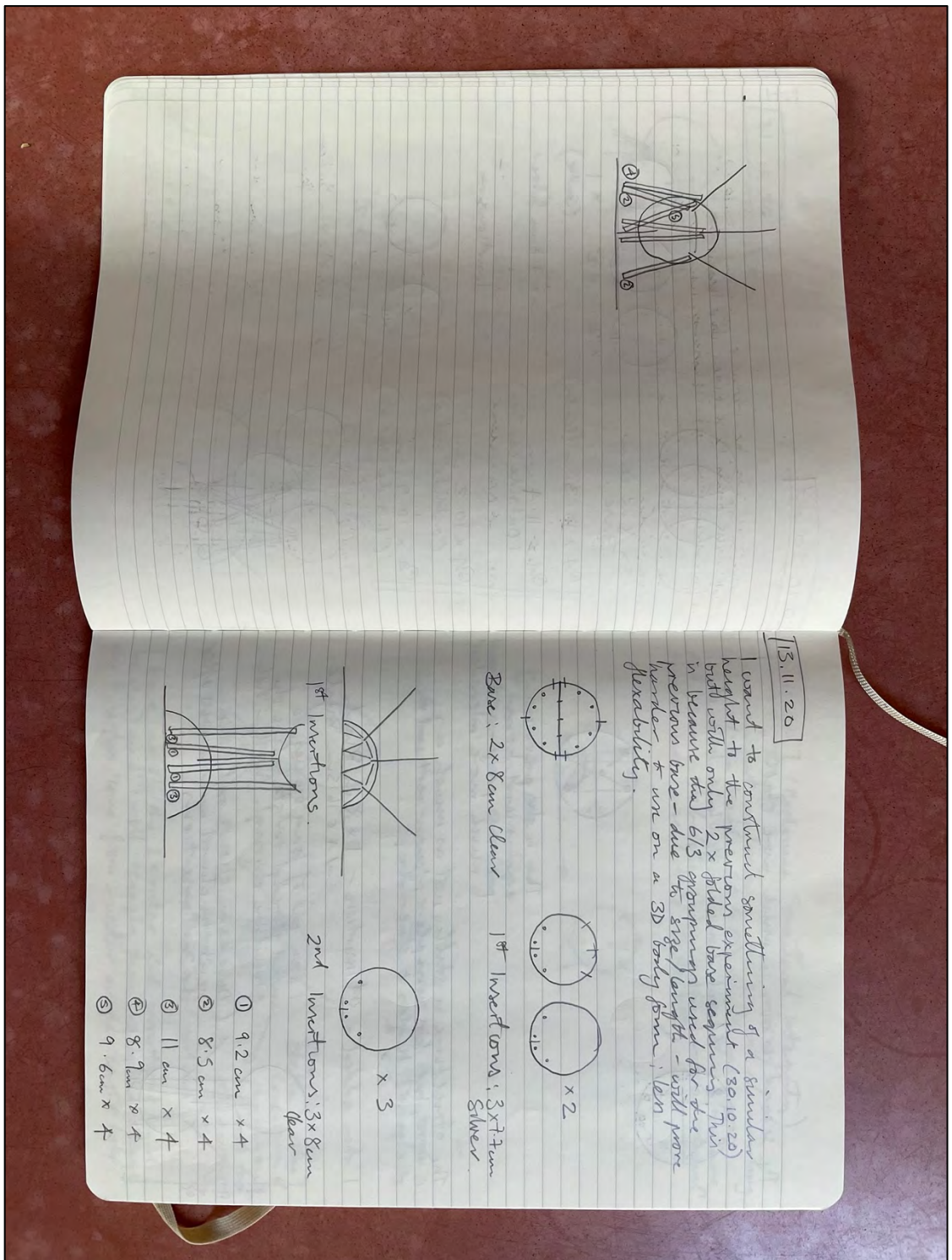


Fig. 6.22 Reflective Design Journal (RDJ) 13.11.20

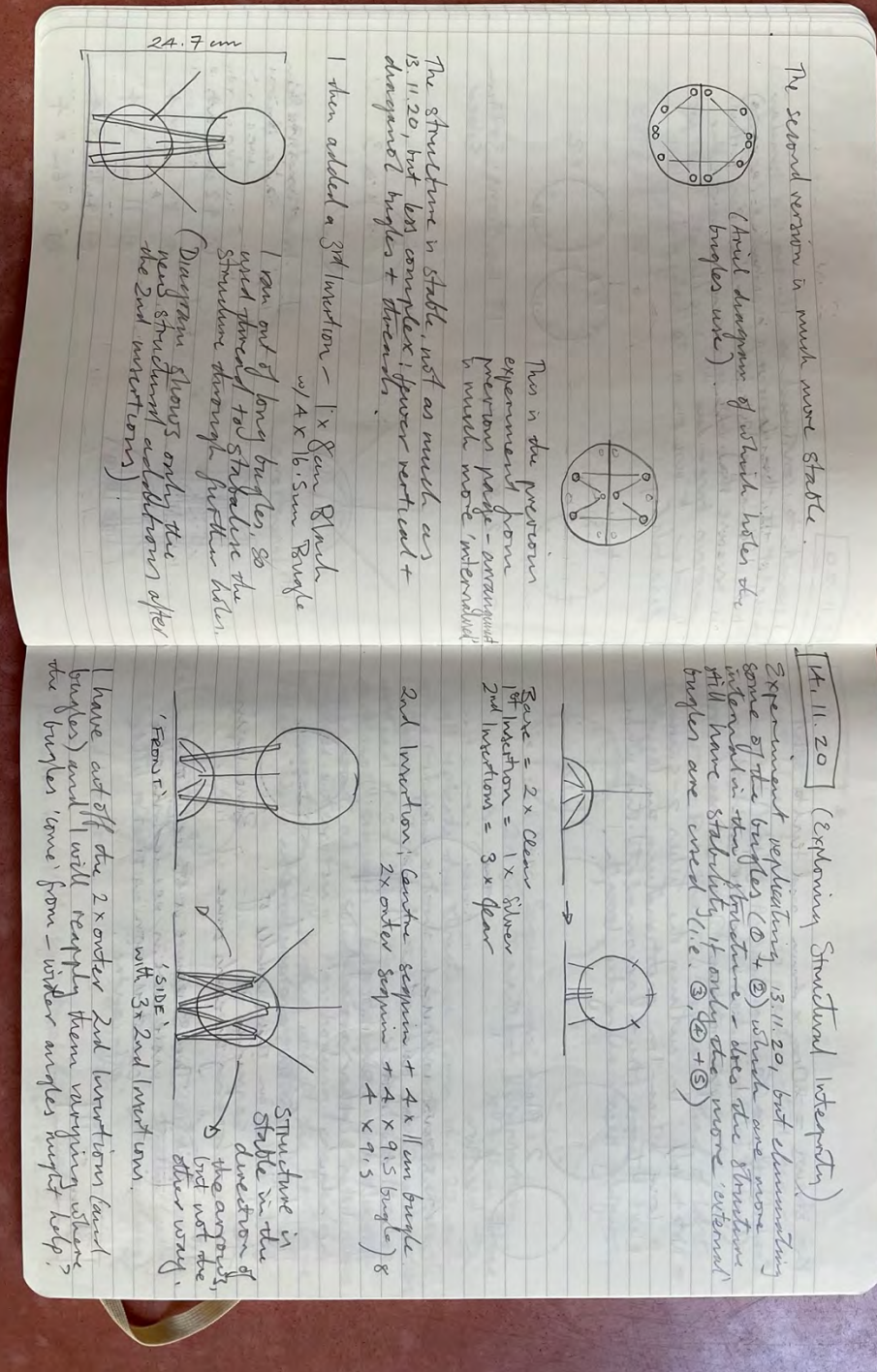


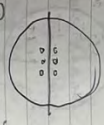
Fig. 6.29 Reflective Design Journal (RDJ) 14.11.20

31 cm Tall

craft straws are used on the centre holes either side of the neck and there will be used through the holes further around the edge.

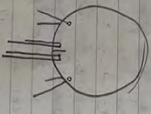
The holes are punched to the base square the surrounding straws come from

The structure in stable, through more care is needed in the construction as it is a little off-centre



2x Black square glued together

4th Invention



RA straws = 20cm x 4mm and hand to split

Craft straws = 25cm x 3mm A softer plastic than the ones we sampled previously. These cut much easier

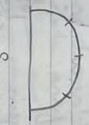
\* Note to self: In cutting the tubes 2-3mm to long holes in prestructuring the length. Next time, try to accommodate them when roughly measuring the length.

16.2.21 \*

FIRST day back on to practice this year. Before I start exploring shape + form I need to complete (as much as I can) experiments with height using the craft straws + RA straws sourced end of last year.

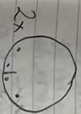


Base square 2x 8cm clear

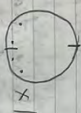


1st Invention, 1x 7.6cm silver

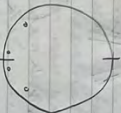
I will replicate the structure from 14.11.20 with some square colour adjustments - for example, I will use 2x silver + 1x clear for 2nd invention, instead of 3x clear. This is so that the two outward square (left + right) will be more apparent as a 'solid' colour and the reflection will be interesting. In hoping I can add a 4th invention if in this will be the first time I have been able to achieve this.



2x silver clear



2nd Invention, 3rd Invention



2x Black glued together (adding wire cutting)

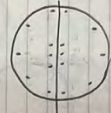
\* This is the most stable symmetrical of structures (6-17.2.21)

Fig. 6.32 Reflective Design Journal (RDJ) 16.11.20

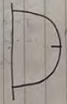


16.2.21 cont. EXP 2.

Aim: To simplify the form. Only 1 x 1<sup>st</sup> insertion not x3. This will negate the need for the Blank Inples.



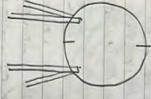
Base:  
2 x Clear Segments



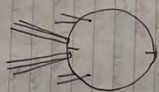
1<sup>st</sup> Insertion  
(2) Blank Segments



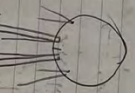
This batch of four Blank Segments from the Heterodermata are all cutting, hence the need to give 2 together (we're strengthening double sided type - carrier + lens merry).



2<sup>nd</sup> Insertion  
Clear Segment  
Blank central straw  
Blank x 4



3<sup>rd</sup> Insertion  
Blank Segment  
with craft straws x4  
+ Blank Thermal  
(Unstable) (H-Unit)



4<sup>th</sup> Insertion  
Blank Segment  
with Craft Straws  
Thermal  
(Capped)

Slightly difficult to construct. I will take it apart and try to assemble in a different manner.

Thoughts on 16.2.21

The structure is now very complicated.\*

The structure is more vertical than horizontal - when applied to the garment, try will be compensated by adding lower structures between these higher ones.

Maybe do not use external thread in the 3<sup>rd</sup> + 4<sup>th</sup> insertions? This will change the H-roads - which may or may not be an improvement.

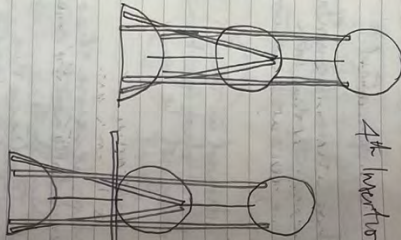
\* I struggle with this. Perhaps because there taller structures are now different (to me) from form previous experiments. In looking at the previous bodies, the structures are much simpler (in lower, if coarse). And it is an experience that I find interesting. I forget whether how argument will work with these new taller structures and I'm also not sure if I will like it.

Although one of the research questions in how tall I can build you intimate proximate space, the end result also needs to fulfil and respond to my personal taste/aesthetics + strength. This is less relevant to my project.

- ① Can it be simplified?
- ② Can I make it them (as multiple) work as a garment that to me feels warm, original (and fashionable).

Fig. 6.36 Reflective Design Journal (RDJ) 16.11.20 cont.

4th Inversion: Stable but not symmetrical



I tried shading in a long  
to give the audience  
shape from the 3rd Inversion  
which little difference to  
the inequality of structure.

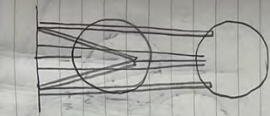
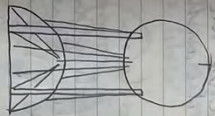
I think I've gone as far as I can with this  
structure for now.  
An idea that just came to me - try to build  
height with 3 x pairs of bare squaring -  
quadranting the angle of the angles and  
than vertical and thin might work. The  
form more symmetrical, stop of form  
No doubt, but of this will be what I've personally  
gathered; the 3 x base patterns make  
them up on the curves of a quadrant body  
more difficult.

17.2.21

Exp 2. from 16.2.21 was very uninteresting,  
the form sits firm side to side in going  
to take it apart and rearrange with the  
springs in the 'outside' holes, rather than  
the central ones to give it that extra  
stability.



2nd Inversion only becomes very  
stable when extra internal members  
are added at the centre after.  
But quite a pleasing little structure  
at this point.



3rd Inversion. More stable with the  
height on the outside, but structure  
bits to one side or the other; never  
exactly in the middle. This is  
probably impossible to correct in  
a structure where the main  
tension is vertical. Needs  
horizontal tension to compensate.  
A wider base might also  
compensate for this, so another  
line are more diagonal?

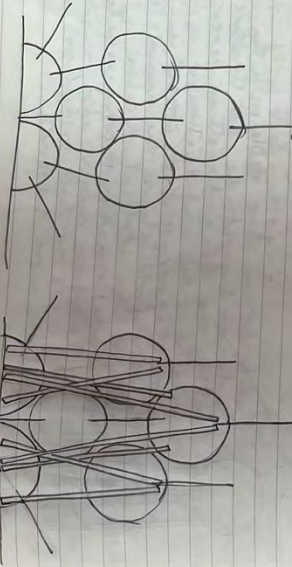
Fig. 6.48 Reflective Design Journal (RDJ) 17.02.21

But There are 2 issues that these recent experiments all display -

① The base sequins are starting to curve upwards from the underlying threads? Possibly from the caps gradually structure towards needed to support the structure.

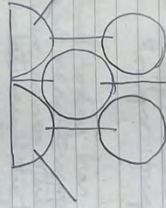
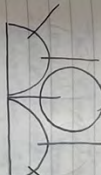
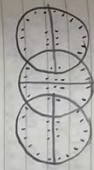
② The 2nd insertion middle sequin is a little bent / squashed after the 3rd insertion in a slight - are the underlying threads too tight?

However there issues are less visible in this structure. There more opening in structure both better - less vertical and more horizontal. Can support structure working with this (multiples of 2) on the body.



19.2.21 + 23.2.21

Thinking of a combination of 31.10.20 + 16.2.21



1st insertion 5x silver

2nd insertion 3x silver



Using the 'buck' (begin) on the wider holes on the sequins (rather than the gaps) and make the structure more stable and supports the need for the 2 short lengths through the central 2nd insertion (as per previous exp. 31.10.20)

23.2.21

can I add a 3rd insertion to the 3x 2nd insertion 2 by 1 x 4th insertion in the middle 3rd insertion. The structure is more stable than structures built on 1x pair of base sequins.

(So: 5cm Tall.)

Fig. 6.56 Reflective Design Journal (RDJ) 19.02.21 to 23.02.21

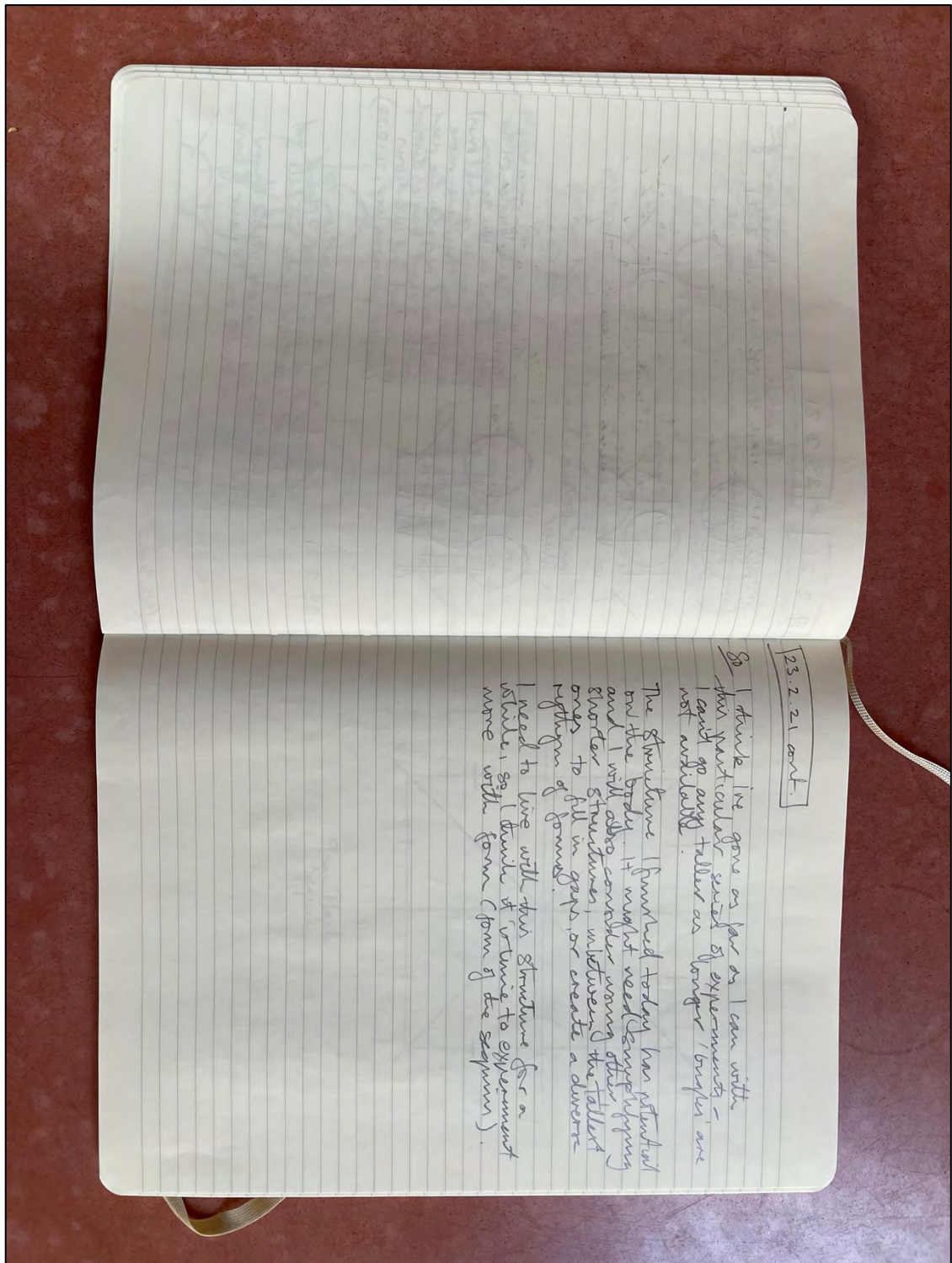
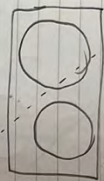


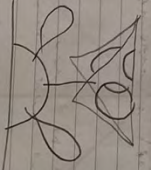
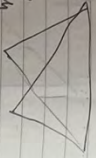
Fig. 6.57 Reflective Design Journal (RDJ) 23.02.21 cont.

2-3-21 Exp 2

Using the effects from Sustainable Sequin Group



and folding  
from diagonally  
impossible to strand!

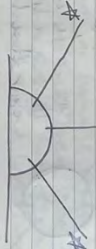
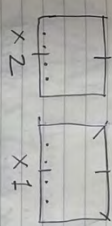


2x circular sequin  
1x "1st inversion"  
2x "Twist Sequin" film  
2nd inversion

The form looks interesting in photos but too irregular in real life. All symmetry and the square structure too difficult at certain angles (see above diagram).

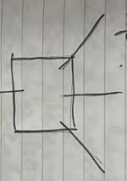
2-3-21

Square sequin - starting with a simple form - 2x either base sequin 1st invert - 3x 4th base sequines

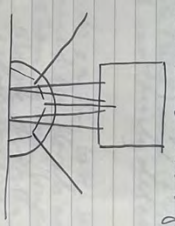


2nd inversion only possible in the central sequin as the other 2 sequins indicate for out (#)

1st attempted to put 2nd inversion x 2 but structure so hard to construct I gave up.



(Doesn't work!)



Instead I have added extra order threads to the center 2nd inversion (see above). However, the sequins are relatively heavy - 2 glued together to prevent curling - should find structure needed.

Fig. 6.61 Reflective Design Journal (RDJ) 02.03.21

2.3.21 EXP 4



Using a larger piece of off-cut, sandwiched between 1/2 size sequins

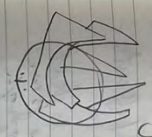


20mm

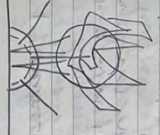
Very simple and very sculptural. The simplicity appeals, and the idea for it came to me in sequins. It's like a bun or a bun or a bun. The off-cut, giving them form, we'll be but does that matter? It might be a movement for the garment (where there has been some before).

2.3.21 EXP 3

Cutting up the off-cuts and playing into existing sequins. Creating a "shattered" sequin



Then making a simple structure using shattered sequins. Some 2x1st iterations and 1x2nd iteration.



This could be interesting, but it's too early to form much of an opinion and I need to look with it from a few days. The shards of sequins have a sharp + aggressive (like I like) and if used on a garment would certainly elicit close proximity.

When placing the shards on the bare sequin, the form is mostly formed by flash and fibers, creating a broken thin layer (the cut glass) attached. (Maybe slightly?) experimental (Berman experimental?)

This is certainly an off-cut way of using some of the sequin film off-cuts. "No-waste" sequin certainly.

Fig. 6.69 Reflective Design Journal (RDJ) 02.03.21 cont.

Is this interesting or not? By showing them on the membrane I can see these negative space gaps/folds left in the space surrounding the membrane.

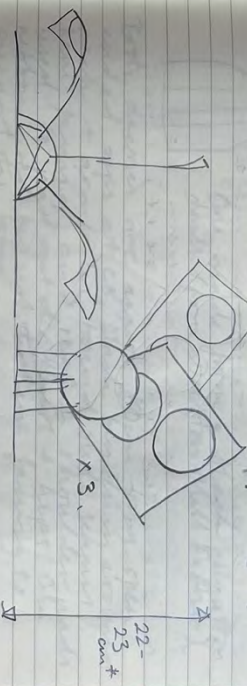
(I'm now reluctant to cut back the film/offcuts - this might be a thing).

I need to create multiples of this form so that I can experiment with replicating the form around the membrane. I have several offcuts to create 1 more structure (starting 62 x off-cut film are transparent, making them harder to see / photograph). Need to order more film from SSC.

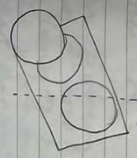
9.3.21

Aim: To replicate 2.3.21 sep. & adding 2x extra 1st iterations? like?

- how will it move?
- does it have the aesthetic appeal to be used on a garment?
- how is 'aesthetic appeal' judged?



Very solid along the axis of the spread. I will try cutting the off-cut rectangle back a bit, similar to previous experiment so that the cut out form is less lateral.



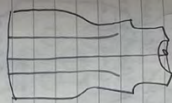
I have started to play with the placement of these structures on the membrane.

\* This includes 'gap', offcuts do not stand up straight,

Fig. 6.72 Reflective Design Journal (RDJ) 09.03.21

26.8.21

So, for the next week I've been making two simple shift dresses -



One made from the grey wool and camel hair caber (as the bodice)

One made from a black poly-cotton drill (from Dillston Mill fabric)

Both dresses are approx 80cm long, open under arms at c.b., black binding around neck + armholes, bound single seam, hem facing and regular shoulder patch used to pad out the bust + hips. The ribbon used behind the hem facing to support the form.

The reason for two versions of the same dress - when I add the structure (as per 9.3.21) the canvas dress will contrast with the front sequins + pins. The black dress will not.

I'm feeling very frustrated by all this mgl of now, probably when it's done, we go long to finish the dress; going straight the stitching and making something that doesn't require creative thought. However, I force myself to put some structure on the canvas dress and don't like the contrast.

PHO ->

Fig. 6.87 Reflective Design Journal (RDJ) 26.08.21



26.8.21

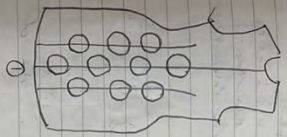
cont.

Is it done? I know it? The structures are quite large, and it's not just iteration in itself, it's able to put them closely together and give the form (try again) and therefore, in seeing the form (sequencing) spot spaced out, they look asymmetric. This might change with further iteration... about it! just word on above the dress

The nature of the form sequin is too regular, obvious (down the CF). I need to try



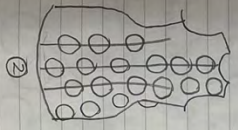
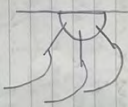
27.8.21



① Structures are added to the dress, starting at bottom of and all the lines being down

The bodice form is vertical

So although the drawing is in a vertical form which started yesterday, the form is undervalued and therefore not dynamic.



② We added more structures on the right hand side of the dress (left hand side if wearing it) - I need to make more structures if I'm to cover the dress + 'plum' makes the dress more dynamic, part of the side where it is possible to see through the same form, as a contrast to the back structure, is not necessary, the application will be to draw back the back dress will not be visible apart from a certain area, such as in neck and armholes. The above one is about the dress in itself so must be an issue

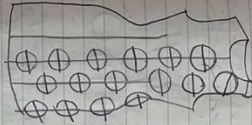
PTO -

Fig. 6.95 Reflective Design Journal (RDJ) 26.08.21 cont. and 27.08.21

27.8.21 cont.  
 the more structures are added.  
 (Approximation effect)  
 The structures 'lean' 15-27m away  
 from the driver surface (a rough measure-  
 ment).

15-22

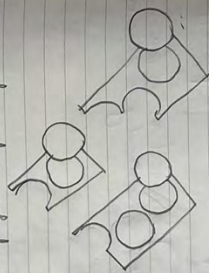
2.9.21



We placed the structures in  
 a similar half-deepening  
 as per 28.8.21, but now have the  
 filled in a horizontal.

This means that the 'lean' stand  
 away from the base layers rather  
 than slope down - resulting  
 up to approx 28cm from the  
 surface of the deck.

But the horizontal in field  
 presents a vertical problem!  
 When the field is vertical, the 2 base systems  
 can sit around the body/driver form.  
 The horizontal field makes the base of the  
 structure less 'sympathetic' to the body form.  
 But this remains a more successful than  
 the previous iteration.



The combination of the above 3  
 forms gives the effect of negative space pockets  
 surrounding the body.  
 There is also a bit of sideways movement.

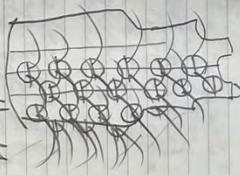
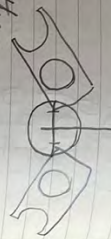


Fig. 6.99 Reflective Design Journal (RDJ) 27.08.21 cont. and 02.09.21

There is now a very delicate argument (albeit), but it is not stiff given the form of the dress is lyred, no longer a horizontal line, but a configuration of circles and points.




Apart from a few specific lines, such as the CB, and some of the neck, structures have been either randomly or by synthesis (up down) adding to the deliberate guide of forms. But because of the number of them they can be considered structures rather than material structures.

56 Separate structures in total.

$$8 \times 54 = 432$$

$$6 \times 2 = 12$$


ECLIPSE DRESS?  as well as 'eclipsing' the body + dress.

\* a wave of positive and negative sequin waves

15.10.21

but completed the dress is then possibly my last entry. The dress is very reminiscent of Genshup's 'sequin dress' circa 1966, within the orthodox fashion and the side bow at the waist.

I decided to apply the structures like so -

 as the 'line' (find a better word to describe them) stand away from the dress more effectively.

I've managed to extend approximately 2g on each side from the surface of the dress. However, unlike the Franklin sequin, these structures have more movement to them (are they elastic? When the dress is worn it will move and be more 'fluid' (of movement)).

The structuring incorporates the 'no part' film that the sequins are cut from + also means that there are complex and semi-complex circles, holes, holes, holes in the material space around the dress. There might be grains there. Notes and stereometrics.

Worthing black on black has been to protolanguage in terms of being able to see what I'm doing, but the effect is surprising in terms of blurring the line between body and (worn) space.

Fig. 6.106 Reflective Design Journal (RDJ) 15.10.21