

**Exploring the potential of UV-reactive materials as
body adornment through performance art**

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Abstract

This practice-based research project aims to explore the application of light-reactive materials in body adornments and expand the methodological approach of performance art studies to the field of contemporary jewellery. Through collaborative engagement with performance artists, the creative process of making, wearing and viewing light-reactive materials is transformed into performative experiences. Co-creation and co-reflection are central to the collaborative projects, which not only facilitate the emergence of open-ended art forms but also contribute to rich iterations of creative practice. Within this context, light plays an instrumental role in further transforming the viewing and wearing of artefacts into an immersive and theatrical experience, inviting all participants to reconsider their roles.

The research process adopted an iterative and reflective research methodology that evolved with the development of studio practice. Studio practice served as the primary research method, which was continuously developed through critical reflections within the research context. Between 2019 and 2022, seven workshops were conducted, resulting in a substantial body of artwork, including jewellery or wearable objects made from light-reactive materials, performative installations, and live performances. An abundance of visual documentation, such as videos, photographs, sketches and drawings, was collected throughout the research activities. Informal discussions and more formal interviews with audience participants and collaborators served to expand and enrich the knowledge and insights already gleaned from the researcher's studio practice.

This thesis argues that light-reactive jewellery, in its making, wearing and viewing, embodies a distinct form of performance through interactions between the body, light and space. This proposition draws upon a long-standing tradition in fine jewellery where light is intrinsically woven into the design and making of pieces to enhance the interactive and performative experience of wearing and viewing jewellery. The exploration of light-reactive materials as body adornments expands this tradition and adds a new dimension through interdisciplinary engagements with fields beyond jewellery. By borrowing performance art methodologies to investigate light-reactive

wearable objects, it challenges and expands the boundaries of contemporary jewellery, emphasising the active role of the body in shaping and transforming the processes of making, wearing and viewing into performances, thereby blurring the boundaries between contemporary jewellery and performance art.

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Declaration

I declare that the work contained in this thesis has not been previously submitted to meet the requirements for an award at this or any other higher education institution.

I declare that the Word Count of this thesis is 50344.

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1. Introduction

Artists have been using light as a source of inspiration for centuries; it serves various functions in the aesthetics and poetics of different historical periods (Abulafia, 2015). It can be argued that light also plays a significant role in how jewellery is traditionally observed and appreciated on the body. Harnessing natural light by manipulating reflective and refractive materials is one of the key characteristics of traditional fine jewellery. The investigation of the application of light-reactive materials in contemporary jewellery extends this tradition. Since the 1960s, contemporary jewellery artists have been challenging the traditionally and socially constructed conceptions and notions of jewellery. As such, art jewellery making and wearing have become more than just a symbol of wealth and social status; they have evolved into an artist's pursuit of autonomy and personal expression.

This departure from tradition is evident in the ways in which contemporary jewellers have considered or explored almost any non-traditional jewellery materials, and light is one of the least examined mediums (Cerutti, 2017). A small number of artists have explored light in relation to the body. However, according to Oberlack (2011), most of the studies that have examined light as body adornment in the field of jewellery are focused on jewellery that is crafted with light sources, such as light-emitting diodes (LEDs) or other types of light-emitting electronics; researchers have not conducted an in-depth examination of how the light emission interacts with the body. Despite the advanced development of technologies in wearable light, such as LEDs, the concept of "light jewellery" has still not been widely explored in contemporary jewellery (Oberlack, 2011).

The art of working with light in relation to the body has not been further examined for over 10 years, with the last study of this nature being Ulrike Doris Oberlack's 2011 doctoral study. Oberlack's study explores advances in miniature light sources to establish new forms of aesthetic expression through wearable light. Although the mechanisms of light-reactive jewellery and light-emitting jewellery are different, there are similarities in terms of the aesthetics of artistic expression and the performative and dynamic interplay between the jewellery, the body, light and space. Oberlack

and other jewellery artists have collaborated with dancers to choreograph wearable light and other types of jewellery performances as research or art projects. However, how the collaborative process of working with performance artists may impact the making, wearing and viewing of “light jewellery” is an area that currently lacks and requires research.

1.1 Research aims, objectives and questions

Research questions

1. What are the specific interactions between the body, light and space that are facilitated by light-reactive materials worn on the body?
2. How can performance methodologies be used to explore and analyse these interactions?
3. How does the collaborative nature of performance impact the process of making, wearing and viewing jewellery?

Research aims and objectives

Situated at the intersection of contemporary jewellery and performance art, this research aims to push the boundaries of contemporary jewellery as an interdisciplinary subject and to challenge traditional perceptions of how jewellery can be visually and physically experienced on and by the body. By drawing upon knowledge from the theory and practice of performance art, this study aims to develop an in-depth understanding of the interplay between light-reactive jewellery, the body, light and space. Furthermore, by transforming light-reactive materials into more than just body adornments – that is, by extending the application of such materials to embrace larger wearable objects and performative installations – this research aims to enrich our understanding of the performative experience involved in making, wearing and viewing jewellery.

To achieve the aims stated above, the research objectives are designed to align with the overall structure of the thesis (Figure 1.1-1). This approach establishes a clear correspondence between the research questions and objectives and their positioning within the thesis. It also facilitates a better understanding of the interrelationships between each chapter.

The objectives are to:

- Conduct a literature review to explore the role of light in traditional fine jewellery and contemporary jewellery and investigate how jewellers integrate light as a design element in their creations.
- Analyse the interrelation between light and the performative qualities present in both traditional fine jewellery and contemporary jewellery through material perspectives.
- Introduce current debates and concepts concerning the interdisciplinary nature of contemporary jewellery, with a specific focus on the performative approaches employed by contemporary jewellery artists.
- Develop a practice-based research (PbR) methodology in which studio practice serves as the principal research method and explore performance art methodologies.
- Develop data collection methods. Key methods include structuring the studio practice into three phases of the making process and conducting creative workshops and collaborative projects involving audience participants and performance artists.
- Conduct interviews with the audience members and performance artists following their participation in the creative and collaborative workshops.
- Analyse the data collected from the interviews. The insights that emerge from the data analysis serve as the foundation for the development of the research themes and shape discussions in subsequent chapters.
- Reflect on the insights that emerge from the creative research process and interviews and develop them into themes that can be contextualised within the wider body of discussion. This approach facilitates a critical and in-depth understanding of this study's research findings.

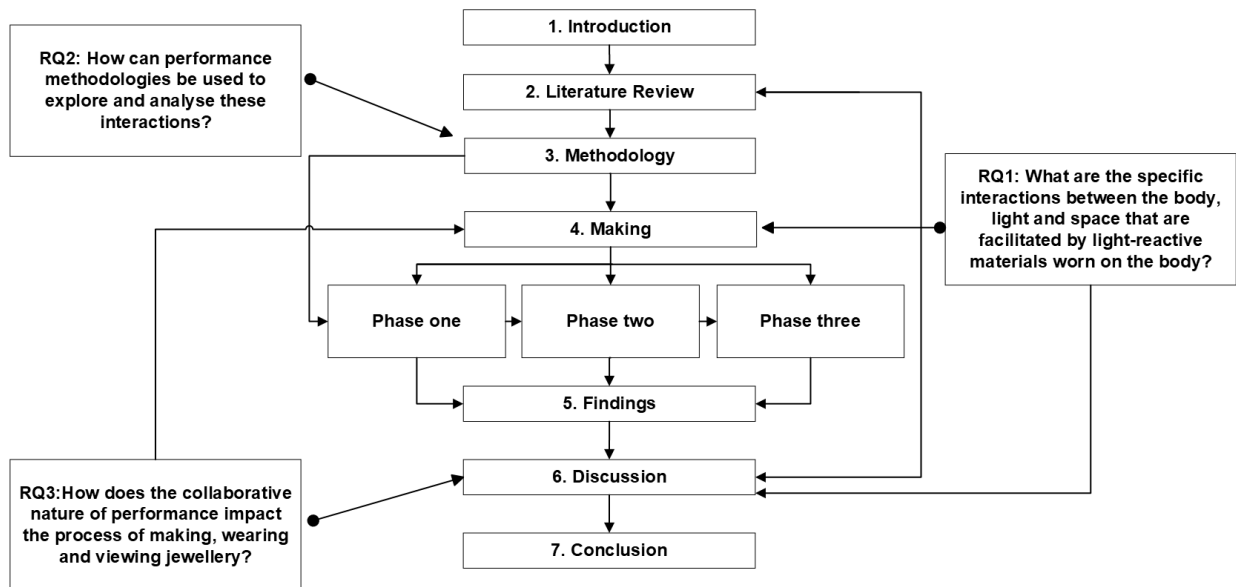


Fig. 1.1-1 The structure of the thesis and the relationships between the chapters and research questions.

1.2 Research methodology

This research has adopted PbR methodologies. As the study features a substantial focus on creative practices and has used the processes in studio practice as a means of investigating the research questions, a critical reflection on the processes involved in making artefacts and the artistic experience was regarded as a significant part of the enquiry. An iterative and reflective research methodology was established and evolved through the exploration of studio practice. This enabled theory and practice to be informed by and interwoven with each other. In the collaborative performance projects, co-reflection (through the co-creation approach) was used as the primary method of reflecting on the collaborative and creative process and outcomes.

As the research project includes creative artefacts as the basis of its contribution to knowledge, and as its claims of originality are demonstrated through the creative research process (presented in multiple artistic forms), it has therefore adopted an

experimental PbR methodology, which provides a foundation upon which to achieve the research aims and objectives (Candy, 2006). This research, positioned at the intersection of contemporary jewellery and performance art, adopts performance theories and techniques and engages in collaborative processes with performance artists to explore the complex relationship between light, light-reactive materials, the body and space.

As it employs studio practice as the primary research method, this research project has been structured into a series of creative workshops and collaborative performance projects, allowing it to investigate different perspectives on the research questions. The participatory experiences of the audience members and performance artists were captured and analysed through visual documentation and semi-structured interviews. The insights that emerged from these interviews shaped the thematic analysis, which was then situated within a wider critical context. Documentation was essential to reflecting on and evaluating the artefacts produced in the studio-based environment. As such, research conducted through making, documenting and reflecting was the primary means of disseminating the research process, with these processes forming a fundamental part of the dissemination and communication of the research outcomes.

1.3 Contribution to knowledge

This research's key contributions to the field of contemporary jewellery can be summarised as follows.

Enriched understanding of light-reactive jewellery in alternative materials.

This study contributes to the evolving dialogue on the use of alternative materials in contemporary jewellery, specifically focusing on light-reactive (fluorescent) materials within the category of light-emitting smart materials, which have not been extensively explored in this area of the field of contemporary jewellery.

Expanded understanding of the blurred boundaries between contemporary jewellery and performance art. This research broadens our understanding of the

intersections between contemporary jewellery and performance art and extends the boundaries of contemporary jewellery as an interdisciplinary subject.

Expanded aesthetic expressions. Exploring light-reactive body adornments through performance methodologies has significantly facilitated the generation of open-ended art forms during this artistic research. Collaborating with performance artists provides valuable insights into the intersection of jewellery making and performance making. It showcases how the interplay between light-reactive materials, the body and space enriches and impacts the creative process in both fields, thereby facilitating the expansion of rich and artistic expressions.

Rich visual and textual materials. This research yields rich visual and textual materials that are derived from the active participation of audience members and performance artists in creative workshops. In this way, the study provides diverse perspectives on how the intricate dynamics between the body, light and space are facilitated by light-reactive materials.

An interdisciplinary conceptual framework for contemporary jewellers. This research constructs a conceptual framework and creative strategies for successful interdisciplinary collaborations between contemporary jewellery and performance art.

1.4 Terminology

Light-emitting smart materials: Light-emitting smart materials are “materials or products with molecules that become excited by the effect of energy, e.g. the effects of light or an electrical field, to emit light” (Ritter, 2007: 110). This process, known as luminescence, occurs when the molecules of these materials temporarily absorb energy and then release part of it as visible light, without any significant emission of heat (Ritter, 2007). Generally, luminescence can be classified within several categories. The luminescent materials used in this study fall under the category of photoluminescence.

Photoluminescence: Phosphorescence refers to “the excitement of a molecule by light radiation”, where “the transition from the excited state back to the ground state is accompanied by delayed light emission” (Ritter, 2007: 111). The materials used in this study to create body adornments are classified as fluorescent materials, which fall under the category of photoluminescent materials. According to Ritter (2007:111), fluorescence refers to “the excitement of a molecule by light, in particular by its ultraviolet radiation component; the transition from the excited state back to the ground state is accompanied by almost simultaneous light emission”. In this study, the term light-reactive materials and fluorescent materials are used interchangeably.

Light-reactive materials. In this research, light-reactive materials are a range of fluorescent-coloured materials and components, including textiles, fabric tapes, cords, nylon wires, papers, zip ties and recycled plastics. These materials can glow under the blue- or violet-coloured light generated by LED lighting. It is worth noting that fluorescent materials can also respond to ultraviolet (UV) light sources, known as black lights, which are designed for stage use and have any harmful radiation filtered out. Both LED and black lights are commonly used in performance and stage lighting designs. The studio practice carried out in this research adopted a combination of blue and violet LED lights to trigger the fluorescence phenomenon in the light-reactive materials, creating a distinctive glowing effect perceived as bright, vibrant and neon colours.

Light-refractive materials. This term refers to the capacity of materials to bend or distort the light passing through them. In jewellery-making practices, diamonds, gemstones, glass and some plastics are commonly used to create captivating optical effects such as sparkle and shimmer. Bearing one of the highest-known refractive indices, diamonds exemplify this property and can significantly bend light; this, when combined with faceting, leads to their signature sparkle. Diamonds’ unique attribute of total internal reflection further enhances their brilliance by ensuring maximum light visibility to the observer.

Light-reflective materials. These are materials that bounce back any light that hits their surfaces. Depending on the material’s nature, this reflection can be specular

(mirror-like) or diffuse (where light is scattered in many directions). In traditional fine jewellery practices, precious metals such as gold, silver and platinum are often crafted into exquisite jewels with a highly reflective finish, resulting in a dazzling and attractive effect. The primary difference between light-refractive and light-reflective materials lies in the way they interact with light.

2. Literature Review

This literature review introduces the current debates and concepts related to the interdisciplinary field of contemporary jewellery. It focuses on the intersection between jewellery and performance art and the significant role that light plays in enhancing the performative aspect of making, wearing and viewing jewellery. According to Broadhead (2005: 25), contemporary jewellery has distanced itself from traditional associations with “wealth, luxury, durability and privilege”, pivoting its focus towards the exploration of ‘material, form, value, colour and movement’. This shift has led contemporary jewellery, as a discipline, to intersect with other fields, thereby fostering the development of interdisciplinary creations through its inherent exploratory nature (Broadhead, 2005). Situated in the intersection of contemporary jewellery and performance art, this review investigates the thread of light as a design element employed by jewellers in their creative work. It also explores how the interplay between jewellery, light, the body and space in these works impacts the experience of making, viewing and wearing jewellery.

This review is structured into three sections. The first section explores the significance of light in traditional jewellery by examining the human fascination with the interplay between light and precious materials and how this association contributes to conveying symbolic meaning. The review explores the role of light in enhancing the performative qualities of precious jewellery and considers how the interplay between jewellery and light, which has evolved in tandem with technological advancements, has influenced both jewellery-making techniques and the early development of alternative materials. The second section explores the dynamic interplay between light, the body, jewellery and the space at the intersection of contemporary jewellery and performance art, with a particular focus on light-emitting jewellery. The third section explores the performance-based approaches that jewellery artists have actively employed in their creative practice, with a particular emphasis on the approaches that are directly related to this research.

2.1 Significance of light in jewellery

2.1.1 Symbolic value

Jewellery is “an object that is worn on the human body, serving as both a decorative and symbolic enhancement to its outward appearance” (Unger and Smeets, 2019: 18). The term “jewellery” is derived from the French *joaillerie*, which denoted any small-scale treasured object in early modern Europe. By the late 17th century, however, the term referred exclusively to personal adornments made of precious metals and gemstones (Pointon, 1999). “Jewel” typically signifies the gemstone in jewellery, but it can also be used to describe an object containing gemstones, reflecting how the gemstone’s value symbolises the entirety of the object in question (Pointon, 1999). Wearing highly reflective or refractive fine jewellery that is (usually) made from precious materials such as gold, diamonds and other valuable gems is regarded as a visible symbol of wealth and social status for some individuals and cultures. As Pointon (2009) noted in her book *Brilliant effects: A cultural history of gemstones and jewellery*, the brilliance of a gem is typically regarded as one of the surest means of adding to the importance of its wearer. Pointon (2009: 13) further indicated that:

In an historical sense, jewellery may be understood as an index to forms of pleasure and as agency in the construction of identity and, therefore, also in the articulation of power. In short, jewellery as a phenomenon in cultural history links the economic with fascination and desire.

As one of the earliest forms of decorative art, jewellery holds a significant place in human history (Tait, 1986). The earliest-known items used as jewellery – perforated shells – were found at the West Asian site of Skhul (Israel) and the North African site of Oued Djebbana (Algeria) and date back to 100,000–135,000 years ago (Vanhaereny et al., 2006). These shells were transported far from the shorelines where they would normally be found, indicating their importance to and use as symbols by humans (Vanhaereny et al., 2006). The wearing of jewellery has been a universal phenomenon throughout history; it is believed to stem from the

fundamental human need to decorate and enhance the body (Polhemus, 2011; Unger and Leeuwen, 2017).

Building on the deeply rooted human desire to adorn the body, the interplay between light and jewellery can be viewed as a crucial element contributing to this fascination and symbolic meaning. One of the most striking features of gemstones, and something that forms the core of most jewellery items, is their interaction with light. This interaction is not merely physical; it also carries symbolic weight. In many ancient cultures, light was associated with spirituality, enlightenment and celestial bodies such as the sun, moon and stars. The philosophical theories and metaphorical stories related to the interactions of light with the materiality of gemstones further indicate people's fascination with brilliant jewels and how these jewels spark their imagination. Less obvious, but perhaps a more telling example, can be found in the practices of the ancient Greeks – or, perhaps, in our understanding of the ancient Greeks.

According to Finkelberg (1998), the “cosmos” (the pre-Socratic vision of the universe) represents a combination of order, fitness and beauty; it is a structured system characterised by perfect arrangement, which, in a derivative sense, is seen to mean “ornament” or “jewellery”. The body, once adorned, becomes a signifier within the cultural and social spaces we inhabit, echoing broader societal values, beliefs and identities. The body requires decoration because it is the core of the symbolic universe of *Homo sapiens*, and “by decorating it, the body finds itself in the symbolic universe” (Polhemus, 2004: 7–9). The act of adorning oneself with jewellery is a symbolic behaviour that creates and communicates nuanced meanings about our identities. As individuals, we may wear jewellery for myriad reasons. Invariably, however, doing so serves as a conduit for conveying our self-image. It facilitates the manifestation of our identity and how we wish to reveal ourselves to others (Unger and Smeets, 2019).

In Roman literature, jewellery is used metaphorically and poetically to describe cosmic and celestial phenomena. According to Piętka (2017: 279–283), in Latin poetry, the stars are allegorically described as being “gold” due to their colour or

similarity with precious metal. The moon's surface is described as "glittering silver", constellations are imagined as "goldsmith's ware" and the universe is represented as "a craftsman's workshop" (Piętka, 2017). Piętka believed that our sensory responses, on an instinctive level, associate clarity and sparkle with notions of perfection and goodness. The interplay between light and jewellery, particularly in the context of traditional fine jewellery, evokes captivating visual spectacles. This interplay creates a sensory, interactive dialogue between the wearer and the viewer. In the following sections, we venture deeper into the fascinating confluence of jewellery, light and the body by examining the performative role luminescence plays in the appreciation of jewellery.

2.1.2 Performative qualities of light in traditional jewellery

As a form of wearable art, jewellery has a multifaceted and interactive nature that is constantly being developed and enriched through engagement by the wearer and viewer. Cunningham (2008: 206) argued that, in terms of cognitive interaction, "objects, for the maker, wearer and viewer do have the potential to trigger memories, access knowledge, function on an emotional level, are ostensibly about people and the world in which they live". The intended meaning that the maker attributes to the artefact is that it is a single element within a complex web of intentions and interpretations, which are subsequently generated and further expanded upon by both the wearer and the viewer (Cunningham, 2008). Hence, jewellery functions as a dynamic, active and interactive medium through which people connect with their personal experiences, ideas and emotions, as well as with the broader social context.

Light is integral to the design of precious jewellery, as it fosters an interactive dynamic between the jewel, the wearer and the observer. The performative qualities of light in traditional jewellery refer to how the light embedded in precious materials transforms the experience of both the wearer and the observer. Just as an actor brings life to a character on stage, light "performs" within the materials used to make the jewellery, bringing the piece to life. In this section, we explore the significant role that light plays in perceptions of precious materials and how it creates a dynamic interaction between the wearer, the viewer and the piece of jewellery. We also

examine how this fascination with light, especially in relation to the use of precious materials in traditional jewellery, has influenced the development of the use of alternative materials. Examples include cut-steel jewellery, which can mimic the light-play of precious stones, and early applications of light-emitting jewellery, such as imitation gemstone pieces powered by small batteries. These can also be viewed as early instances of the democratisation of precious materials.

Although the interplay of light with jewellery is not strictly limited to precious materials, less is known about the history of jewellery made from “base metals, textiles, porcelain or less precious raw materials derived from nature, such as amber, shells, bones, fossils, wood, or feathers” (Unger and Smeets, 2019: 63). This may be because these items, being more prone to degradation over time, may not have survived in archaeological records to the same extent as pieces made from (more durable) precious materials. When we discuss precious jewellery, we typically refer to pieces crafted from precious materials that are of considerable value and notable rarity. These items typically functioned as symbols of a specific social status and as measures of wealth (Turner, 1996; Unger and Smeets, 2019). The artistic value of these pieces was generally due solely to the craftsmanship of the artisan (Unger and Smeets, 2019). The designs of these pieces often lacked novelty, with the emphasis primarily being placed on showcasing the material worth of the piece (Dormer and Turner, 1994).

The interaction between materials and light plays a significant role in how jewellers select which materials to use when crafting pieces. The distinct optical properties of various materials provide an array of opportunities for manipulating light. Traditional choices, such as diamonds, gold and gemstones, are favoured for their ability to reflect, refract and disperse light in captivating ways. When considering semantic associations with the word “jewellery”, among the most common adjectives used to describe a piece of jewellery are “sparkling”, “shiny”, “brilliant”, “eye-catching” and “glittering”. The brilliance and glamour of a piece of jewellery are primarily attributed to the expensive materials used to make it; even a single diamond in a traditional piece of fine jewellery can imbue it with a dazzling aura (Den Besten, 2011). Pointon (2019: 44) provided a vivid depiction of engaging in jewellery window shopping:

“Walking down London’s Bond Street at dusk before Christmas ... the jeweller’s window is full of white ever-moving light that is hard to describe – diamonds irresistibly drawing the look”.

The significance of light in jewellery is not merely confined to its material aspects. Instead, the light transcends this physical realm, inviting us to delve deeper into how it shapes our interactions with and perceptions of such adornments. Rouquet (1755: 18–19) discussed the dynamic relationship between the observer and the observed and the active role our senses play in perceiving and interacting with precious adornments: “Of all the organs of sense, the eye is doubtless the busiest; nothing can equal the activity nor the frequent assiduity of its looks. With an insatiable avidity it searches after new objects”. The radiance and worth of gemstones offer a highly reliable approach to augmenting the significance of our existence. These precious adornments make a conspicuous declaration about us even from a distance, thereby expanding the apparent boundaries of our being (Rouquet, 1755).

The symbolic value of jewellery and the appreciation of the use of precious gems and metals to decorate the body have driven artists and craftspeople across millennia to pursue highly skilled craftsmanship in their work. Known for their stunning visual appeal, diamonds are considered one of the most captivating forms of jewellery, with a long history of being used as symbols of value and luxury. As diamonds have a high refractive index, they can produce a notable glittering effect. After cutting and polishing, a diamond’s appearance changes from being a precious raw material to a desired artefact. In 17th-century Europe, the play of light in diamonds mimicked candlelight, the primary source of artificial illumination, thereby interestingly reflecting the social lives of those at the time. According to Walgrave (1993), the brilliant-cut diamond gained prominence during this period as a result of changes in the lifestyles of European courtiers and nobles. The rise of social activities, such as evening parties in high society, triggered competition among women and men who sought to demonstrate their social status and wealth. Walgrave (1993: 48) noted that “the deep sparkle of diamonds stands out wonderfully well by the flickering, often abundant candlelight”. Indeed, wearing these

ornaments was more than likely designed to draw the attention of others, rather than to only bring pleasure to the wearers themselves (Pointon, 2009).

In the early 19th century, the Romantic movement saw the emergence of naturalistic jewellery featuring recognisable flowers or fruit, which remained popular for decades (Victoria & Albert [V&A] Museum, n.d.). For example, the large spray of mixed flowers in Figure 2.1-1, which has a pin at the back and was worn on the bodice. Some of the diamond flowers in this piece are set on springs, adding to their sparkle as the wearer moved. The conscious pursuit of visual effect in jewels resulted in *en tremblant* brooches, which had brilliant components mounted on a metal structure. Over time, the floral motifs grew larger, and by the 1850s, these jewelled bouquets had become quite dramatic. Individual flower sprays could be removed and used as hair decorations. The chosen materials, the creation techniques and the active role of the wearer all contributed to the performative qualities of this jewellery. The *en tremblant* technique allowed the brooch to move synchronously with the wearer, creating a perpetually changing interplay of light and shadow on the surface of the brooch, which, in turn, enhanced the jewellery's optical performance. This transformation changed the wearer from a passive display into an active participant in the performance of light, at the same time facilitating interaction with the viewer.



Fig. 2.1-1 Spray ornament with gold, silver and diamonds (Unknown Artist, c.1850).
V&A Metalwork Collection, London. Image courtesy of the V&A Museum.

Since the Industrial Revolution that occurred in 18th-century Europe, many of the jewellery fabrication techniques used have become increasingly mechanised, enabling jewellers and craftsmen to access a wider range of materials (Bernabei, 2011). The most significant advancements involve cast and cut steel, while materials such as glass-paste stones are frequently used in complex designs and incorporated into fashion accessories. Bernabei (2011:16) believed that this shift engendered the creation of jewellery with “metaphorical value”, which was not anchored in “a narrative or figurative” counterpart but instead served as a substitute for more valuable materials.

Cut-steel jewellery became increasingly popular among the growing and relatively affluent middle classes of the 18th century (Bernabei, 2011). Distinguished by highly polished, faceted steel, it sought to mimic the radiant beauty and light-interaction properties of meticulously cut diamonds, thereby reflecting the era’s courtly fascination with diamond-centric adornments. The fashion of having men’s suits decorated with eye-catching, cut-steel buttons serves as a prime example of this. At the time, the trend among the middle and upper classes was to adopt darker colours for men’s daytime attire. This amplified the reliance on buttons to achieve the maximum sartorial effect, leading to a context wherein “the shinier, the better” often emerged as a prevailing design principle (Hoskin, 2014). In a V&A blog post, Hoskin introduced a story about a brown suit that was originally decorated with 43 cut-steel buttons (Figure 2.1-2). The cut-steel button trend reached its peak in the late 18th century, with some buttons growing as large as two inches in diameter. Due to the intricate work involved in producing cut-steel jewellery, its continued popularity ensured its status as a luxury item (Hoskin, 2014). This extravagant fashion trend ultimately became a subject of satire, as evidenced by a print from the 1770s that humorously portrayed young men donning large and dazzling buttons so bright that they blind a passing lady (Figure 2.1-3).



Fig. 2.1-2 Cut-steel buttons running down the front of a coat and waistcoat, featured in “The brown suit: Coup de bouton!” *V&A Blog* (Hoskin, 2014). Image courtesy of the V&A Museum.



Fig. 2.1-3 Humphrey (c.1777) *Steel Buttons: Coup de Bouton*, featured in “The brown suit: Coup de bouton!” *V&A Blog* (Hoskin, 2014). Image courtesy of the V&A Museum.

This fascination with glittering jewellery also influenced the initial applications of early light-emitting jewellery, such as imitation gemstone pieces powered by small batteries. In her book *Women and the Machine: Representations from the Spinning Wheel to the Electronic Age* (2001), Wosk explored the use of electric adornments to decorate women's bodies. According to Wosk, in the 19th century, with the advent of electricity, women in the United States and Europe began using light as a decorative element for the body, and one of the fashion trends among the upper classes was to use artificial light to create imitation gems. This fashion trend was initially influenced by the reality of the 18th century, when women actively participated in electricity experiments. In the pre-electoral era, women were often depicted in art in allegorical roles, as goddesses of light and truth (Wosk, 2001). These 18th-century depictions were recast in the 19th century and typically showed classically draped nude women representing truth, holding light-producing lamps or with their hands extended to produce light (Wosk, 2001). For example, in the French print *l'Expérience sur l'Électricité* (Figure 2.1-4), a woman holding metal rods is elevated to appear goddess-like in a demonstration of the use of a Leyden jar, which was a device for storing static electricity. This depiction helped to situate a potentially dangerous experiment within a world of rationalism and order, thus further emphasising the fascination with electricity (Wosk, 2001). By the late 19th century, these goddesses had become symbols of the modern electrical age.



Fig. 2.1-4 Anonymous (1700s) *l'Expérience sur l'Électricité*. National Museum of American History, Smithsonian Institution. Source: Wosk (2001: 70).

In the late 19th century, the use of electric ornaments to enhance the beauty of women's bodies became fashionable and symbolic of their social status (Wosk, 2001). A trend in fashion during the late 1870s and 1880s was the use of battery-powered "flash jewelry" for women (Wosk, 1993: 44), which was first popularised by the affluent of France and England. Imitation gemstone jewellery powered by small batteries and featuring electric lights shining through coloured glass to create the illusion of expensive and sparkling jewels became popular among women of various social classes. These jewels were normally worn in diadems or on brooches upon the shoulders. Tiny 2–4 V batteries were concealed within the dress, and a switch was often carried in the pocket (Wosk, 2001).

One notable example of this was Mrs Cornelius Vanderbilt's costume at the Vanderbilt Ball in New York in 1883 (Figures 2.1-5 and 2.1-6), at which she was photographed wearing an electric-light gown (Block, 2021). According to Block, the attire sported by Mrs Vanderbilt was technologically ahead of its time. The gown, which incorporated tiny electric light bulbs illuminating imitation gemstones, was this lady's representation of electric light. The gown also featured a functioning torch, which was powered by batteries hidden within the dress (Wosk, 2001). This showcased the advanced technological developments of the era, as the electric light bulb, invented by Thomas Edison (1847–1931), was still a novel technology and only present in a small number of households (Block, 2021).

Despite the widespread influence of electricity on daily life during this time, the use of battery-powered flash jewellery as a body adornment was still rare in the fashion and jewellery industries. The light-emitting adornments of the time carried a sense of danger and had little connection with the human body (Wosk, 2001). Mrs Vanderbilt's costume could be viewed as an example of the integration of advanced technology within fashion to introduce new performative dimensions. The small electric light bulb–decorated dress and the light bulb Mrs Vanderbilt held in her hand took on performative roles in the overall presentation, transcending their decorative function and embodying a theatrical essence.



Fig. 2.1-5 Mrs Cornelius Vanderbilt (1883) in the *Electric Light* dress.
Image courtesy of the New-York Historical Society. Source: Block (2021: 23).



Fig. 2.1-6 Anonymous (1883) *Electric Light*. Silk satin and velvet with silver and gold metallic tinsel. Image courtesy of the Museum of the City of New York.
Source: Block (2021: 23).

The development of small batteries not only expanded the application of these batteries in animated jewellery but also facilitated the incorporation of light-emitting elements in jewellery and costumes for stage performances. Gustav Trouvé, an electrical inventor and engineer, made significant contributions to the development of electrically powered technologies in the late 19th century. One of his notable inventions was the wearable Lilliputian sealed battery, which could animate jewellery, clockwork and other artistic objects (Desmond, 2015). Characterised by its unique operational mechanism, the Lilliputian battery maintained its longevity because it was activated only when horizontally positioned, thus avoiding unnecessary energy dissipation; this was a distinct improvement over other battery systems of the time. Another of the battery's features was that it could be reduced to be as "infinitely small" as required, resulting in a miniaturised, compact power source that could be encapsulated within a hardened rubber pouch for safety (Desmond, 2015: 17–18).

Due to their convenient wearability, these body accessories were utilised in a range of applications, including daily adornments and theatrical performances. Figures 2.1-7 and 2.1-8 present illustrative examples of battery-powered jewellery, including a diamond-studded bird-head ornament (equipped with animated wings) and costume accessories for ballet performances. Numerous theatre performances, such as *Le Ballet de Fleurs* and *La Farandole*, commissioned Trouvé to create luminous electric jewellery and costumes that were extremely advanced for their time. These light-emitting accessories that were utilised in ballet performances represent early instances of interdisciplinary collaboration between jewellery and performance artists, marking a significant extension of the use of jewellery in the realm of performance art.

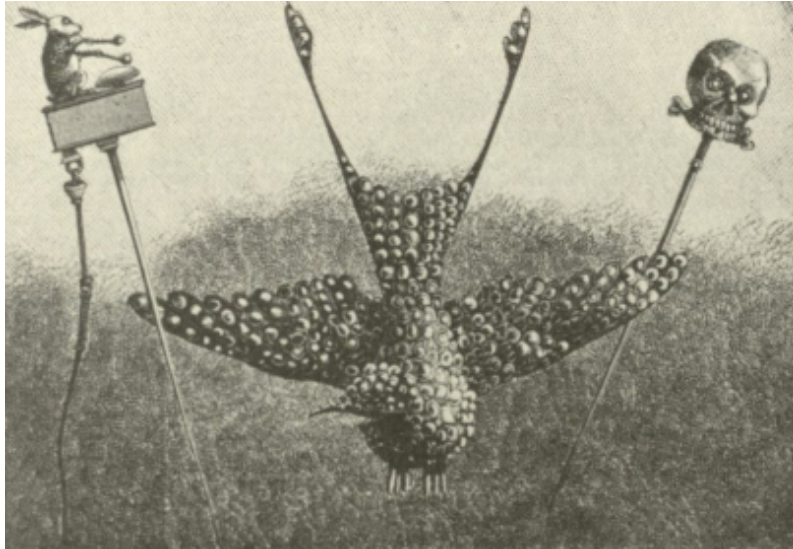


Fig. 2.1-7 Trouvé (n.d.) Illustration from *Scientific American*, 25 October 1879.

Source: Wosk (2001: 73).

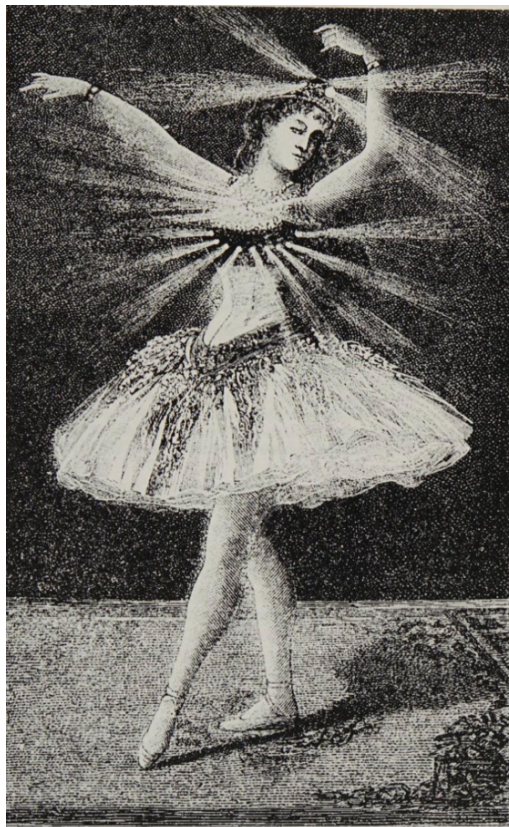


Fig. 2.1-8 Ballet dancer adorned with luminous electric jewellery created by Trouvé, from Barral, *Histoire d'un Inventeur* (1891). Source: Desmond (2015: 103).

Another early application of luminous jewellery in theatre performance can be traced to the pearl scene of the musical *Music Box Revue*, staged in September 1921 in New York. The jewellery and scenery were designed by the Russian artist Nicolas V. de Lipsky. This can be viewed as one of the earliest uses of phosphorescent materials in the design of jewellery incorporated into costumes and scenery. In this scene, the dancers wore pearl necklaces, bracelets, hats and shoes that glowed in the dark once the lights in the theatre were turned off. The effect was achieved using phosphorescent paint on the pearls; the paint absorbed the light from the arc lights under which the dancers stood before coming onstage. Figure 2.1-9 provides a close-up image of three dancers, showing the pearls in both light and darkness (Dime, 1921). A review of the performance by Dime (1921: 746) captured the audience's enthusiastic response to this innovative display of luminosity in theatrical costume design:

Without warning every light in the entire house is turned off suddenly, and we now see on the stage nothing but the pearls, shining in a weird light. The effect is indescribable when first viewed, as nothing but the figures of the girls, outlined in softly luminous pearls, can be seen. There is a gasp of delight and amazement from the audience, and then the excited buzz, "How is it done?" The glow of the pearls is exactly the sort of light you are accustomed to seeing on a radium watch dial. It is a green, soft, luminous radiation.

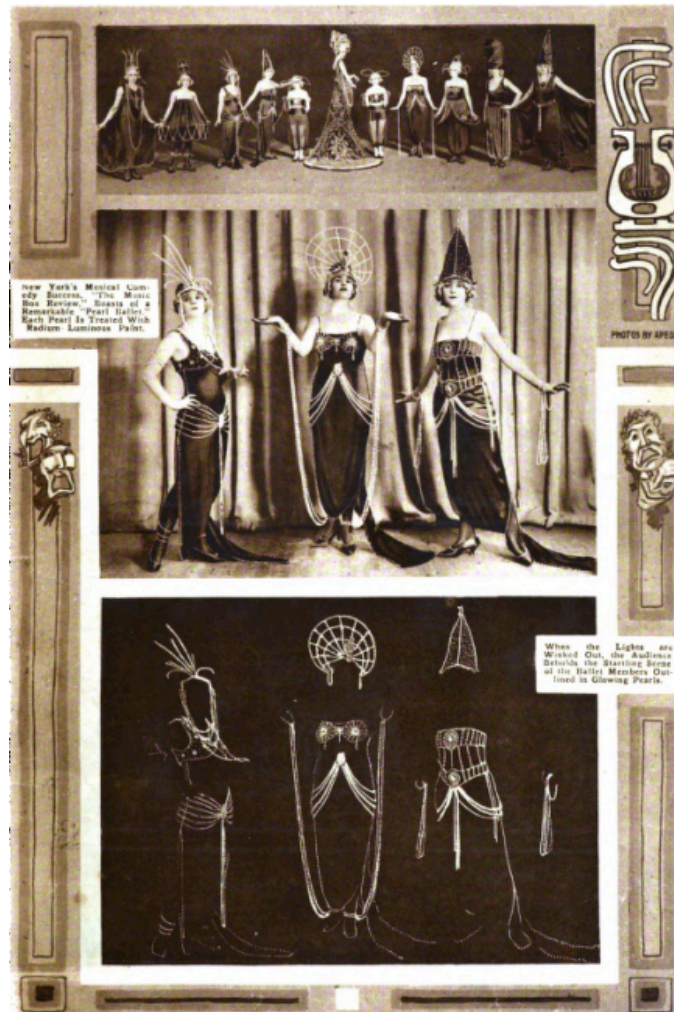


Fig. 2.1-9 Pearl scene from *Music Box Revue*, New York (1921). Phosphorescent jewellery and scenery designed by de Lipsky.

In this section, we have explored the significant role of light in jewellery making, wearing and viewing and how it facilitated the aesthetics and development of techniques in traditional jewellery making. We also examined how the long tradition of manipulating light to achieve maximum brilliance and symbolic value in precious jewellery influenced the development and application of alternative materials. The changes facilitated by technological advancement meant that new materials were being used, such as the cut-steel adornments of the 18th century and battery-powered imitation glittering gemstones of the 19th century.

This relationship between jewellery and light evolved in tandem with technological advancements; the evolution of artificial light significantly influenced the interplay

between jewellery and light. This interaction, whether demonstrated in the scintillating dance of candlelight on a diamond's facets or the active light emission of electronically illuminated pieces, reflects the deeply entwined relationship between technological developments and jewellers' craftsmanship. It also indicates how jewellers adapted their craft to technological developments, harnessing the properties of light in different ways to enhance the aesthetic appeal of their creations and enrich the visual experience for both the wearer and the viewer.

The theatrical and performative characteristics of light-emitting jewellery were subsequently incorporated into theatre performances, greatly enriching both the on-stage effect and the audience's sensory experience. We reviewed Trouvé's battery-powered jewellery and Lipsky's phosphorescent jewellery, both of which could be viewed as prominent developments in jewellery and theatrical costume design during the late 19th and early 20th centuries. Although Trouvé's light-emitting jewellery was innovative and pioneering at the time, it remained primarily decorative and underutilised in terms of its potential to be considered an independent embodiment of jewellery design. Achieving similar theatrical effects, Lipsky's work presented a more flexible approach to design and structure through the skilful manipulation of phosphorescent materials and light, resulting in an evolved interpretation of light-emitting jewellery through performance art.

In the following section, we continue to explore the evolving dialogue between light, performance and jewellery. Our investigation focuses on examining the performative approaches that contemporary jewellers have adopted in their work.

2.2 Light and performance in contemporary jewellery

In this section, we explore the application of light in relation to the body within the intersecting domain of contemporary jewellery and performance art. Specifically, we examine the dynamic interplay between the body, jewellery, light and the surrounding space by drawing on representative works created by jewellery artists. Studying the performative methods that these artists employed in their works and how they responded to the themes of jewellery, light and the body can enable an in-

depth understanding of the transformative potential light has to enhance the performative, interactive and sensory dimensions of wearing and viewing jewellery. We also incorporate an analysis of artificial light and the application of light-emitting smart materials explored by contemporary jewellers. Before investigating these jewellers' creative artworks, however, it is essential to gain a preliminary understanding of the interdisciplinary characteristics inherent in contemporary jewellery.

2.2.1 Understanding contemporary jewellery and its interdisciplinary nature

Contemporary jewellery has thrived over the past few decades and is inseparably informed by the development of fine arts (Den Besten, 2011). In comparison to traditional jewellery, which is often associated with social status and wealth, contemporary jewellery is an expanding field that presents unlimited potential in terms of its materials, dimensions, artistic expressions, themes and methods of display (Broadhead, 2005). Such jewellery can be seen as an artistic medium for makers to convey their "artistic thought, material concerns, attitudes to society, beliefs, fashion trends, cultural viewpoints, customs, and rituals" (Cheung, 2006: 12). Skinner (2013: 33) observed that one of the most notable features of contemporary jewellery is the "self-reflexive or self-aware practice" that critically reflects on the jewellery's existence and the conditions in which it is created. This quality allows contemporary jewellers to express themselves in their work through a wide range of themes and concepts.

According to Den Besten (2011: 33), the artistic practices of the 1960s and 1970s shared several attributes, namely a propensity for "immaterialisation" and "conceptualisation" and a desire to challenge conventional media and explore new forms. In the 1960s, a group of avant-garde jewellery artists in Europe and the United States began exploring the use of non-precious materials. Their work demonstrated a significant interest in the concept of "objects to wear" or "body sculpture" that challenged the traditional perceptions of jewellery and pushed the boundaries of the discipline. The term "new jewellery" was used to refer to the innovative and exciting artworks created by jewellers who emerged between the 1960s and 1980s (Dormer and Turner, 1994). These works embodied "a loose,

international and vital tendency that breathed new life into jewellery” (Den Besten, 2011: 7). The unrestricted use of a variety of materials in the early 1980s marked a peak in the creative concept of the wearable object (Derrez, 2007). During this era, jewellery artists emphasised the connection between the body and clothing in their work, leading some to explore “performance-based work and photographic jewelry events, where control over aspects of wearing jewelry are fixed in a single image” (Turner, 1996: 32).

The increasing fascination with exploring jewellery through performance was partially influenced by the developments in 20th-century performance theatre, seen most notably in the German artist Oskar Schlemmer’s *Triadic Ballet* (1926) (Figure 2.2-1). This performance was characterised by its emphasis on the movement and transformation of the human body in space (Heron and Ward, 1983). The geometric shapes and costumes that emphasised the abstract forms of the dancers’ bodies and the ballet’s choreography were based on “geometric lines, spirals or squares illustrated on the floor”, and the performer was entirely masked by sculptural forms (Birringer, 2013: 42). The dancers’ costumes played a key role in the construction of the spatial dynamics of the performance, which drew attention to the costume in terms of shaping or restricting the performer’s movements in specific ways (Birringer, 2013).

In the 1980s, the jeweller Noam Ben-Jacov actively collaborated with dancers to create performance-based body sculpture work. In Ben-Jacov’s work *Room* (1986–1987), the dancer performed with a flexible metal structure that could be expanded or collapsed to form configurations that harmoniously interacted with the human body (Figure 2.2-2). Reflecting on his collaborative experience with the dancers, Ben-Jacov stated, “I am somehow the viewer and the participant at the same time, on one hand the centre of the unit, however, on the other hand, also the viewer, watching the “things” happening around” (Ben-Jacov, n.d.). This comment indicates that the artist plays dynamic and multiple roles within performance-based work and that these roles may evolve in response to the unfolding developments that occur within a dancer’s performance. In Section 2.3, we explore the collaborative work

between jewellers and dancers that occurs during the creation of large-scale wearable and performative artworks that involve audience participation.



Fig. 2.2-1 Wire costume from *Triadic Ballet* (1926) by Oskar Schlemmer. Photo: Karl Grill. Image courtesy of the J. Paul Getty Museum.



Fig. 2.2-2 Ben-Jacov (1986–1987) *Room*. Body sculpture. 431.8 × 889 × 635 cm.
Dancer: Pedro Ramos. Image courtesy of the artist. ©Noam Ben-Jacov.

2.2.2 Artificial light in contemporary jewellery

In this section, we discuss the jewellery artists who worked with artificial light as a design element in the creation of performance-based body adornments. Given the limited investigation in the literature into light-reactive materials as jewellery or body adornments that intersect with performance art, we focus on artificial light in relation to body and space. By doing so, we highlight the performative approaches employed in these artworks, thus enhancing our understanding of the interactive relationship between light, jewellery, the body and space. This lays the foundation for the integration of approaches to performance art with the studio practice undertaken during this research.

Representative artworks that explore light as a form of body adornment include Atsuko Tanaka's *Electric Dress* (1965), Susanna Heron's *Light Projection* (1979) and Monica Brugger's *Jeuje* (1999–2000). These artists explored the use of light in relation to the body and space through performance-based installations and a light-projected approach. These light-jewellery pieces were well documented by photography that was informed by fine art and that served as a new method through which jewellery artists could conduct artistic research and practice (Den Besten, 2011). Working with light challenged the traditional notions of jewellery and its boundaries, facilitating collaboration with other disciplines such as photography and performance-based installations.

Electric Dress (Figure 2.2-3), which was created by Tanaka as a performance-based or wearable installation for the 2nd Gutai Art Exhibition in Tokyo, was a response to the rapid development of the technology permeating people's daily lives in Japan in the 1950s (Lee et al., 2005). Tanaka wore and performed the dress at various different exhibitions. It comprised approximately 200 painted light bulbs that imitated a traditional Japanese kimono to create a flashing performance of blinking lights that was intended to represent pulsing systems within the human body (Schimmel et al., 1998).

Electric Dress can be viewed as a work that blurs disciplinary boundaries by merging elements of wearable sculpture, installation, performance and interactivity. When

Electric Dress is worn as a garment on the body, it has theatrical and performative qualities. However, due to the presence of the large number of electric wires embracing the dress, interactions between the dress and the body appear to be limited, and movement within the space of the dress is restricted.



Fig. 2.2-3 Tanaka (1965) *Electric Dress*. Reconstituted in 1986. Synthetic paint on incandescent lightbulbs, electric cords and control. 165 × 80 × 80 cm.

Image courtesy of Takamatsu Art Museum. ©Atsuko Tanaka.

In the late 1970s, British contemporary jewellery designer Susanna Heron began using photography to explore the relationship between light projections and body movement (Figure 2.2-4). Collaborating with the photographer David Ward, she designed a series of stencils and projected them onto her body, resulting in the fragmentation and abstraction of the body through light shapes. The act of working with the body to explore the relationship between light jewellery, the body and space showcased the performative and theatrical qualities in Heron's work. Monica Brugger further developed the idea of light-projected jewellery, working it into light installations and introducing the element of audience participation. Her work *Jeuje* (Figure 2.2-5) projects an image of a daisy necklace onto the body; it then engages

with audience participants, who are required to position themselves within the light installation. In this case, the wearer can engage with the artwork on a personal level and thereby become an integral part of its visual composition. Both Heron and Brugger's works highlight the performative role of the body through its participation in their artwork.

Heron's approach of working with the body to explore its relationship with light is closely related to the researcher's studio practice, in which they explore and create light-reactive wearable objects through direct physical bodily engagement with the materials. However, light-projected jewellery only creates a visual interaction with the body. The body, meanwhile, primarily serves as a location for the projection of light jewellery; the pre-designed patterns may only fit specific parts of the body or certain postures. The active interaction of the body with the jewellery and its potential to shape the surrounding space has not been explored by the artist.



Fig. 2.2-4 Heron (1979) *Light Projection*. Photographic bromide print. Photo: Susanna Heron and David Ward. Image courtesy of the artist. ©Susanna Heron.



Fig. 2.2-5 Brugger (1999–2000) *Jeuje*. Installation slide, projector and mirror.
©Monica Brugger. Source: Den Besten (2011:111).

Japanese artist Erina Kashihara has been creating performance-based body adornments since 1985. Her work *Glorious Dragon* (2006) explores the relationship between artificial light and body movement by incorporating integrated LED motion sensors (Figure 2.2-6). The movements of the body are captured by the light, leaving trails and traces that dynamically illuminate the surrounding space. Kashihara's work can be viewed as further developing the concept of Tanaka's *Electric Dress* (1965) through its use of a combination of advanced lighting technologies, leading to a significant improvement in the physical interaction between the body, the light-emitting jewellery and space. The mobile LED motion sensors in Kashihara's work offer significant potential for dance choreography, as they can detect the wearer's movements and respond to them through real-time lighting changes. In Kashihara's work, the performative role of the body, which shapes both the artwork and the surrounding space, parallels the researcher's studio practice, in which light-reactive materials are activated by bodily movements.



Fig. 2.2-6 Kashihara (2006) *Glorious Dragon*. Silver wire and LED lights.
Photo: Michael Taylor. Image courtesy of the artist. ©Erina Kashihara.

Oberlack's (2011) research explored wearable light as a form of body adornment that exploits advancements in miniature light sources to create innovative forms of artistic expression. Oberlack collaborated with dancers to choreograph light around the body and investigate how wearable light interacts with the body and its environment. In a series of works titled *Sculpting the Body* (2004–2007), Oberlack explored how wearable light shapes and visualises the body. Her *Body Light Wrap* project (Figure 2.2-7) was designed to be attached to a part of the body that would be illuminated by projected light. Presented in a dark environment, the work creates a contrasting shadow that frames the structure of the body (Oberlack, 2011). Illuminating the body with light makes the body a light-emitting site that engages the wearer and viewer to explore the intimate space between light and the body. Oberlack's *Dynamic Body Contour* (Figure 2.2-8) engages light and body movement to explore how light shapes the figure of the body. An S-shaped light is captured by

long-exposure photography, while light tracing encapsulates the movements of the dynamic body.

Compared to the previously discussed examples of wearable light and its performative qualities, through which the role of the body is perceived as a passive light carrier or a site of light projection, in Oberlack's (2011) work, the body takes on an active role. It interacts with and shapes the light-emitting object through dynamic movement (Figure 2.2-8). The performative methods employed by Oberlack, such as collaborating with dancers to choreograph light-emitting body adornments and exploring the interplay between light, the body and space, are similar to the researcher's studio practice.

However, Oberlack's research does not reflect on interdisciplinary collaborations nor on how her work has been impacted by collaborating with artists from the field of performance art. Rather, her emerging open-ended and dynamic art forms can be perceived as live light performances or live light drawings created by the body. This aligns with the researcher's studio practice, in which light-reactive jewellery is created in motion, blurring the boundary between making and performing. Light-emitting artworks presented as forms of body adornment (e.g. Figure 2.2-8) may rely heavily on long-exposure photography to document or capture their intricate motions. In contrast, light-reactive wearable objects enable viewers to instantaneously perceive, through the naked eye, how the body shapes materials and interacts with the surrounding space.



Fig. 2.2-7 Oberlack (2004) *Sculpting the Body*. Image courtesy of the artist.
©Ulrike Doris Oberlack. Source: Oberlack (2011: 126).

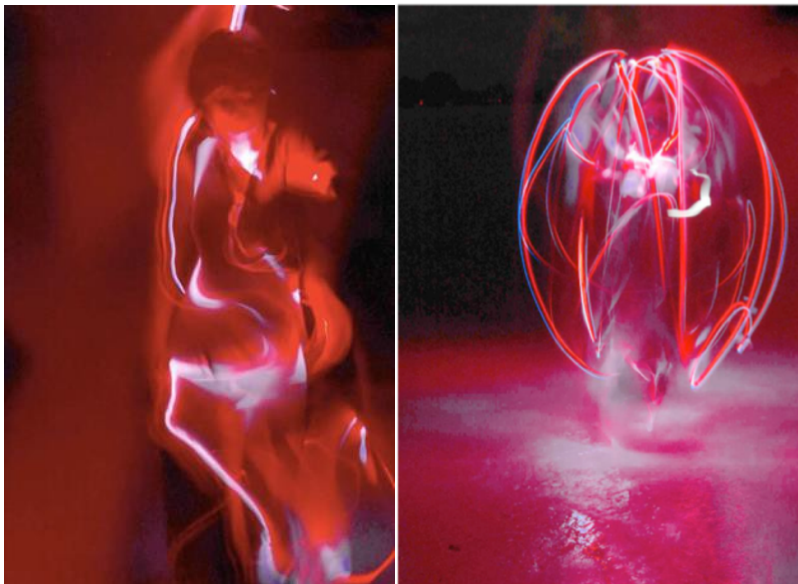


Fig. 2.2-8 Oberlack (2007) *Sculpting the Body*. Dynamic body contour (left) and kinetic light sculpture and light cage (right). Image courtesy of the artist.
©Ulrike Doris Oberlack. Source: Oberlack (2011:127–128).

2.2.3 Light-emitting smart materials

In contrast to the practice in disciplines such as fashion, theatre performance and art installations (which have seen extensive exploration of light-emitting smart materials), only a small group of contemporary jewellery artists have engaged in the application of light-emitting smart materials in their creative practices. In this section, we initially examine the representative works of jewellery artists that utilise light-emitting smart materials. We then explore the applications of light-reactive materials in theatrical performances, which is the area most relevant to the researcher's practice. This exploration facilitates an initial understanding of the properties and potential of light-reactive materials to navigate the intersection of jewellery and performance art. Studying selected artworks in these fields, both of which are closely related to the researcher's practice, contextualises the current study's material exploration within a broader investigation of the use of alternative materials in contemporary jewellery and draws inspiration from their innovative use in performance art.

We are familiar with certain luminescent phenomena in the natural world. For example, glow-worms, fireflies and luminescent organisms in seawater or on decaying fish and wood are long-familiar sights that have captured people's curiosity (Wisniak, 2005). Some minerals, such as fluorite, scapolite and calcite, are known for exhibiting strong fluorescence under UV light. Although UV light is invisible to the human eye, it can interact with certain types of minerals that then emit light at varying wavelengths visible to the human eye. This phenomenon is a result of the materials' inherent fluorescent properties and the fluorescence that occurs when the materials absorb light at one wavelength and re-emit it at a longer wavelength. According to Hahn (1877), the earliest observation of the phosphorescence of diamonds was recorded by the alchemist Albertus Magnus in the 13th century. Magnus claimed to have seen a diamond that appeared to glow in warm water. The term "phosphorescence" became widely used after the discovery of phosphorus by Hennig Brandt in 1674.

A well-known example of a light-emitting substance is radium, a naturally occurring radioactive element discovered in 1898 that emits glowing light in the dark (Mazeron

and Gerbault, 1998). Radium watch dials were popular in the early 20th century (Figure 2.2-9), particularly during the 1910s and 1920s (Gillmore et al., 2012). Radium's light-emitting property made it an attractive material for use in luminous watch dials and hands. However, due to the health risks associated with radium exposure, its use in watch dials and other products was eventually banned in the 1960s (Clark, 1997).

The use of light-emitting radium in watches to provide visibility in darkness serves as an early example of the incorporation of alternative materials into jewellery, potentially expanding the definition of contemporary jewellery. The upcoming sections present more recent examples of light-emitting smart materials employed by contemporary jewellery artists.



Fig. 2.2-9 A 1950s radium clock. Exposure to UV light increases its luminescence. Source: Wikipedia (2010). Reproduced under Creative Commons Licence CC BY-SA

3.0

Lifu Zhou's recent work *Generative Design + Craft* (2022) (Figure 2.2-10) explores the transformative potential of generative design and craftsmanship by using generative adversarial networks and parametric design for inspiration, together with machine learning techniques involving images of minerals and corals. 3D printing is then used to transform the digital images into physical artefacts. The designs created by generative adversarial networks (a recent innovation in machine learning that

generates new data instances based on training data), combined with 3D-printing techniques and the unexpected fluorescent colours of the tapioca-based material, are essential to the character of the jewellery piece, particularly when viewed under LED blue light. Zhou's work is relevant to the researcher's practice, which employs light to transform the appearance of jewellery. However, Zhou's work does not explore the sensory experience of fluorescent jewellery nor how it can potentially impact the way the jewellery is worn and perceived.



Fig. 2.2-10 Zhou (2022) *Generative Design + Craft*. Brooch, 3D-printed, tapioca-based material, 8 x 20 cm. Photo: Petra Jaschke.

Image courtesy of the artist. ©Lifu Zhou.

Katharina Vones' 2017 practice-led research focused on using smart materials and microelectronics to create digital jewellery that responds dynamically to changes in the wearer's body and the environment. Her work combines digital fabrication technologies with traditional craft methodologies to create unique jewellery pieces (Figure 2.2-11) that come to life with pulsating lights, breathing patterns and sensors. These features establish an intimate and physical connection between the jewellery and its wearer. Vones' practice places a strong emphasis on creating enchantment through playful interactions with an object. To achieve this, she combined chromic smart materials with tactile silicone, resulting in multifaceted colour transitions that react to both the body and the environment. Vones' smart jewellery and the researcher's practice of exploring light-reactive jewellery both emphasise sensory interactions and how the jewellery responds to physical interactions and environmental stimuli.

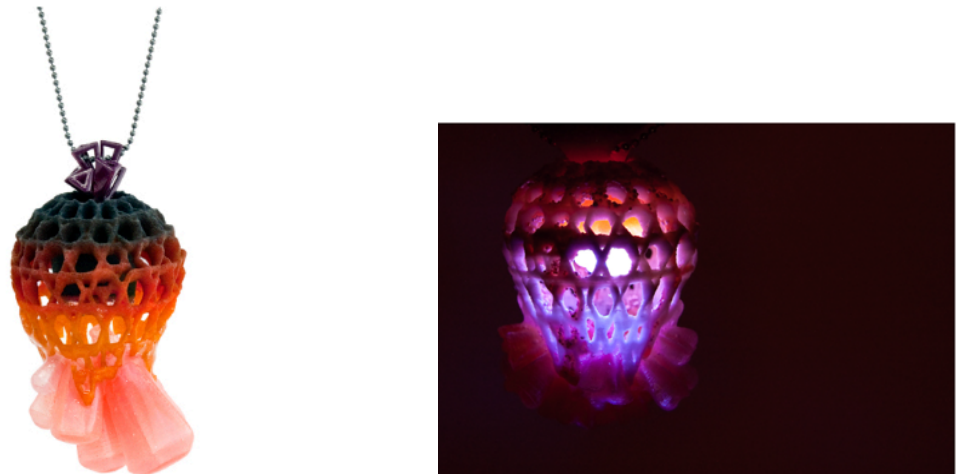


Fig. 2.2-11 Necklace designed by Katharina Vones (n.d.). Images from the *Make Your Own Story* interview series: “Cutting-edge jewellery artist Katharina Vones” (Craft Scotland, 2017). Material description unavailable. ©Katharina Vones.

In this section, we explore a specific genre of theatre performance that harnesses black light and light-reactive materials, known as black-light theatre (Figure 2.2-12). Doing so can provide a better understanding of the mechanisms of this performance, which is crucial if we are to learn from it and appreciate how it engages an audience by evoking a sense of participation. Black-light theatre uses LED blue light and fluorescent materials to create a surreal and immersive experience. Objects and performers appear to float and disappear seamlessly, drawing the audience’s attention to the magical atmosphere that arises as a result. The contrast between glowing materials and darkness heightens the audience’s perception and creates a focal point that gives rise to an engaging and interactive experience.

Light-reactive materials can be incorporated into garments in various ways – such as through embroidery, beading or fabric manipulation – to create a dynamic interplay of light, movement and texture during the performance. Black-light theatre is relevant to the researcher’s artistic practice and serves as a source of inspiration for the exploration of jewellery objects’ interactions with the body and space under black light. Techniques such as working with dancers in a controlled lighting environment are fundamental to the development of collaborative work in the researcher’s studio practice.



Fig. 2.2-12 Black Light Theatre performance (n.d.). Fluorescent materials.
Image courtesy of WOW Black Light Theatre, Prague.

2.3 Beyond jewellery

In this section, we explore how contemporary jewellery artists push the boundaries of traditional display methods by adopting a hybrid performative approach (including elements of installation and performance) that promotes the active engagement of the audience with their work. Such works include using site-specific performances and installations, happenings and explorative work in collaboration with dancers. This approach allows artists to create immersive and dynamic works that engage with the surrounding space, explore the spatial dimensions of wearable objects and enable the audience to develop a multisensory experience. Using site-specific art, jewellery artists can tailor their work to the unique qualities of a location, including its history, architecture and natural surroundings, and thereby enhance their work's impact and meaning. The audience becomes an active participant in the performance artwork, which blurs the boundaries between performer and viewer and encourages a more immersive and interactive experience.

2.3.1 Installation art

In the 1980s, jewellery artists expanded the scope of traditional jewellery design by incorporating fashion, textiles and performance-based practices in their creations (Jessop, 2013). This development acknowledged the relationship between jewellery and the body and emphasised the importance of capturing, through photography, the transient quality of bodily movements and the interaction of jewellery with the body. Around this time, jewellery practitioners also began to engage with immersive installations and involve real people and performances in presentations of their work, replacing inanimate mannequins and traditional showcase approaches (Bernabei, 2017). Astfalck (2005: 21) highlighted the importance of presenting art objects through strategic approaches:

Objects framed and presented in installation or photographic/video contexts enable new possibilities of visual perception and subsequently interpretation and understanding. The often rather more “introverted” objects acquire heightened theatricality and performativity; a powerful strategy giving more artistic control over the interpretative reading of the work. Hidden layers of meaning can be played with, as the objects assume new identities while dialogically interacting with their environment.

According to Den Besten (2011), the concept of installation in relation to jewellery often refers to exhibitions curated as contextualised environments. The term originated within the fine arts, where it takes on a broader meaning and encompasses a variety of hybrid art forms related to public spaces, including environments and site-specific works and happenings (Den Besten, 2011). Ruudt Peters is a contemporary jewellery artist known for his unconventional approach to displaying his pieces. One of his notable works is an installation titled *Picasso* (1992) that features suspended pendants, each enclosed in a semi-transparent violet tent, and lighting that guides the viewer’s attention (Figure 2.3-1). This installation creates a solemn and ceremonial atmosphere, inviting the audience to open the gauze tents and engage with the work by touching each object on display. Peters’ jewellery installations can be described as theatrical and immersive, and the subtle interplay

between the lighting and the transparent gauze tents inspires the audience's curiosity and leads them to explore the work.



Fig. 2.3-1 Peters (1992) *Picasso*. Cotton, steel and jewellery. Galerie Marzee, Nijmegen. ©Ruudt Peters. Source: Den Besten (2011: 85).

Using light to direct the audience's attention or gaze is common in many visual art forms. The human eye is naturally drawn to the viewing field's brightest areas (Liljefors and Ejhed, 1990), and high-contrast environments produce visual direction within a space (Michel, 1996). Merleau-Ponty (1962) noted that lighting directs the gaze and causes the viewer to see an object, thereby suggesting that light plays a crucial role in directing the viewer's attention. The application of brightness and contrast is a well-known theatrical technique for capturing and maintaining the focus of an audience; a surface that sparkles or a brightly lit object that stands out can also achieve this aim (Flynn and Mills, 1962).

Installation art is a relatively young genre that emerged and gained recognition in the 1960s and 1970s. According to Petersen (2015), sculptures are often shaped as isolated objects, while installations are 3D formations designed as spaces or spatial scenographies that communicate meaning and sensory experiences through imagery. As a large-scale artwork, an installation invites the viewer to enter and participate. Such artworks are often described as "theatrical", "immersive" and

“experiential” (Bishop, 2005: 6). In this regard, the installation artwork *The Weather Project* (2003) by Olafur Eliasson is a striking illustration of installation art’s potential to create sense-provoking and aesthetic experiences (Figure 2.3-2).

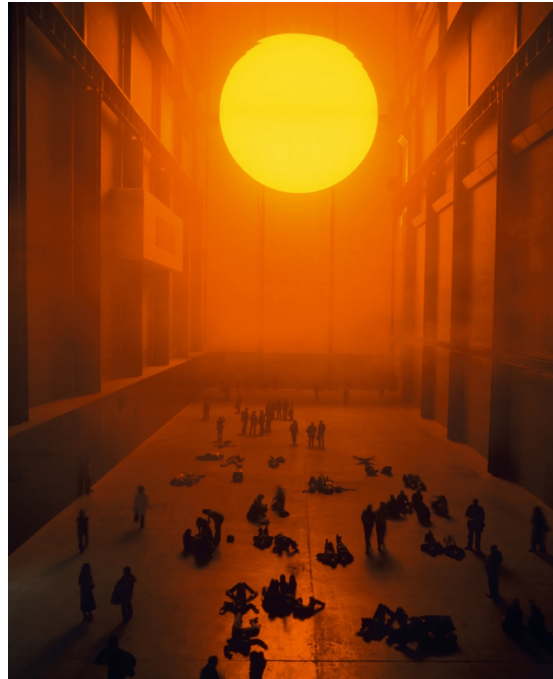


Fig. 2.3-2 Eliasson (2003) *The Weather Project*. Tate Modern, London, UK. Photo: Tate Photography (Andrew Dunkley and Marcus Leith). Image courtesy of the artist. ©Olafur Eliasson.

“Installation” is a broad term that can be used for all types of artworks, more or less, that include several separate components brought together to create a 3D environment that completely or partially surrounds the viewer (Petersen, 2015). According to Petersen (2015: 9), “Installations are often accused of being “theatrical”, as the installation work has taken over various techniques from performance theatre, while performance theatre, on the other hand, has taken over techniques from visual arts”. Given the breadth of creative expression in installation art, Petersen (2015: 41) claimed that there are three main parameters of installation practice: “Installation activates space and context; installations stretch the work in time, whereby its character becomes that of situation and process; installations have a phenomenological focus on the viewer’s bodily and subjective experience, and on the temporal aspects of reception”.

James Turrell's light art explores light as the medium of perception and his work includes the three main parameters of installation practice denoted above. Turrell's work exploits light projection to create 3D installations that are highly immersive, transient and unstable and that play with the shifting qualities of light, including opaqueness, transparency, solidness, immateriality and the tangible and subliminal (Abulafia, 2015). Turrell's artistic practice is characterised by the use of two distinct chambers within his light installations: the observation space, which is intended to facilitate the viewer's experience, and the sensing space, which the viewer is prompted to engage with by directing their gaze towards it. Hence, the viewer's perception shifts in response to their movements and distance from the artwork within the art space (Figure 2.3-3).

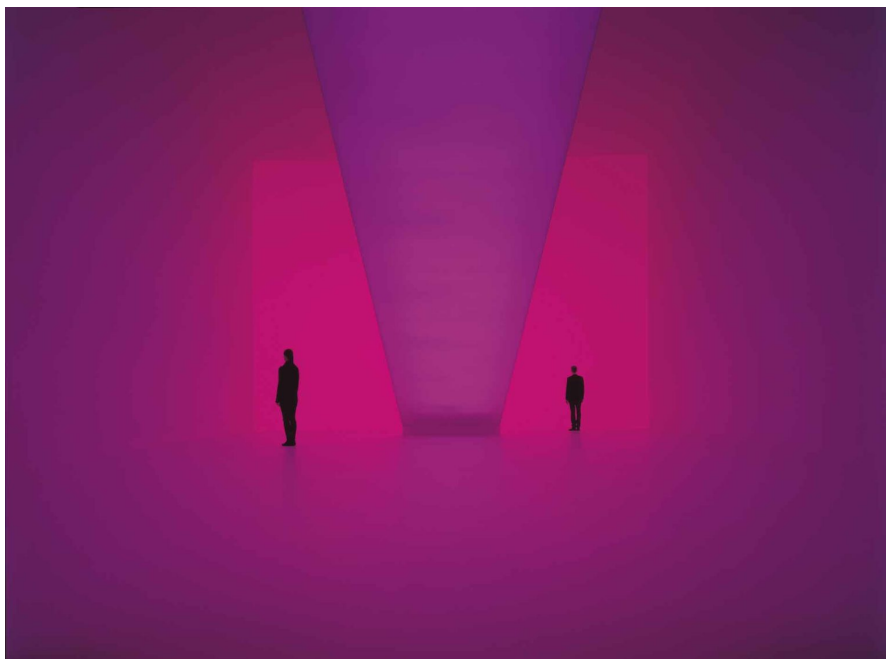


Fig. 2.3-3 Turrell (2009–2010) *The Wolfsburg Project*. Installation, Kunstmuseum Wolfsburg, Germany. Photo: Florian Holzherr. Image courtesy of the artist.

©James Turrell.

2.3.1 Jewellery performances

Jewellery artists, through a diverse range of strategies, actively and deliberately seek to engage a wider audience with their work (Jessop, 2013). Several contemporary jewellery artists, including Caroline Broadhead, Noam Ben-Jacov, Marjorie Schick and Yuka Oyama, have collaborated with dancers to explore large-scale works in a performative and dynamic manner and to open up the conversation between the body, jewellery and space. Den Besten (2011) highlighted how a significant relationship needs to be created between jewellery and its wearer and the necessity of presenting jewellery beyond the confines of traditional gallery or museum exhibitions. She noted that many jewellers often feel dissatisfied with conventional displays of jewellery in shops, galleries and museums, as this creates a disconnected relationship between the piece and the body by turning the jewellery into a commercial item. In contrast to static showcases, performative approaches enable jewellery artists to explore the dynamic and spatial dimensions of their work and its interaction with the surrounding environment. Through these approaches, artists can involve the audience in the creation of an interactive experience that encourages reflection and engagement with the artwork.

To better understand the selected artists' performance work, it is necessary to develop an initial understanding of the nature of performance. "Performance is conceived as communicative interaction, the social structure of the interaction developing from the interaction itself" (Bauman, 1975: 304). This interactive dynamic is especially prominent in the work of Max Herrmann, a pioneering figure in performance theory who provided rich insights into the intricate relationship between actors and spectators. Herrmann (1981: 19, as cited in Fischer-Lichte, 2008: 32) argued that:

[The] original meaning of theatre refers to its conception as social play – played by all for all. A game in which everyone is a player – actors and spectators alike ... The spectators are involved as co-players. In this sense the audience is the creator of the theatre. So many different

participants constitute the theatrical event that its social nature cannot be lost. Theatre always produces a social community.

This notion of Herrmann's foregrounds performance as a dialogue between the performer and the audience – an exchange in the dynamics of presence and engagement. Building on this perspective, Fischer-Lichte (2008) advanced the discussion by focusing on how important bodily co-presence is to a performance. She emphasised the immediacy and co-presence of actors and spectators and proposed that the aesthetic experience in a performance is a product of the exchange between the performers and the audience, wherein both parties are continually in a state of mutual interaction and transformation. She also employed the notion of an “autopoietic feedback loop”, a self-referential autopoietic system that facilitates an essentially open and unpredictable process. This can be seen as the key principle in theatrical work:

In short, whatever the actors do elicits a response from the spectators, which impacts on the entire performance. In this sense, performances are generated and determined by a self-referential and ever-changing feedback loop. Hence, performance remains unpredictable and spontaneous to a certain degree. (Fischer-Lichte, 2008: 38)

The Waiting Game (1997), created by Caroline Broadhead, was a site-specific performance work held in Upnor Castle, Rochester, UK that combined dance, installation and audience participation to explore themes of territorial conflict and invasion (Figure 2.3-4). When entering the performance space, the audience had to tread upon the dancer's dress, thereby facilitating a specific movement that caused the performer to pull away. The audience thereby played an active role as both anchors and invaders and thus became an integral part of the performance. This participatory element created a dynamic relationship between the dancer, the audience and the surrounding space. By encouraging the audience to actively engage with the dancer, the material and the space, their experiences and responses served as a crucial component of the performance's aesthetic (Breel, 2015).



Fig. 2.3-4 Broadhead (1997) *The Waiting Game*, in collaboration with Angela Woodhouse. Photo: Hugo Glendinning. Image courtesy of the artist.

©Caroline Broadhead.

Marjorie Schick's work is known for her large and brilliantly coloured mixed-medium body sculptures. She believed that jewellery is an art form and that the body is integral to completing a sculptural object. Schick aimed to alter the understanding of sculpture by bringing the human body into direct tactile and kinaesthetic contact with form. Schick presented one of her works at *Choreographing the Object: An Evening of Visual Art and Dance* (1977). In this presentation, her geometrical armlets and body sculptures were transformed by a dancer into musical instruments (Figure 2.3-5). Following the performance, each dancer appeared in the gallery wearing a specific piece for viewing by the audience, thus transforming the sculpture into a happening event (Rosolowski, 2007). Schick's experiential approach, which transformed wearable objects into dynamic forms through dance, blurred the boundaries between jewellery and performance art. In this context, the dancer's body contributed to the ongoing development and transformation of her artwork.



Fig. 2.3-5 Schick (1974) *Tubes*. Body sculpture (left). *Choreographing the Object: An Evening of Visual Art and Dance* (1977), Pittsburgh State University, Kansas (right).

©Marjorie Schick. Source: Rosolowski et al. (2001: 11).

Yuka Oyama uses performance as a key element in her artistic practice. She presents her work through immersive, interactive and often participatory performances that invite viewers to engage with the artwork on a physical and emotional level. Her work includes jewellery, sculpture, photography, video creation, interventions in public spaces, explorations in choreography and live performances. In her work, life-sized objects (Figure 2.3-6) reflect everyday objects as “object–human hybrids” (Oyama, n.d.). According to Oyama (2017: 8–9),

Art jewellery is an artistic medium that consists of two intertwined components: an object and a person, with the intrinsic proximity and direct contact of jewellery with the human body being an essential quality. It is an artistic medium that can be touched, used, and worn. Wearable sculptures could therefore be considered as exaggerations of art jewellery. They are enlarged versions of jewellery that show more dramatic physical and visual impacts.

Oyama's sculptures are animated through performance, thereby activating her work and engaging her audience through physical and emotional reflection. Oyama explores the notion of intimacy by investigating the emotional connections that can be formed between people and domestic objects, bringing her sculptures closer to the wearer and creating works that are deeply personal and emotionally resonant (Oyama, 2017).



Fig. 2.3-6 Oyama (2014) *Cleaning Samurai*. Performance view. Photo: Diego Castellano Cano. Image courtesy of the artist. ©Yuka Oyama.

2.3.2 Audience participation

In the previous section, we examined the work of contemporary artists who focused on jewellery performances created in collaboration with dancers. Such pieces primarily engage the audience through a visual spectacle – for example, through their observance of a performance. In this section, we shift our focus to artists who emphasise physical interaction and encourage audience members to become active participants in the performance itself. This may involve engaging the audience in creating personal encounters with the art pieces, all while becoming an integral part

of the performance and potentially facilitating the expansion, enrichment and recreation of the artwork.

A small group of contemporary jewellers have adopted a more audience-participatory approach. For example, Yuka Oyama's project *Schmuck Quickies* (2002–2012) is a jewellery performance that she conducted at various exhibitions internationally (Figure 2.3-7). In the project, Oyama created an art space containing a hair salon set up with one mirror and one chair. The participants were asked what type of jewellery they would like; in response to their requests, the artist then began to create the jewellery with local recycled materials. Oyama involved the wearer's body in the jewellery design process by allowing the audience members to become active participants in the creation of each piece. The act of creating objects through audience participation fostered an interactive relationship between the jeweller and the wearer. Through Oyama's act of working directly with the wearer's body, the audience members became co-creators in the project, shifting their role from passive observers to active collaborators.



Fig. 2.3-7 Oyama (2002–2012) *Schmuck Quickies*. Recycled materials were collected at each performance site. Image courtesy of the artist. ©Yuka Oyama.

Zoe Robertson's large-scale body sculpture, wearable installation and performance event *Flockomania 4: The Cass Edition* (Figure 2.3-8) invited the audience to fully

experience and physically engage with the artwork by touching, wearing and interacting with it. The exploration of themes such as bodily extensions, movement and dual wearability created a multisensory experience that blurred the boundaries between objects, the body and space (Robertson, n.d.). The hybrid nature of the performative space, which incorporated installations, dance performances and audience participation, provided significant potential for exploring the interdisciplinary characteristics of jewellery.

By encouraging physical involvement and active participation, the audience became performers themselves, with some larger pieces requiring the audience to wear and perform the artwork collectively. As the audience members moved and interacted with the artwork, their actions contributed to the shaping and reshaping of the piece in real time. This dynamic and collaborative process led to a diverse range of interpretations and outcomes, as each audience member brought their unique perspective and experiences to the performance.



Fig. 2.3-8 Robertson (2017) *Flockomania 4: The Cass Edition*.

Photo: Christian Kipp. London Metropolitan University, UK.

Image courtesy of the artist. ©Zoe Robertson

Brazilian artist Lygia Pape's practice explored the relationship between the body and space through the creation of multisensory experiences. Although she was not a contemporary jewellery artist, Pape's performative approach, which she employed to

create shareable wearable objects for an audience, served as inspiration for the researcher's development of a performative approach in the pilot workshop (Section 4.3). Pape's performance work *Divisor (Divider)* (1968) aimed to blur the boundary between observer and participant through the creation of a collective work. The piece featured a flowing mass of white fabric with faces poking through as it moved through a street (Figure 2.3-9). The performance emphasised the importance of both the individual and the collective in determining the direction of the mass. The collaborative nature of the participatory performance made the work the shared responsibility of all the participants, creating a dynamic space for both collective creation and an exploration of the complex relationship between art, the body and social engagement.



Fig. 2.3-9 Pape (1968) *Divisor (Divider)*. Performance at Museu de Arte Moderna, Rio de Janeiro, 1990. Photo: Paula Pape. Image courtesy of The Metropolitan Museum of Art. ©Lygia Pape.

2.4 Conclusion

This literature review has emphasised the significance of the use of light in both traditional fine jewellery and contemporary jewellery. Light-reactive materials and

smart light-emitting materials in contemporary jewellery are relatively new and exciting areas of practice that remain underexplored, particularly in terms of their performative potential, which is based on the materials' properties. Additionally, the review has illustrated how jewellery can be presented through performance: how it enables audiences to engage with the work interactively and to create an experience that goes beyond the individual artwork itself.

The lack of extensive research into and exploration of light-reactive materials in contemporary jewellery, particularly in terms of their potential applications through the adoption of performance art approaches, represents a significant knowledge gap. Additional in-depth analyses and case studies of jewellery pieces that incorporate light-reactive materials are needed to further enhance the development of this field. This includes a need to examine the interactions between the body, light-reactive adornment, and the spatial dynamics facilitated by these materials when they are worn on the body.

3. Methodology

Due to the interdisciplinary scope of this research study, it does not sit easily within any established theoretical or methodological frameworks. Instead, knowledge emerged as the research progressed through an iterative process of “doing–reflecting–reading–articulating–doing” (Nelson, 2013: 32). Studio practice as research (PaR) frequently generates novel models, meanings, knowledge and social relations. As such, innovation often arises through the adoption of methods that cannot always be predetermined, rendering the outcomes of artistic research necessarily unpredictable (Barrett and Bolt, 2010). The adoption of a PbR approach was conducted systematically and rigorously; it enabled the researcher, an artist engaged in contemporary jewellery design, to directly integrate their experiences and expertise as a jewellery practitioner into the research process.

Assuming the dual role of practitioner-researcher facilitates the employment of systematic enquiry and critical reflection within the creative process. At the same time, it permits a sense of improvisation and playfulness in the practitioner-researcher’s studio practice, even in the most rigorous research contexts (Nelson, 2013). This chapter presents an in-depth exploration of the methodology, together with the rationale behind the chosen methods. The terms PbR and PaR are used interchangeably here when discussing the work of various scholars, as both terms are frequently employed to describe the process behind knowledge generation that stems from artistic concerns (Nelson, 2013).

3.1 Practice-based research methodology

This artistic research has adopted a PbR methodology, which regards practice as an essential method of investigation and the creative artefacts generated in the research process as critical evidence of the research outcome (Nelson, 2013).

Candy et al. (2021: 27) defined PbR as:

A principled approach to research by means of practice in which the research and the practice operate as interdependent and

complementary processes leading to new and original forms of knowledge. By “practice”, we mean taking purposeful actions within a specific context, typically in a creative or professional way: the making, modifying or designing of objects, events or processes.

This statement emphasises the critical role of artistic practice as an indispensable component of both the research process and its results (Borgdorff, 2006). Candy (2006) indicated that claims of originality and contributions to knowledge are demonstrated through creative outcomes in the form of artefacts, which may include images, music, designs, models, digital media or other outcomes such as performances and exhibitions. As such, research processes and outcomes need to be documented and disseminated appropriately among academic and broader communities (Borgdorff, 2006).

The foundation of artistic research lies in an iterative and reflective research process that encourages the practitioner-researcher to work from the “unknown to the known” (Sullivan, 2009: 48–49). As articulated by Sullivan (2009: 51), “when art practice is theorised as research, human understanding arises from a process of inquiry that involves creative action and critical reflection”. Through artistic research, artists intuitively adopt dual roles as both researchers and subjects, engaging in a reflective process that continuously adapts and refines their work in response to critical reflection and creative action (Sullivan, 2009).

Reflective practice is a process wherein theory and practice reciprocally inform and reinforce one another (Bolt, 2010; Nelson, 2013). Bolt (2010: 29) described this relationship as a “double articulation between theory and practice, whereby theory arises from a reflexive practice at the same time that practice is informed by theory”. In a similar vein, Nelson (2013: 5) classified PaR as “theory imbricated within practice”. In the following section, the interplay between theory and practice is discussed within the methodological framework of Nelson’s *Modes of Knowing: Multi-Mode Epistemological Model for PaR*.

3.1.1 Methodological framework

Building upon the rationale behind employing the PaR methodology, this section explains the selected theoretical framework underpinning the research approach. One framework for PbR, as described by Edmonds and Candy (2010), is that of a conceptual structure that influences practice, informs theory, and shapes validation or evaluation. Nelson's established PaR conceptual framework (Figure 3.1-1) has been employed to support the foundation of the researcher's artistic enquiry. This dynamic model shows how know-how combined with know-what in relation to know-that maximises the potential contributions to knowledge that academic research entails (Nelson, 2013).

Know-how, or doing-knowing, refers to the practical skills and abilities acquired by the practitioner-researcher through direct engagement with their artistic practice. This mode of knowledge encompasses the tacit, embodied and performative aspects of knowing and emphasises the importance of hands-on experience to informing artistic enquiry. In contrast, know-what refers to procedural knowledge and encompasses the critical reflection of PbR. This mode of knowledge requires the ability to critically evaluate and articulate the insights, discoveries and implications arising from the creative process. Finally, know-that knowledge corresponds to the traditional academic knowledge that is typically acquired through reading and engaging with scholarly literature. This mode of knowledge relates to the intellectual and theoretical foundations that inform and enrich a practitioner-researcher's work, providing essential context and depth to their artistic enquiry.

The fundamental elements of this model are interconnected through the two-way arrows featured along the axes of the mode, signifying a dialogic interplay between the model's foundational components. The dynamic nature of creative practices, whose focus is on the process of becoming, is here fundamental to the understanding of knowledge production (Nelson, 2013).

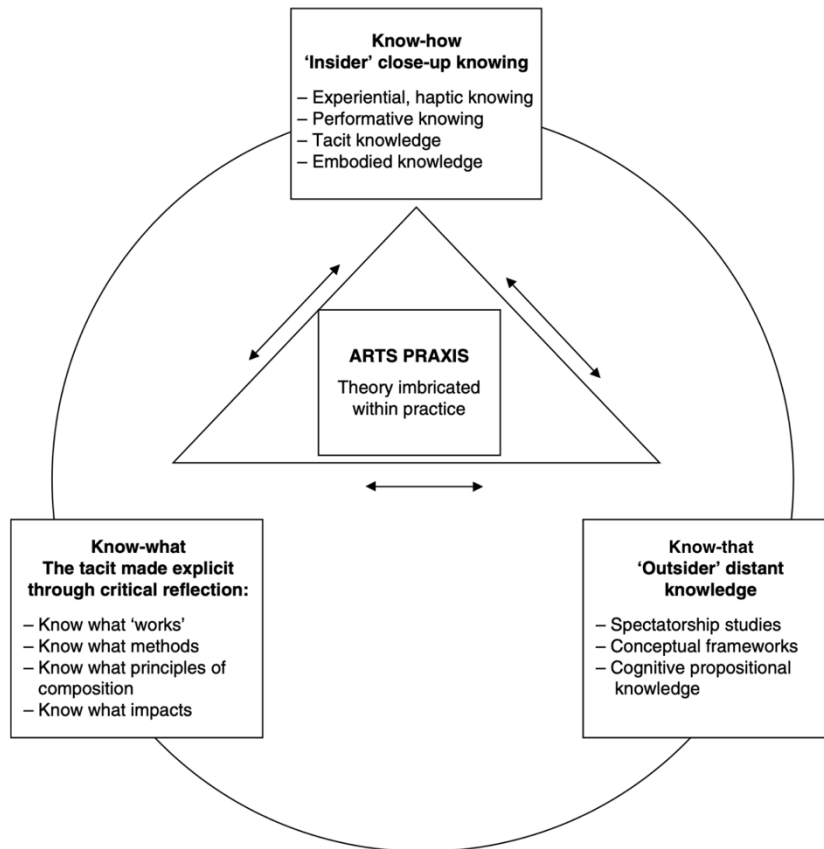


Fig. 3.1-1 Modes of knowing: A multi-mode epistemological model for PaR.

Source: Nelson (2013: 37).

Praxis (theory imbricated within practice) sits at the heart of this PaR model. Praxis refers to praxical knowledge, which implies that ideas and theory are ultimately the results of practice rather than vice versa (Bolt, 2010). According to Bolt, the philosopher Martin Heidegger's concept of praxical knowledge can provide a rationale for understanding the dynamic interplay between practice and theory in artistic research. Heidegger (1967) argued that human understanding primarily arises from practical engagement with the world and its materials, rather than through contemplative thought and theoretical reflection. The concept of praxical knowledge involves our ability to engage with the world around us and to manipulate objects and perform actions in the context of our everyday lives. Bolt built on Heidegger's idea of "handling" and expanded Paul Carter's concept of creative research as "material thinking" (Bolt, 2010).

Bolt (2010) argued that engaging with materials in artistic practice generates a distinct form of tacit knowledge. Creative arts research, she argued, emerges primarily through the bodily responses to and interaction with these materials. Bolt (2007: 29–30) further explained that:

The concept of material thinking offers us a way of considering the relations that take place within the very process or tissue of making. In this conception, the materials are not just passive objects to be used instrumentally by the artist, but rather, the materials and processes of production have their own intelligence that comes into play in interaction with the artist's creative intelligence.

In this way, therefore, a fundamental understanding of the multi-mode epistemological PaR model can be developed. Incorporating various knowledge-enquiry methods, this dynamic framework offers an effective approach that allows artistic research to continuously evolve and adjust.

Artistic research, an iterative and reflective process, inherently demands that its methodologies are emergent and consistently subject to modifications, as opposed to adhering to a fixed structure throughout the enquiry process (Barrett, 2010). The adoption of this framework in the current study enhanced the researcher's capacity to effectively address and capitalise on the emerging challenges and opportunities that appeared throughout the research process. The next section discusses how adopting the role of practitioner-researcher enabled the researcher to address the problems raised during the research process and how engagement in creative studio practice served to produce knowledge.

3.1.2 Position within the research

In this study, the researcher was positioned as a reflective practitioner (Schon, 1983), as “the creative process requires conscious reflective practice as well as the “intuitive” processes of creativity and artistry” (Candy, 2019: 49). This adaptive position allowed the researcher to navigate the complex, interdisciplinary and

multifaceted aspects of the research and to consciously reflect on their studio practice.

Schon's concept of reflective practice is well established in professional practice, with two types of reflection identified as critical for practitioners who wish to develop a deeper understanding of their work. According to Schon (1983), the act of reflective practice transforms the practitioner into a researcher capable of constructing new theories from unique cases and thereby revealing the true nature of practitioner knowledge.

A practitioner's reflection can serve as a corrective to overlearning. Through reflection, he can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice and make new sense of the situations of uncertainty or uniqueness which he may allow himself to experience. (Schon, 1983: 61)

Schon's concept of reflective practice involves two types of reflection: reflection in action and reflection on action. Reflection in action involves critically assessing and adjusting one's actions, thoughts and decisions while engaged in a task or activity. This allows practitioners to adapt their approach in real time and learn from their experiences. Reflection on action involves examining and analysing one's actions, decisions and experiences after completing a task or activity. This retrospective reflection enables practitioners to identify areas for improvement and develop a deeper understanding of their practice. In the field of anthropology, Ingold perceived making as an activity that intrinsically required mindfulness. In this conception, the formation of objects emerges from the synchronisation of sensory awareness and material flux within a life process (Ingold, 2013). Ingold believed the act of making to be a process of growth for the maker, whereby learning occurs through direct and hands-on interactions with tangible materials.

As a jewellery artist engaged in PaR, the researcher embraced the role of a reflective practitioner who recognises that the research process is an ongoing learning process. The research approach involved drawing on expertise in jewellery

making and design to engage with various materials and skills. At the same time, the researcher adopted a reflective practitioner perspective, which allowed them to critically evaluate the creative process and its outcomes. To explore the intersections between jewellery and performance art, the researcher engaged in a process of co-creation and co-reflection with performance artists, exploring the application of performance methodologies to the creation of innovative and dynamic wearable objects. This is discussed further in the next section, which addresses methodological performance approaches.

3.1.3 Interdisciplinary nature of this research

The inherently explorative approach of contemporary jewellery has facilitated its intersection with other disciplines (Broadhead, 2005). Characterised as a self-reflexive or self-aware practice, this art form allows practitioners to transcend traditional boundaries and engage with diverse artistic fields (Skinner, 2013). By reflecting the creator's dialogue with the world and leveraging the body's intimacy, contemporary jewellery delves into complexities and pleasures and challenges prevailing paradigms to provide novel insights into our interactions with the world (Astfalck, 2005). Jewellers are increasingly employing creative and dynamic approaches to showcase their work, such as photography, video, installation, performance and other interactive arts (Astfalck, 2005). Building on this foundation of interdisciplinary exploration in contemporary jewellery, this research has forged a unique connection with performance arts. Situated at the intersection of these two creative domains, this study has aimed to broaden the understanding of light-reactive materials and their potential for innovative, interactive and dynamic wearable objects by incorporating performance theories, techniques and collaborative processes with performance artists.

The researcher's work as a jeweller consistently emphasises the integration of alternative materials, with a specific focus on the potential of light-reactive materials in the development of contemporary jewellery. Prior to this PhD study, the researcher's jewellery creations were largely inspired by bioluminescent sea creatures and the immersive environment of marine life. Light-reactive materials were used to mimic the resplendent colours and forms of marine creatures such as

jellyfish and sea anemones. This decision facilitated an exploration of the interactive and multisensory experience of wearing and viewing jewellery. The multifaceted interaction of body, light and space transformed the jewellery into an immersive sensory experience, captivating both the wearer and the observer. This is elaborated upon during the explorative phase of studio practice, detailed in Section 4.1.1.

In the researcher's earlier practice, the manipulation of light conditions to change the characteristics of light-reactive materials demonstrated the great potential offered by working with the choreography of body movements. This process added a performative dimension to the wearable pieces, as the jewellery dynamically altered and responded to changes in the direction and intensity of light. As such, the utilisation of light-reactive materials in these early works catalysed a growing fascination with their performative and dramatic properties. These materials facilitated an immersive wearing and viewing experience through their employment as body adornment. The aim was to further blend jewellery design with the interactive and transformative nature of performance art.

Another observation made prior to the researcher's PhD study concerned the need to control aspects of the environment in the work, as how this is achieved significantly impacts the nature of both the creative process and the creative outcome. Such control is not about exerting dominance over the environment; rather, it is about understanding and orchestrating interactions between the surroundings and the light-reactive materials. By manipulating these interactions, pieces can be designed that transform and respond dynamically to specific environmental conditions such as changes in light and movement. This control also allows for a heightened level of engagement between the wearer and the piece of jewellery. It invites the wearer to become more than a passive vessel for the artwork; instead, they are actively engaged in a dynamic, performative relationship with the piece, influencing its visual characteristics through their movements and the surrounding light conditions. This observation laid the foundation for subsequent material experimentation and creative projects in a theatrical space.

By introducing an element of environmental responsiveness, jewellery pieces can be seen as living, evolving entities that engage in a continual dialogue with both the

wearer and their surroundings. The intent to control aspects of the environment translates into an expanded understanding of the role of the artist. As an artist, the researcher is both a creator and a facilitator of interactions and experiences, as they set the stage for these performative encounters to unfold. The work is positioned within the broader discourse on participatory art and performance, potentially extending the boundaries of what can be considered jewellery.

This preliminary exploration established the impetus for this artistic enquiry and formed the foundation of a more in-depth investigation of the theatrical and performative potential in using light-reactive materials as body adornment. To investigate the complex relationship between the body and light-reactive jewellery, the researcher collaborated with dancers and employed performance arts methodologies to broaden the scope of their artistic practice. These integrated methodologies shed light on the intricate relationship between light, the body and space. Facilitated by light-reactive materials and seen through the lens of performance arts, a creative means of expanding the scope of artistic practice emerged, bringing new insights to the making, wearing and viewing of jewellery from a performative perspective.

According to Barrett (2010: 3), a “generative capacity of creative arts research is derived from the alternative approaches it employs – those subjective, emergent and interdisciplinary approaches”. Moirano et al. (2020) also indicated that collaborative and interdisciplinary projects can foster innovations and challenge established norms within creative disciplines. Collaborative projects encourage dialogue between participants and information exchange across fields, thereby contributing to the advancement of interdisciplinary knowledge and creative expression (Candy, 2019). Located at the intersection between jewellery and performance arts, the researcher’s studio practice has been enriched and informed by interdisciplinary collaboration with performance artists, which has stimulated the creative process and provided insights into how to expand the scope of the creative work. This concept is explained in more detail in the performance methodology (Section 3.3).

3.2 Studio practice as the primary research method

This research adopted a PbR methodology, positioning studio practice as a crucial method of investigation and the creative artefacts as critical evidence of the research outcome. This section presents the multi-method approach employed in the researcher's PbR, exploring the potential of light-reactive materials used as body adornments to create performative and theatrical wearable and sculptural objects at varying scales. To foster an in-depth understanding of the subject matter, the primary research approach combined studio practice with studio-based interdisciplinary collaboration with performance artists. The exploration and development of this creative and dynamic research process followed the principles of reflective practice, ensuring a systematic and critical reflection upon any insights emerging from artistic practice.

3.2.1 Reflective practice

According to Nelson (2013: 26), "a PaR submission is comprised of multiple modes of evidence reflecting a multi-mode research inquiry". The evidence in this research included: (1) artefacts produced during the studio practice; (2) documentation of the process, including photographs, video recordings, sketchbook drawings, research notes and online research blogs; and (3) complementary writing that contextualises the practice, situating it within a lineage of influences, and reflective writing that facilitates the development of a conceptual framework. Complementary writing contributes to the "articulation and evidencing of the research inquiry" (Nelson, 2013: 81). In this case, the documentation and complementary writings effectively conveyed the intricacies of the research findings, as expressed in both the works and the writing, enabling their dissemination among the broader community.

Creative arts research is often driven by emotional, personal and subjective concerns and incorporates not only explicit and exact knowledge but also tacit knowledge (Barrett, 2010). In *Material Thinking* (2004), Carter highlighted the significance of artistic research when generating a record of the studio process. This record subsequently creates new connections and insights after production. The emergent and dynamic nature of artistic research demands a distinctive approach

within the studio to allow the artist-researcher to explore and interact with the explicit and tacit dimensions of knowledge.

Building on Carter's *Material Thinking*, Bolt (2010) proposed the concept of materialising practices, which highlights the importance of performative engagement and productivity in artistic research, focuses on the relationship between process and text, and necessitates the artist-researcher's self-reflexive mapping of their emerging work as a form of enquiry. In light of this context, it is essential to establish a dialogic relationship between studio practice and the artist's critical written commentary to effectively articulate and exploit the outcomes of these materialising practices in the creative arts exegesis (Barrett, 2010). This dynamic interplay ensures that the artist-researcher can successfully harness the insights and innovations that emerge from their creative activities, paving the way for future applications and developments in the field of artistic research (Barrett, 2010).

The subjective nature of the artistic research process requires that the researcher learns from experience, an idea that is integral to artistic research (Barrett, 2010). As posited by Kolb (2014), the experiential approach stems from one's lived experiences and personal reactions, with learning taking place through action and intentional, explicit reflection on that action. In such approaches, knowledge acquisition involves learner-centred activities driven by real-world problems or challenges, engaging the learner in active problem-solving endeavours. This emphasis on experience-based learning and reflection formed the foundation for the documentation of and reflection upon the researcher's studio practice.

The process of contextualising the researcher's creative studio practice was grounded in a combination of the principles of Gibbs' (1988) reflective cycle and Moon's (1999) reflective writing map, both of which are well-established frameworks that facilitate reflection in academic and professional settings. Gibbs' reflective cycle allows an artist to explore, learn and make sense of studio experiences. This framework served as the researcher's guide and support during their six-stage examination of studio-based experiences, enabling a comprehensive and in-depth reflection on the creative process. The six stages are description, feelings,

evaluation, analysis, conclusion and an action plan (Figure 3.2-1). This model enabled the researcher to engage in a structured and systematic reflection process that fosters a deeper understanding of studio experiences as both a reflective practice and a learning process and promotes artistic and research development.



Fig. 3.2-1 Gibbs' reflective cycle (Gibbs, 1988, cited in Gibson, 2021).

The researcher also employed Moon's reflective writing map (Figure 3.2-2) to understand and learn from the studio experiences (Moon, 2001). This structured framework guided the researcher through a sequence of stages, enabling detailed descriptions of the studio experiences. Using this framework allowed the researcher to analyse their emotions, thoughts and reactions and reflect upon their impact on the researcher's thoughts and behaviour. Subsequently, the researcher developed their reflective thinking through the process of relating, experimenting, exploring, reinterpreting and theorising, as well as through their linking of theory and practice. These synthesised reflections led to the researcher identifying further areas for examination and framing a new question to explore.

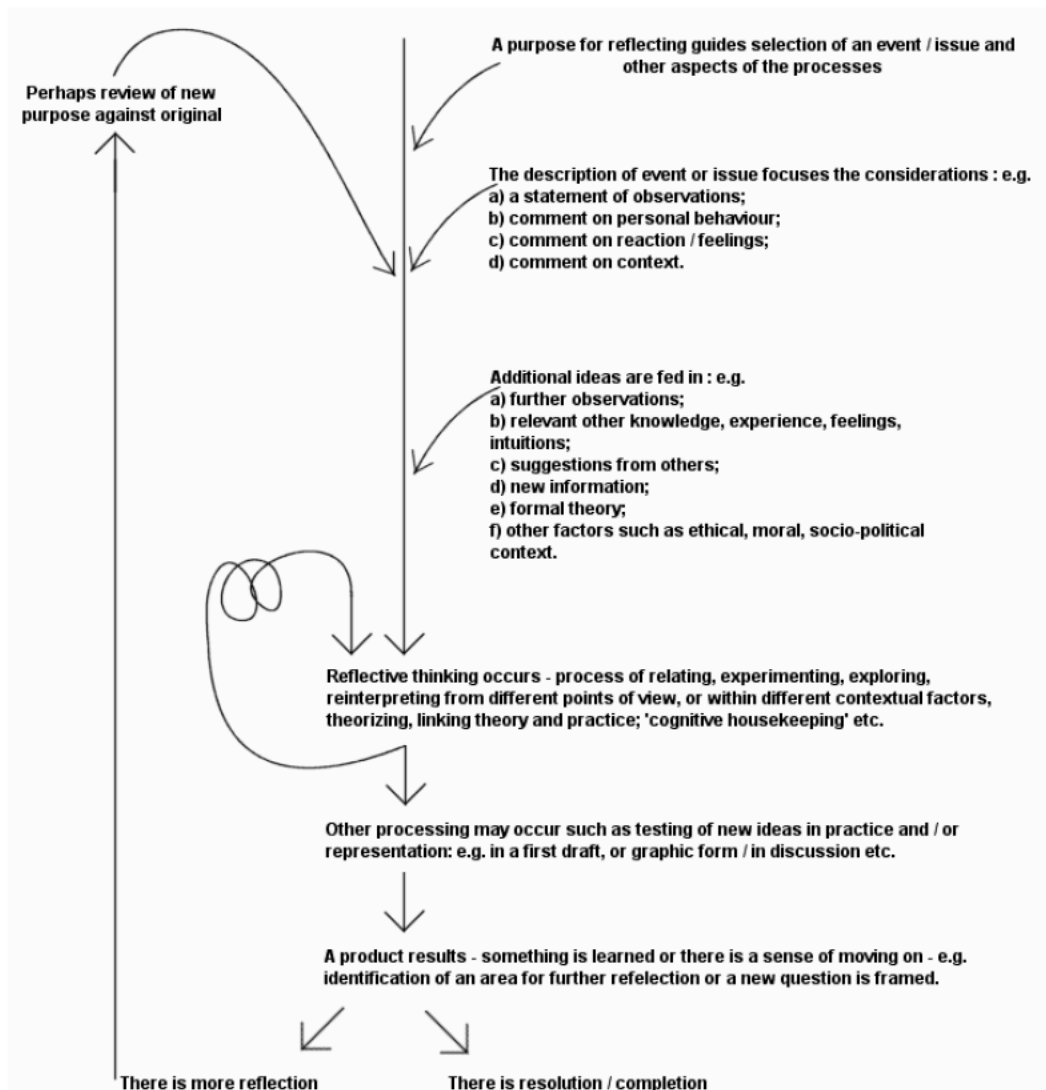


Fig. 3.2-2 The processes of writing reflectively: A map of reflective writing (Moon, 2001: 20).

Following Gibbs' (1988) reflective cycle and Moon's (2001) reflective writing map, the researcher designed an iterative and reflective research cycle to guide the reflection process within the studio enquiry (Figure 3.2-3). By employing this iterative and reflective cycle, the researcher was able to continuously refine their understanding of the research project and identify areas for further exploration and growth. Insights and innovations emerging from the various phases were systematically captured and articulated, contributing to an ongoing critical dialogue between thinking and making.

In conclusion, reflective practice is a fundamental aspect of artistic research, as it facilitates the continuous evaluation and development of the creative process. By utilising the principles of Gibbs' (1988) reflective cycle and Moon's (2001) reflective writing map, the researcher was able to effectively document, contextualise and analyse their experiences in the studio, which led to a deeper understanding of their artistic practice and its connection to the broader research context. The diagram in Figure 3.2-3 illustrates the iterative and reflective cycle employed during this studio-based enquiry and breaks down the studio experiments into three phases. The three making phases of the studio practice are explained in the next section.



Fig. 3.2-3 Overview of the research process, guided by an iterative and reflective cycle

3.2.2 Studio practice design

Articulating the PaR conceptual framework (Figure 3.1-1) into studio practice formed the rationale and core of this artistic research. The specific decisions made during the studio practice are presented in this section. Figure 3.2-4 illustrates the three phases that encapsulated the researcher's PbR. Each phase explains the accompanying types of practice that were conducted (initial exploration, creative workshops and performance projects). The successive stages do not merely represent a linear progression; instead, they form an iterative and reflective cycle, with each stage influencing and informing the others in a continuum of artistic creation and enquiry. The following sections offer a detailed outline of the studio practice design.

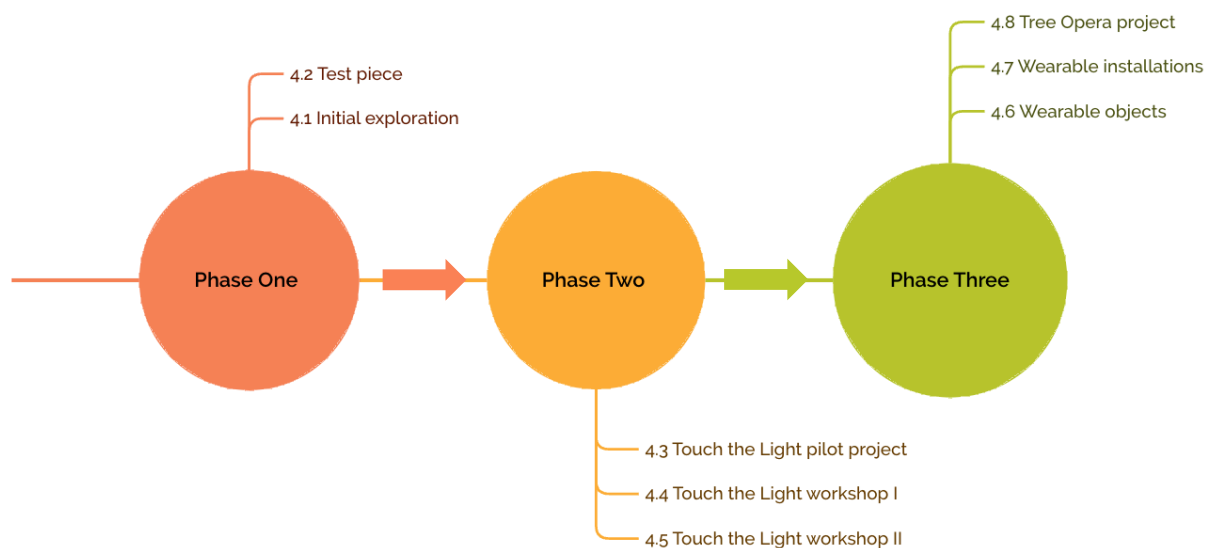


Fig. 3.2-4 Diagram outlining the development of studio practice in three phases.

In phase one, an *initial exploration* (Section 4.1) and *test piece* (Section 4.2) (which, taken together, represented the explorative phase of the research) were carried out. Phase one was aimed at developing an initial understanding of the research context through artistic practice, thereby fostering a critical dialogue between the theoretical analysis and practical work. Research themes pertaining to light, space and the body were examined through the researcher’s engagement with light-reactive materials in jewellery design, innovative display methods and immersive interactions with light installations.

In phase two, the *Touch the Light* pilot project (Section 4.3), *Touch the Light Workshop I* (Section 4.4) and *Touch the Light Workshop II* (Section 4.5) were conducted. This phase involved a series of art installations and workshops that engaged audience participants and researchers from such diverse fields as jewellery, architecture and performance arts. Light-reflective and light-reactive textiles, fluorescent plastic loops, mirrors and wearable objects formed the core components of these installations and workshops. Audience members and researchers were encouraged to touch, play with and interact with the materials and wearable objects in a dark space. This initial process of co-creation and co-reflection established the foundation for the collaboration with the dancers and performers in phase three. However, it is important to acknowledge the impact of COVID-19 on the

researcher's studio development, given the restrictions on continuous engagement with a large group of participants during the pandemic. Consequently, the research plan was adapted to focus on collaborations with individual or small groups of dancers and performers, which influenced the research outcomes. This is discussed further in Section 4.5.

In phase three, the research activities were *Wearable Objects* (Section 4.6), *Wearable Installations* (Section 4.7) and the *Tree Opera* project (Section 4.8). By running the three workshops in phase two, the researcher gained valuable experience in testing a range of light-reactive materials and an understanding of how to work within theatrical environments using performance-based approaches. Hence, the research was advanced through immersion in large-scale performance projects.

The research process was enriched by co-creation and co-reflection. During phase three, the researcher took on multiple roles that ranged from the creation of performative wearable objects to engagement in more complex making and design processes, including those related to costume, scenery and stage design. The researcher's involvement in intricate creative and collaborative processes within performance projects fostered dynamic and interconnected relationships between artefacts from different phases, transforming them into vibrant art forms at this stage.

3.3 Performance methodologies

As this research was situated at the intersection of contemporary jewellery and performance arts, it aimed to expand the understanding of light-reactive materials and their potential for creating dynamic large-scale and body-related artworks. By adopting performance theories, techniques and collaborative processes with performance artists, it was possible to uncover the intricacies of the relationship between light, light-reactive materials, the body and space. This interdisciplinary collaboration significantly expanded the scope of the artistic practice, broadening it from jewellery alone to encompass dynamic body-related art forms.

According to Sawyer (2006), most group creativity shares three characteristics: improvisation, collaboration and emergence. Improvisation allows for creativity to happen in the moment of the encounter, with performers acting as creative artists rather than just as mere interpreters. Collaboration involves all members contributing and interacting and results in a collective performance that cannot be attributed to a single individual. Emergence refers to the idea that the whole is greater than the sum of its parts, with complex, unpredictable and contingent phenomena arising from the group's components. By keeping these characteristics in mind, the researcher was able to maintain a collaborative and open-minded way of thinking that was essential to the success of this interdisciplinary research project.

Performance methodologies serve as crucial pathways for the exploration and analysis of the interactions between light, jewellery and the body; at the same time, they expand the possibilities for innovative, interactive and dynamic body-related wearable adornments within an improvisational, collaborative and emergent context. Investigating these interactions through the lens of performance art allowed the researcher to gain a deeper understanding of the effects of light, light-reactive materials, body movement and space on both the wearer and the audience, thereby offering valuable insights into the development of new artistic expressions. The following section outlines several key aspects where performance art methodologies contributed to the overall aims and objectives of this project.

Interdisciplinary exploration: As mentioned, PaR can be seen as an inherently interdisciplinary approach that effectively draws upon a diverse range of sources from various fields (Nelson, 2013). Interdisciplinary collaboration, when seen as a strategic approach to fostering creativity, has been identified as a key driver of innovation (Moirano et al., 2020). The growing academic interest in interdisciplinarity stems from the imperative to explore questions and issues that cannot be comprehensively addressed through a singular disciplinary perspective (Repko and Szostak, 2017). Candy (2019) argued that an interdisciplinary collaboration can introduce unexpected and surprising thoughts into a well-established frame of reference and break through barriers created by inflexible practices, a process referred to by Schon (1983) as “overlearning”. Such surprise encounters can foster

reflection and encourage creative practitioners to explore new directions and transcend pre-planned intentions or expectations (Schon, 1983).

Within this context, performance offers a rich and versatile medium through which a researcher can investigate the intersections between contemporary jewellery and other artistic disciplines, such as dance, theatre and visual arts. The incorporation of performance methodologies and techniques into the creative process encourages a more dynamic and open-ended approach to the research process, fostering innovative collaboration and exchanges between contemporary jewellery and performance arts. To generate emergent insights through reflective practice, this project followed an interdisciplinary approach that focused on the exploration of materials, approaches to jewellery and performance making, and the use of visual documentation (Figure 3.3-1).

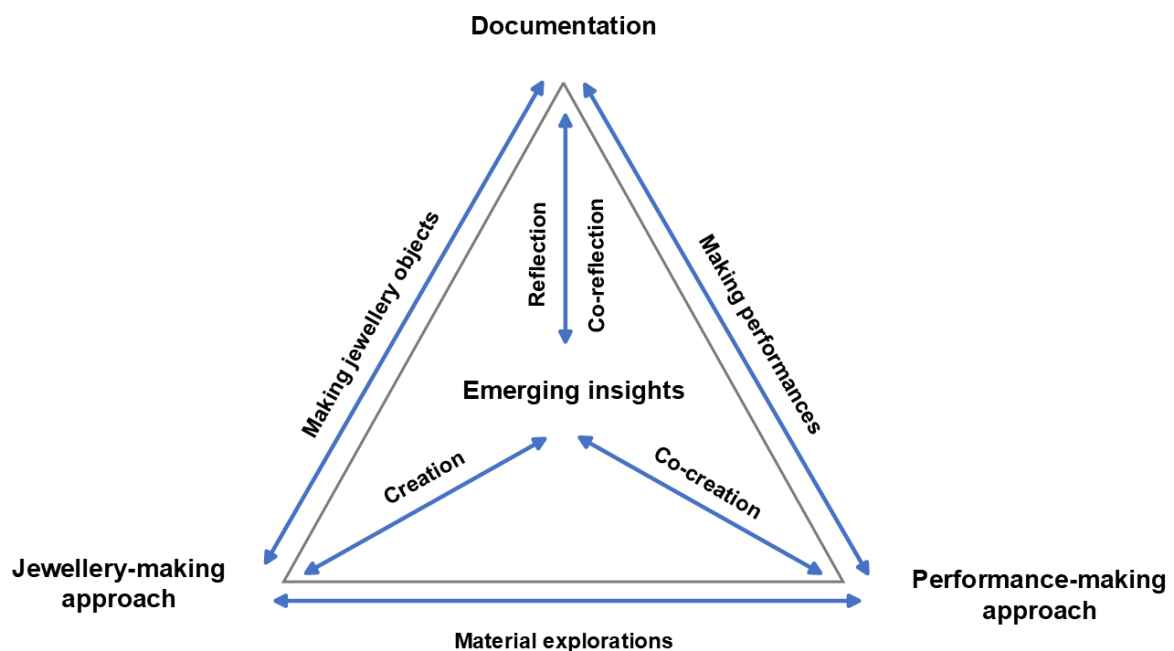


Fig. 3.3-1 Key elements of this research combined in an interdisciplinary approach.

Performative qualities of light-reactive materials as jewellery: The use of performance as a method to investigate light-reactive materials in jewellery (particularly through collaboration with dancers) can enrich the performative aspects of contemporary jewellery. This approach places particular emphasis on the interaction between and movement and transformation of the light, object, body and

space, thus broadening the understanding of how these elements interconnect within the context of contemporary jewellery design. By exploring these qualities through performance approaches, new possibilities for the design, making and wearing of jewellery can be discovered, thereby encouraging wearers and viewers to reconsider their expectations and assumptions regarding body adornments.

Body movement is a fundamental aspect of dance performance, and its incorporation into jewellery design can lead to innovative and intriguing creations. By embracing the potential for movement in wearable objects, it is possible to develop pieces that respond to the wearer's actions and interactions, thereby creating a dynamic dialogue between the body, the adornment and space. This fluidity generates a sense of vitality and presence, transforming the way in which jewellery is perceived and experienced. Interaction is another crucial element of performance, and by examining how contemporary jewellery engages with the wearer and the audience, it is possible to develop a deeper understanding of the emotional and social dimensions of body adornments.

The interactive quality of jewellery can provoke thought, evoke emotions and stimulate conversation, elevating the piece from a mere accessory to a powerful tool for communication and self-expression. When engaging with a performance by wearing, viewing and interacting with jewellery, it is possible to expand the scope of the work by incorporating space as a material. This transforms the work from a jewellery-wearing experience into a dynamic and ever-changing relationship with the wearer's body and surroundings.

By exploring the performative qualities of contemporary jewellery through performance, traditional expectations of body adornments can be challenged and redefined. This approach encourages a shift in perspective, prompting both creators and audiences to see jewellery as more than just a decorative accessory and to instead view it as a dynamic and interactive medium that has the potential to transform, communicate and engage in a manner that enriches the artistic experience.

Embodied experience and knowledge: The concept of embodied knowledge posits that our bodily experiences inform and shape our understanding of the world (Merleau-Ponty, 1962). This notion has been widely embraced in performance studies, where scholars and practitioners have explored the ways in which the body can serve as a site of knowledge production (Schneider, 2011). Performance foregrounds the role of the body in the research process by emphasising the importance of embodied knowledge, skills and experiences in the generation of artistic insights and understandings. By engaging with performance as a mode of knowing and enquiring, this project acknowledged the value of hands-on, experiential learning and the unique contributions artists and performers offer to the research process. The embodied experiences of the artists and performers, such as their physical interactions with light-reactive materials, bodily movements and sensory engagement with the environment, became central to the research process.

By placing the body at the forefront of the enquiry, the project drew upon a rich reservoir of embodied knowledge that could be accessed through performance methodologies. Moreover, the collaborative nature of performance-based research encouraged an exchange of embodied knowledge and skills between the artists and performers (Sawyer, 2006). This cross-disciplinary dialogue can foster the development of new ideas, techniques and artistic expressions, further enriching the research process and outcomes (Rust, 2007).

Audience engagement and participation: In each of the workshops, the nature of audience participation was unique. In *Touch the Light* pilot project (Section 4.3) and *Touch the Light Workshop II* (Section 4.4), the audiences were invited to physically interact with the installations, and the ways in which they responded to the artefacts, light and space were observed. In the *Tree Opera* project (Section 4.8), a small group of audience members was invited to watch the live performance. Due to the social restrictions in place during the COVID-19 pandemic, opportunities for audience members to physically interact with the objects were limited.

3.3.1 RSVP cycles

Developed by performance theorist and choreographer Lawrence Halprin, RSVP cycles form a crucial methodological framework that was used to carry out the performative collaborations in this research project. Halprin (1969) argued that four elements (resources, scores, “valuation” and performance) are essential to any creative process and that understanding them can lead to more effective and meaningful design. The RSVP cycle (Figure 3.3-2) provides a structured yet flexible approach to the creative process, promoting collaboration, experimentation and reflection. In Halprin’s (1969: 2) words:

Resources which are what you have to work with. These include human and physical resources and their motivation and aims. *Scores* which describe the process leading to performance. *Valuation* which analyzes the results of action and possible selectivity and actions. The term “valuation” is coined to suggest the action-oriented as well as the decision-oriented aspects of V in the cycle. *Performance* which is the resultant of scores and is the “style of the process”.

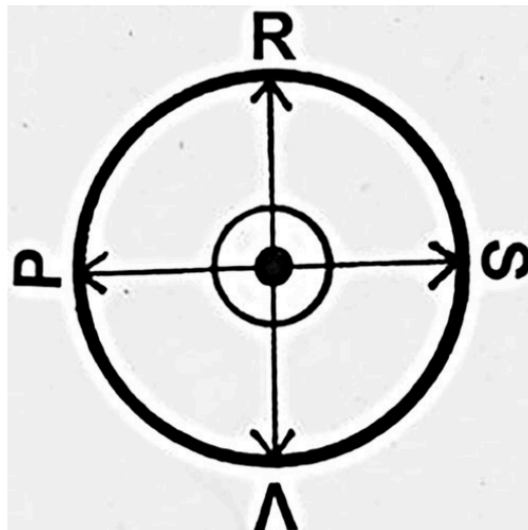


Fig. 3.3-2 The RSVP cycle (Halprin, 1969: 2).

When these four elements were adopted into the researcher’s collaborative performance workshops, the resources comprised the materials, design ideas and

skills available for the creation and exploration of the wearable art pieces. These resources included light-reactive materials, lighting and studio space arrangements, the expertise of the artists, dancers and performers, and any visual documentation or reference materials. The scores served as the guides or structures for the development and presentation of the body adornments, encompassing elements such as choreography, body-related wearable and interactive design concepts, and spatial arrangements. The term “valuation” referred to the evaluation of and reflection on the outcomes of the creative process; this enabled the collaborative team to assess the effectiveness and impact of the wearable art pieces and their integration into the performance. This reflective stage promoted the continuous improvement and refinement of the artistic practice. Finally, performance encompassed the actual presentation and enactment of the light-reactive adornments, covering both the body adornments themselves and the accompanying performative elements.

By embracing the RSVP cycle as a guiding framework, this research project was better equipped to manage the intricacies and uncertainties inherent in the creative process. The systematic approach offered by the RSVP framework enabled a structured and flexible means of investigating the multifaceted relationships between light-reactive body adornments and performance art. The RSVP cycles’ adaptability allowed the collaborative team to efficiently respond to emerging ideas or challenges, while their holistic approach ensured coherence and organisation throughout the project’s development.

3.3.2 Collaborative creativity

Collaborative creativity is used in various research projects and art practices, such as theatre, dance and music (Barrett et al., 2021). It is best fostered through a shared conceptualisation of ideas, immersion in different creative processes, and personal reflection and development over extended periods (Barbour et al., 2007). Due to the interdisciplinary nature of this project, co-creation and co-reflection working methods were used to explore the potential synergies and collaborative opportunities between the jewellery and performance art disciplines. According to Candy (2019), co-reflection through co-creation is a fundamental facilitator of mutual

learning and shared understanding among participants in a creative collaborative process.

Candy (2019: 128) argued that co-creative practices play a significant role in stimulating and promoting more profound reflective thinking: “By making artefacts, events and performances, individual practitioners create tangible outcomes to contemplate, appraise, evaluate, reassess and revise: in effect, they are mechanisms for reflection”. This, ultimately, contributes to the development of an individual’s reflective practice through interpersonal interactions. As Candy (2019: 103) said:

For many practitioners, the attraction of collaboration is in having a genuine dialogue based upon difference and drawing on that difference. They benefit from exchanges between people with differences in outlook or “world view”, differences in ideas and beliefs and differences in working practices. This is where the interdisciplinary element, a key aspect of collaboration, plays a crucial role.

A dialogical approach serves as the cornerstone driving the co-creation and co-reflection processes in artistic research. This method of interaction encourages open communication, active listening and mutual respect among participants (Wegerif, 2007). It fosters a shared understanding and stimulates the generation of novel ideas by drawing upon the diverse perspectives and experiences of collaborators (Sawyer, 2007). As Bakhtin (2010) explains, the dialogical approach emphasises the importance of dialogue in constructing meaning and understanding. In the context of collaborative creativity, it promotes the exchange of knowledge and ideas and facilitates the co-creation of innovative solutions (John-Steiner, 2000). By engaging in meaningful conversations, participants are encouraged to challenge their assumptions, explore alternative viewpoints and build upon each other’s ideas (Glăveanu, 2014).

Collaborative creative practice is a multifaceted and adaptable process that is influenced by various factors, such as the nature of the work, group values and individual roles, whereby participants exchange ideas and experiences to achieve a

common objective (Candy, 2019). In the third phase of this artistic research, which focused on collaborative performance, the researcher had the opportunity to work with three talented performance artists: Roxanne Korda (librettist), Oliver Farrow (musician) and Jingya Peng (dancer/choreographer). The artists worked together to construct a space-collaborative process that could synthesise the elements of practice and thereby explore how the process of performance contributes to the process of making, wearing and viewing jewellery. They co-created the *Tree Opera* project (Section 4.8), a collaborative practice to which every artist contributed equally. Korda wrote the opera story, Farrow composed the music, Peng choreographed the dance, and the researcher designed the scenery, including the costumes and wearable objects and installations.

In the scenery design process, the researcher worked closely with Korda and Peng to investigate how light-reactive materials could be choreographed and how they interacted with the body and space to align with the opera's narrative. Creative outcomes emerged from these collaborations (detailed in Sections 4.6 and 4.7) and were merged into the *Tree Opera* project (Section 4.8) and the second iteration, *Lipote: An Interconnected Journey* (Section 4.8.2.2). As each contributor played a vital role in shaping the outcome, full credit was given to every artist for all of the performances, documentation, and promotional materials related to the collaborative projects. This credit included listing all the collaborators' names, roles and contributions to the artwork. Moreover, agreements have been made between the collaborators to confirm the co-authorship and shared use of the creative work that emerged from the collaborative projects.

3.3.3 Improvising performance

Improvisation played a vital role in this research project, as it enabled the artists, dancers and performers to explore and experiment with the light-reactive body adornments in a spontaneous and unscripted manner. The incorporation of objects within theatrical or dance performances can serve a multitude of purposes, not least of which is the amplification of storytelling capacity and the facilitation of physical interaction (Bågander, 2015). Objects become fundamental components within the

performative landscape by exerting an influential role in choreographing, interacting with or narrating a given performance.

Tufnell and Crickmay (1993) accentuated the pivotal function that objects hold in the sphere of creativity (most notably, within the scope of improvisation). They argued that “objects furnish a tool to create a milieu conducive for improvisation – a conduit for engaging in an exchange with an entity other than oneself” (Tufnell and Crickmay, 1993: 121). As such, by engaging in an improvisational performance, it was possible to discover novel ways of interacting with wearable art pieces and to uncover unexpected relationships between the adornments, the body and movement. Improvisation also fostered a sense of playfulness and curiosity and encouraged the research team to take risks and push the boundaries of the conventional understanding of jewellery and performance art. This approach facilitated the generation of new insights and perspectives and promoted an atmosphere of open-mindedness and adaptability. This atmosphere was crucial to the success of a PbR project that sought to develop innovations in the field of creative art and design.

Improvising the performance allowed for a deeper and more intuitive engagement with the light-reactive materials, as the artists and performers could directly respond to the changes in light and colour that occurred during the performance. This real-time interaction and adaptation led to the emergence of unique and dynamic expressions of the interplay between the wearable art pieces, the body and the surrounding environment. Improvisation also allowed the dynamics, movement preferences, spatial understanding and other manifestations of the embodied subjectivity of each dancer to be expressed in a relatively unfettered way. In this project, the dancers involved had minimal prior experience of performing with light-reactive materials. Therefore, in the initial stages of the collaboration, it was necessary to introduce these materials to the dancers and involve them in the making process to deepen their understanding. The dancers were immersed in an environment filled with various light-reactive materials, including fabrics, cords, elastic string and paper.

In the collaborative process, the dancers assumed a dual role within the research framework and acted as both performers and makers. On the one hand, they were subject to observation as part of the research process, as their behaviour, movements and expressions were analysed and recorded. On the other hand, they actively participated in experimenting with the materials and incorporating choreography into the performance, ultimately contributing to the creative outcomes. This methodology offered a distinctive and immersive perspective on the performers' experiences and behaviour, as it enabled them to directly engage with and contribute to the research process. Furthermore, it facilitated a more interactive and engaging experience for the performers and audience members, as the performance was moulded by the perspectives and experiences of the performers themselves.

3.3.4 Theatre methods

The material properties of the light-reactive materials called for light-controlled environments to be used. This required the performance workshops to be conducted in relatively dark settings so that the interactions between the body, the wearable objects and the space could be observed. The COVID-19 pandemic posed a significant challenge to the execution of light-reactive material performance workshops; a range of theatrical and non-theatrical spaces across and beyond the campus were utilised to overcome these obstacles. These included the Shell Gallery, the Royal Birmingham Conservatoire (RBC), Birmingham School of Jewellery's gallery space and the RoguePlay theatre, Birmingham. These venues not only provided the necessary environments in which to conduct the workshops but also ensured the safety of all involved.

When researching light-reactive body adornments, various theatre methods were used to explore the interplay between performance, materials and space; these methods included the black-light theatre performance method, which uses light to create stunning visual effects on stage (for more details, refer to Section 2.2.3). Black-light theatre performances allow the unique characteristics of light-reactive materials to be explored in a controlled and manipulated environment. The use of black-light theatre as a method in this research made it possible to experiment with various colours of LED light and light-reactive materials and to test prototypes

throughout the research process. The use of black light allowed for a range of illusions and visual effects to be created, including the levitation, disappearance and transformation of objects and performers.

Installation art often involves the creation of an immersive and interactive environment that combines elements of performance and visual art. This approach often blurs the lines between the performer, the audience and the artwork, creating a dynamic and engaging experience that challenges the traditional notions of performance and spectatorship. It encourages the viewer to actively participate in the creation of meaning and the interpretation of the artwork, making it a collaborative and transformative experience. The studio practice adopted in this project made use of a mixed method employing both black-light theatre and installation art.

Site-specific performances were also part of this project's creative process. During the pandemic, the performative workshops had to be adapted so that they could be conducted in different-sized theatrical spaces and under various lighting conditions. Most of these venues were equipped with adjustable lighting facilities, which allowed for the manipulation of light conditions for performance purposes, as well as experimentation with various colours of LED light and light-reactive materials and testing of prototypes throughout the research process. However, the workshop carried out at the School of Jewellery was in an open space, lit by daylight and without any lighting equipment provided. In this workshop, LED lights were set up with the help of a technician, and as the open space allowed daylight to enter, the workshop did not start until after sunset.

As the performative projects were conducted in a range of locations that considered the site-specific characteristics of the performance spaces (such as size, shape and lighting), working within different theatrical environments proved to be a challenge for both the dancers and the researcher. While the differences did not significantly affect the documentation of the research (in terms of the photos and videos taken of the artefact), working within different-sized spaces affected the creation of the performative installations. The different sizes of the performance spaces influenced how the dancers perceived and interacted with the work; this difference also

influenced the researchers' creative practice, especially in the creation of the art installations.

3.4 Data collection and analysis

PbR in the creative arts is characterised by both its focus on generating novel outcomes and the transformative nature of the making process, which leads to the development of new works (Candy and Edmonds, 2018). In this realm, the creation of an artefact is central, and insights derived from the making, reflection and evaluation processes may be directly incorporated into the artefact itself. Thus, documentation is essential for reflecting upon and evaluating the artefacts produced in a studio-based environment, while making, documenting and reflecting serve as the primary methods within the research process and form a fundamental part of the communication and dissemination of the research outcomes.

To meet the research's aims and objectives and fully develop the experimental and exploratory nature of this study, the following activities were undertaken: material exploration, studio practice, audience participation workshops, performance workshops, semi-structured interviews, visual documentation and reflective writing on the studio process. These elements were interwoven to create a reflective practice centred on the development of practice-based projects. The following section considers the data collection and analysis methods, which were carefully selected to align with the research question and objectives.

Studio practice: Serving as the primary data-collection method, the researcher's creative practice encompassed the design, creation and experimentation of light-reactive body adornments and performative jewellery pieces (see Section 3.2 for more details). As a jeweller, the researcher engaged their jewellery-designing and jewellery-making skills to create large performative and wearable objects from light-reactive materials, which were then used in a collaborative project with dancers. The artefacts generated from the studio practice were documented in various forms, including video, photography, sketches, drawings and an online research blog. These visual forms of documentation aimed to record and analyse the different

stages of the creative process, illuminate the intricate interplay between jewellery, performance and the body, and provide the foundation for reflective writing, thus enabling critical evaluation and insight into the development of the PbR.

Collaborative workshops: Building upon the explorative process of phase one, phase two encompassed six workshops involving audience participants and collaborative sessions with dancers and performers. This research project aimed to investigate the potential of light-reactive adornments within a performative context by fostering co-creation and co-reflection with performance artists and audience members. This objective was accomplished through a two-phase approach: the incorporation of a series of workshops designed to facilitate co-creation and the exploration of research themes. During the workshops, data collection was carried out through a combination of observations, field notes, audio and video recordings and photography. These methods enabled the comprehensive documentation of the participants' interactions with the light-reactive adornments, as well as their creative input and experiences during the sessions.

At the heart of these workshops were the co-creation and co-reflection processes, which encouraged both the participants and the practitioner-researcher to collaboratively engage in the creative exploration and critical examination of the artistic outcomes. Co-creation fostered a sense of ownership and shared responsibility among the collaborators and nurtured a collective understanding of the artistic process and its impact on the research themes. The co-reflection process required the participants and the practitioner-researcher to collaboratively reflect on the outcomes of the workshops and discuss the successes, challenges and areas for further exploration.

Observations: During the research process, the researcher took detailed field notes and reflected on the interactions between the body, adornments and environment in the performances and workshops. In this study, they observed the interactions between the dancers, performers and the light-reactive jewellery in the workshops, rehearsals and performances. This involved the systematic recording of events, behaviours and artefacts within the research context. These observations provided

valuable insights into the ways in which light-reactive materials interact with the body and the surrounding space.

Semi-structured interviews: Semi-structured interviews were adopted in this research and proved to be instrumental, as they enabled first-hand perspectives and experiences related to the research topic to be recorded. A predetermined set of open-ended questions guided the conversations and allowed the interviewer to probe further or follow up on responses as necessary. The semi-structured format facilitated flexibility and adaptation to the participants' unique perspectives while addressing the research questions. The thematic analysis, facilitated by the ATLAS.ti software, was employed to compare the qualitative data obtained from these interviews. This approach demonstrated rigour in coding, identified emergent themes and provided an in-depth understanding of the complex relationship between light-reactive materials, the body and space. Due to the impact of COVID-19, most of the interviews were conducted online using video recordings while adhering to ethical guidelines to ensure the participants' confidentiality and privacy. The collected data were transcribed and analysed utilising a thematic analysis to identify recurring patterns and themes (Braun and Clarke, 2006).

During this research, both individual and group interviews were conducted. The individual interviews enabled an in-depth understanding of the experiences and perspectives of the audience participants regarding their interactions with the light-reactive installations by focusing on how the materials enhanced the visual and physical experience and the participatory aspect of the installation. Additionally, group interviews were conducted with the collaborators, including the dancers and performers. These generated rich and diverse data, as the participants built upon each other's ideas and insights.

This exploratory method accounted for the naturally occurring variations that arose from the group interviews and facilitated the gathering of data on the collective interpretations of events that necessitated group input (Frey and Fontana, 1991). Thus, the data collected consisted of a shared elaboration on certain statements rather than definitive, individual assertions from single participants. As the facilitator,

the researcher guided the discussions and posed questions about the experience of working with light-reactive materials in the choreography and performance process and how the materials facilitated interactions between body movements, light and space. These group discussions proved valuable for exploring the collaborative and performative processes involved in the project. This approach provided a comprehensive understanding of the complex relationship between the light-reactive materials, the body and the space from the perspectives of the collaborators and performers involved in the project.

Visual documentation: Various forms of visual documentation, including video, photography, sketches, drawings and an online research blog, were employed to systematically record and analyse the different stages of the creative process and elucidate the intricate interplay between jewellery, performance and the body. With the help of visual documentation, ongoing reflection laid the foundation for the iterative and reflective research process in which visual data was gathered and assessed, effectively contextualising the creative and performative processes in addition to the outcomes of the research. Video and photography proved to be indispensable tools for documenting the creation and performance of the light-reactive materials and the intricate interactions between body movements, objects and space. These approaches proved to be an invaluable means of capturing and reflecting upon the research process and preserving the ephemeral, transient nature of the artistic practice and its outcomes. Moreover, the visual documentation methods facilitated the collaborative process by providing a means of reviewing and assessing the work at different stages. This ongoing evaluation allowed all those involved to reflect upon their artistic decisions, identify areas for improvement and assess the overall impact of the creations. The visual documentation of the artefacts and performances developed in each workshop is accessible through a website link (see Appendix 7).

3.5 Ethical considerations

This research project obtained ethical clearance from the ethics committee of the Faculty of Art Design and Media at Birmingham City University (BCU). Approval was

granted on 10 July 2020, and the project adhered to the ethical standards required in conducting PbR (see Appendices 3 and 4). Following the ethical guidelines of BCU regarding research procedures and data gathering, the researcher considered and was cautious about any ethical issues related to this research. This interdisciplinary PbR project involved multiple participants, including students, researchers and performance artists, who participated in workshops and interviews. Thus, some key ethical considerations were adopted.

First, informed consent was obtained from all the participants. Each participant was provided with information about the research aims, objectives, methods and potential risks. Written consent was obtained from each participant to ensure voluntary and informed participation, and confidentiality and anonymity were maintained throughout the research process to protect the privacy and identity of the participants.

Second, the collaborators came to an agreement regarding co-authorship and the shared use of the creative work produced from the collaborative projects. All artists involved in this research have been credited for their creative output into the collaborative projects.

Third, health and safety concerns were mitigated by adhering to the relevant safety guidelines and prioritising the well-being of all the participants. All participants were informed before the start of the workshops that they were entering an art space where LED lights in specific colours would be used in a dimly lit environment (see the Statement of Identified Ethical Risks in Appendix 3).

3.6 Conclusion

This chapter presented an overview of the interdisciplinary artistic research methodology, which integrates practice and theory and positions creative practice at the heart of the research process. This research project investigated the complex relationship between light-reactive materials, the body and space by borrowing methodologies from the field of performance art. To demonstrate the rigour of the research process, the researcher's positionality, the data collection and analysis

methods, and ethical considerations were discussed in this chapter. The subsequent chapters examine the research process and the study findings and their implications for contemporary jewellery and performance art.

4. Making

In this chapter, I document the studio practice I undertook throughout the research project and present a chronological division of my creative practice into three distinct phases. This structure enables a guided exploration of the reflective and iterative development of the research process. My artistic research is situated at the intersection of contemporary jewellery and performance art, facilitating the exploration and expansion of my studio practice to create various artistic dimensions. These dimensions include installation art, performance art, dance choreography, and costume design and explore the concept of contemporary jewellery as an interdisciplinary subject.

Phase one focuses on the initial exploration and the development of a test piece to establish a fundamental understanding of the research context through artistic practice. This phase examines research themes related to light, space and the body. It builds upon my prior experience with light-reactive materials in my jewellery design, my exhibition experience in creative display methods and my visit to light installations. Phase two comprises interactive workshops that engage audience members and researchers from the fields of jewellery, architecture and performance art. This phase establishes the groundwork for collaboration with dancers and performers in phase three, which documents the co-creation and co-reflection of the performance-making process and engagement in complex making and design processes with performance artists.

Phase One: An Explorative Journey

4.1 Initial exploration

My motivation for this artistic research originated from my previously completed master's project, which focused on exploring the multisensory experiences of wearing and observing jewellery using light and light-reactive materials as design elements. This current research project builds on the insights gained from my postgraduate project, aiming to investigate the applications of light-reactive materials as body adornments through performance art while exploring contemporary jewellery as an interdisciplinary subject. During the exploratory phase of my PhD research (Sections 4.1.1–4.1.3), I will reflect on my previous studio practice and jewellery exhibition experiences as well as my initial understanding of the relationships between light, light-reactive materials, the body and space. This reflection serves as both an early exploration and a foundation for subsequent studio practices in this research project. Some design elements from my earlier jewellery works were further developed into larger, performative wearable objects or installations during phases two and three of this research project. In the next section, I will provide a brief overview of my earlier studio practice and explore its potential for developing into larger performative works.

4.1.1 My earlier studio practice

My postgraduate jewellery collection, *Go with the Glow* (Figures 4.1-1 and 4.1-2), was inspired by the interaction between jewellery and light, drawing additional inspiration from marine life and experimenting with fluorescent materials using LED light to activate the jewels. When light is projected onto a jewel, it emits brilliant colours. In the absence of projected light, the fluorescent materials can also emit light. As the jewellery can actively or passively react to its surroundings based on lighting conditions, it creates an interrelated and inseparable relationship between the jewellery and its environment. The light serves as a trigger to stimulate the jewellery, transforming the object into a living creature. For instance, in Figure 4.1-1, the illuminated objects can direct vision more distinctly; the jewels become the central focus of the space. While we can perceive the contour of the wearer's body,

the rest of the body fades and blends into the darkness, creating a blurred boundary between the jewellery, the body and the space. The body, instead of playing a passive role in wearing jewellery, actively participates in transforming and shaping the lived experience of wearing. Thus, the body is more than merely displaying and wearing a piece of jewellery; it actively interacts with the work and its environment.



Fig. 4.1-1 *Go with the Glow* jewellery series (2016). Brooch and ring. Florescent nylon, acrylic, sterling silver, fishing line and glass beads.



Fig. 4.1-2 *Go with the Glow* jewellery series (2016). Bracelet. Florescent nylon, acrylic, fishing line and glass beads.

4.1.2 An initial exploration through jewellery display

In 2018, I was invited as a guest artist to participate in the JOYA Barcelona Art Jewellery Fair. While considering the display method for my jewellery collection *Go with the Glow*, with the aim of encouraging the audience to actively engage with and understand the concept of my work, I designed two light boxes installed with LED lights. These light boxes resembled water tanks typically used to display jellyfish in aquariums. In this case, the glowing jewellery displayed in the water tanks can visually pique the curiosity of visitors and largely evoke their experiences or memories related to aquariums. To further encourage the audience to have a more tactile engagement with my work, I placed an instructional sign close to the art pieces reading, “Please play with the torches to see what will happen.” In doing so, visitors can not only use the portable torches to explore the colour changes of the works but also manipulate the appearance of the pieces (Figure 4.1-3).



Fig. 4.1-3 Audience participation at JOYA 2018 in Barcelona.

Photo: Wolf Kublun. Image courtesy of Wolf Kublun.

Since the exhibition space at JOYA was an open area filled with daylight, the light sources would have been weakened, making it difficult to observe how the light shaped and influenced the interactions between the jewellery and the body. To enhance this aspect, I would ideally display my work in a dimly lit environment. The subsequent section offers an initial discussion and analysis of this issue, with a focus on another gallery experience of exhibiting my work.

In 2019, I was invited by Lorenza Bini, the owner of Bini Gallery in Melbourne, Australia, for a solo exhibition to showcase my *Go with the Glow* jewellery collection. Given the freedom to design my own display, I decided to create an immersive atmosphere by employing a single light source in the gallery space. A projection light was installed in the corner of the room, directing it towards the centre of the display stands. As a result, when visitors entered the exhibition space, their attention would immediately be drawn to the illuminated area and jewellery pieces (Figure 4.1-4).

In addition to the central display area shaped by the light, it was interesting to observe the dim shadows occupying the corners of the room, blending with the silhouettes of the gallery visitors. The light-projected area created a space surrounded by shadows, which gave rise to a visually observable blurred boundary between the display area and the rest of the space. As visitors moved around the space, their bodies naturally interfered with the projected light, creating an infusion of body movement, light and shadow. This engagement echoes the essence of Junichiro Tanizaki's work *In Praise of Shadows* (2001), as it emphasises the appreciation for the delicate interplay between people, objects and their surroundings, alongside the ephemeral beauty that emerges from these relationships.

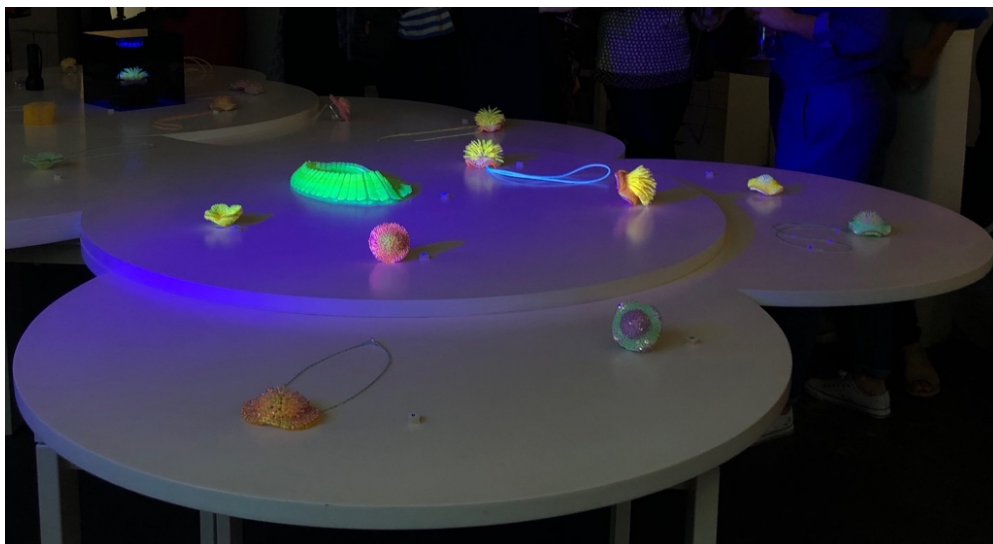


Fig. 4.1-4 *Go with the Glow* jewellery display at Bini Gallery (2019), Melbourne.

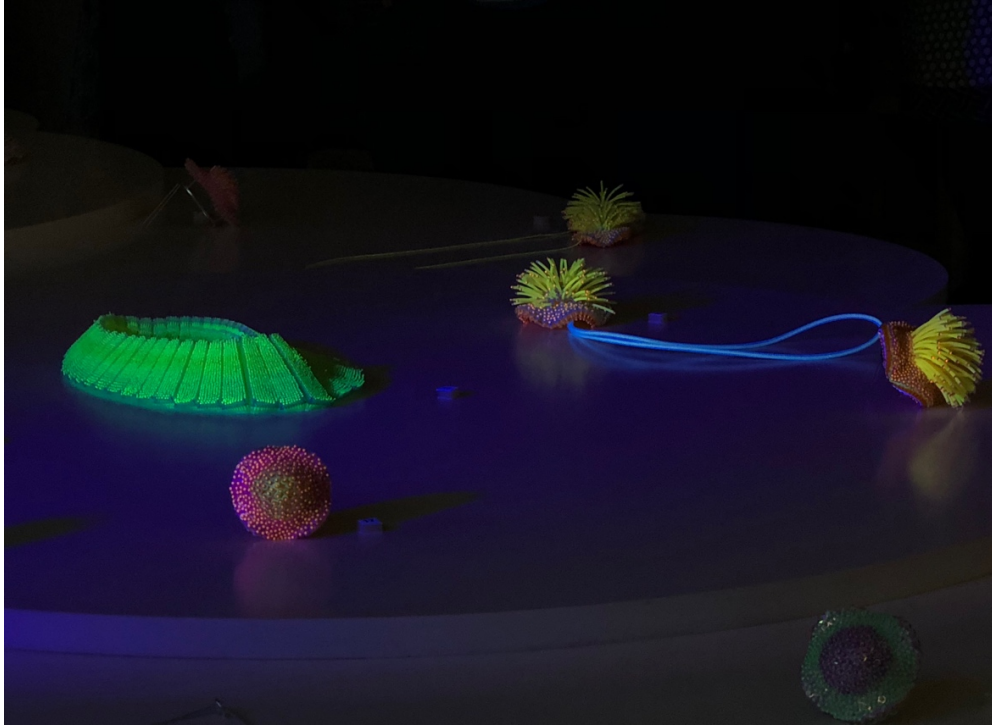


Fig. 4.1-5 *Go with the Glow* jewellery display at Bini Gallery (2019), Melbourne.



Fig. 4.1-6 Visitor wearing the *Go with the Glow* series brooch, Bini Gallery (2019), Melbourne.

Both exhibition experiences enabled me to experiment with creative display methods, using light in various ways to create an interactive and immersive experience for the audience engaging with my work. The positive feedback I received from the audience participants inspired my subsequent approach to setting up my studio practice in phase two (*Touch the Light* pilot project), where I encouraged audience participation in light installation workshops.

4.1.3 Inspirations exploration

My visit to the 2019 Harbin International Ice and Snow Sculpture Festival in China further enhanced my understanding of how light and darkness could transform a space into a multisensory and immersive environment. During my visit, I observed that in the daytime, the ice and snow created a fused space that blurred the boundaries between the sky, the sculptures and the ground (Figure 4.1-7). When day turned into night, multicoloured lights lit up and imbued the ice sculptures with colour, creating variations in visual perceptions (Figure 4.1-8). As visitors moved through this illuminated space, their movements and silhouettes became unintentional choreography within the scenery.

Experiencing a space shaped by light and darkness requires physical activity from the body, which does not automatically lead to a heightened perceptual awareness of the body and self (Petersen, 2015). This experience is similar to visiting a light installation within a dark space, where the spatial boundaries and the body's position are rendered uncertain and can give rise to an experience of the dissolution of the self within the space (Bishop, 2005). This is partly because perceiving one's body as an independent entity becomes more challenging in the absence of light.

Thus, the body in such a space can easily become engulfed in these light installations (Bishop, 2005). Through my visit to the Ice and Snow Sculpture Festival, I gained an initial understanding of how light and darkness shape and transform a space, enriching our sensory experience. This experience also served as inspiration for designing light installations in the *Touch the Light* pilot project (Section 4.3).



Fig. 4.1-7 Harbin International Ice and Snow Sculpture Festival, China. Photo: Shutterstock.com.



Fig. 4.1-8 Harbin International Ice and Snow Sculpture Festival, China (5 January 2019).

4.2 Test piece

4.2.1 Aim and description

The test piece aimed to explore new light-reactive materials and expand wearable objects while reflecting on my transition from a jewellery studio to a theatrical working space. This section will first introduce the experimental process, where I tested light-reactive materials and developed new design ideas for creating a shareable and wearable object for people to interact with. Second, it will discuss how the shift in working space created a dynamic environment for developing my studio practice, allowing me to embrace new possibilities and modes of working. Due to the experiment requiring a relatively enclosed space, artistic research was conducted in the rehearsal room of the Royal Birmingham Conservatoire.

4.2.2 Research process

Creating a jewellery piece that can be worn by more than one person was inspired by the performance work *Divisor (Divider)* by Lygia Pape (1968), which was designed to blur the boundary between the observer and participant through the creation of a collective work (Figure 2.3-9). Instead of creating wearable objects for specific body parts, I created a chain-like necklace that could fully engage with the body. I experimented with light-reactive paints, applying them onto recycled inflatable materials, with the pigment covering the surface (Figure 4.2-1). However, due to a lack of adhesive power in the pigment, which tended to flake off the surface of the work, the wearing and viewing experience of the object was unsatisfactory.

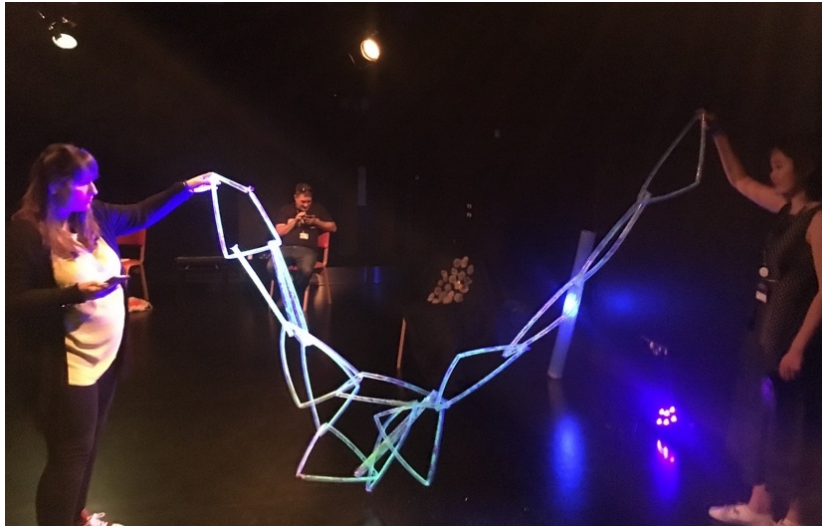


Fig. 4.2-1 Test piece (2019). Recycled inflatable materials and light-reactive paints.

4.2.3 Reflection

Although these materials were not ideal for wearability and interactivity with the body, they served as a good starting point to develop initial ideas for making and designing. My initial experience working in a theatrical environment motivated me to explore sculptural and interactive art forms and develop performance methods. The expanded working space required me to engage in the hands-on experience of crafting objects and actively involve different parts of my body in the creative process. This shift in working environments allowed me to develop spontaneous interactions between objects, the body, light and space. Involving my body movements and engaging my sensory experience in the object-making process inspired me to develop performance approaches for developing my design and creative ideas. This presented challenges in terms of developing new skills, working with different materials and actively engaging my body in the creative process, which is very different from my previous experience in jewellery making. I will reflect on and discuss these aspects in greater detail in Section 6.2.

4.2.4 Conclusion

My initial exploration of light-reactive materials, the new working experience within the theatrical environment and the transformation of my bodily experience from the jewellery bench to the theatrical space laid the groundwork for developing the *Touch*

the Light pilot project. In the next studio project, I invited a small group of audience members to interact with the light-reactive installation and wearable objects. This introduced an intriguing interplay between playing and making, as well as interacting and performing. Involving the audience in the creative process added new layers of complexity and engagement to my work.

Phase Two: Exploring Performance Art Methods

4.3 *Touch the Light* pilot project

4.3.1 Aim and description

The *Touch the Light* pilot project engaged students and staff from the architecture department at BCU. It took place in August 2019 at the Shell Gallery, which is in BCU's Parkside Building. This workshop aimed to encourage audience participants to interact with objects and contribute to the creative process by adopting installation art as a method of performance art. It also aimed to understand multisensory experiences through physical interaction with the installation and light-reactive material components. Various light-reflective materials were used to construct artefacts in different scales, including fabrics, tapes, plastic loops, mirrors, craft papers and recycled fluorescent-coloured materials.

4.3.2 Research process

The initial idea of the *Touch the Light* pilot project was to adopt the installation format for the audience to interact with wearable objects within a gallery space and create a sharable necklace. This idea evolved from my creative display method of presenting jewellery pieces at jewellery art fairs and exhibitions (Section 4.1.2) and the test piece (Section 4.2). Due to my jewellery design and making background, engaging the sense of touch has always been critical in the development of my artistic practice. This workshop aimed to challenge the “do not touch” taboo often associated with jewellery exhibitions in art galleries and museums. A similar situation also arises concerning art installations.

The experiment using light-reactive paint on wearable objects was unsuccessful in the test piece. I investigated light-reactive fabrics and tapes to improve this and achieve greater flexibility and interactivity between the body and materials. These materials were largely easier to work with when constructing and developing large-

scale installation structures and wearable objects. The fluorescent features of the materials' response to the light also presented an ideal visual outcome.

I set up the installation by attaching the tapes to the floor and initially constructed a grid-like pattern to visualise the relationship between the space and materials (Figure 4.3-1). Next, the pattern was structured onto adjustable riggings. When lifting the riggings, the pattern was transformed from a two-dimensional structure into a three-dimensional structure, creating a sculptural and wearable installation space. I secured the network structure onto adjustable riggings (Figure 4.3-2). Setting up the installation not only engaged my senses of vision and touch but also involved physical movements. Once the structure was set up in the space, I used my body as a tool to weave the ribbons through the artwork (Figure 4.3-3). To make the installation more interactive and wearable, fluorescent rings of various sizes were attached to the ribbons. These rings acted as improvisational elements or tools for the body to interact with (Figure 4.3-4).

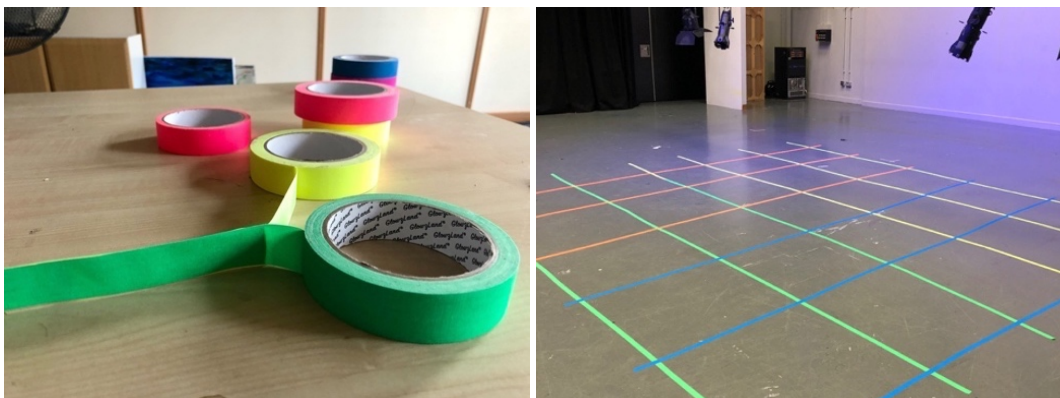


Fig. 4.3-1 Material exploration of neon-coloured fabric tapes (left). Measuring the space and layout of the materials on the floor (right).

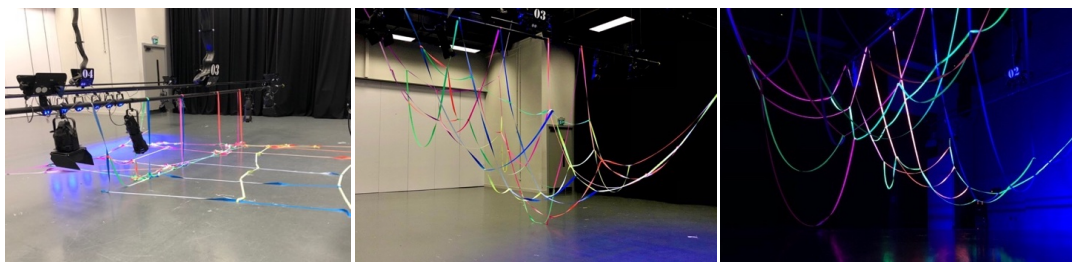


Fig. 4.3-2 An initial exploration of the light-reactive textiles and installation setup.



Fig. 4.3-3 Exploring the structure of the installation with my body.

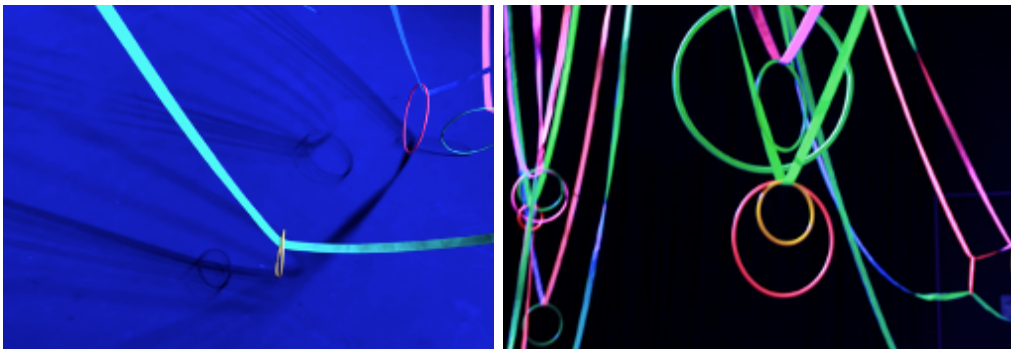


Fig. 4.3-4 Fluorescent rings were added to the installation structure.

Audience participants were invited to enter the installation space and explore and interact with the work after the installation's initial setup was complete. The difference between light and shadow created a strong visual contrast in the space, which made the participants' bodies less prominent in the dimly lit environment. As the audience interacted with the installation, the participants' bodies became traceable in the space, which added to the dynamic dimension of the installation (Figures 4.3-5 and 4.3-6).



Fig. 4.3-5 Audience participation.



Fig. 4.3-6 Audience participation.

4.3.3 Reflection

During the workshop, the audience participants spontaneously interacted with the installation. For example, some participants moved around in the space, picking up materials from one side of the installation and then dropping them on another side. By doing this, the participants actively recreated and reshaped the installation by intuitively weaving the light-reactive materials with their bodies. The engagement of their bodies in this process generated a fascinating interplay between installation art and wearable objects, blurring the boundaries between these two artistic forms. By

physically interacting with the light-reactive materials, participants became integral to the installation (Figures 4.3-7, 4.3-8 and 4.3-9). The participants were not only observers but also the artwork's co-creators and performers.



Fig. 4.3-7 The audience interacting with the artwork.



Fig. 4.3-8 The audience wearing and interacting with the installation component.

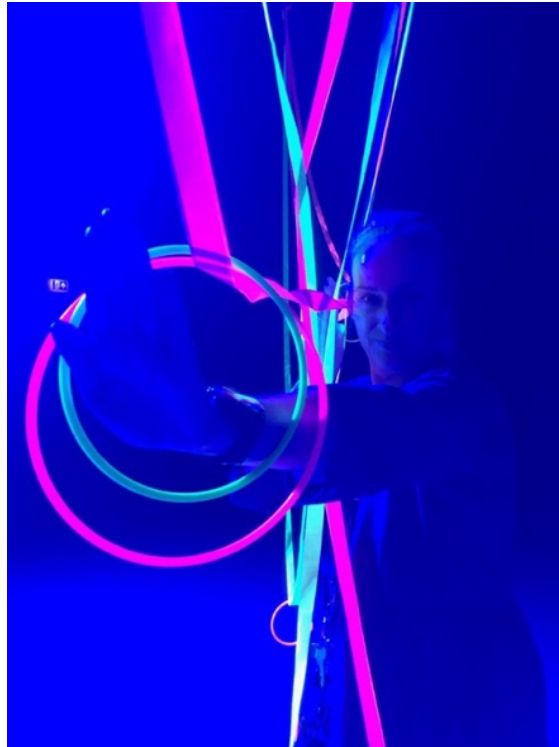


Fig. 4.3-9 The audience wearing the installation component.

The physical experience of the materials and the space transforms how the participants understand and interpret the installation. In this way, the audience plays the role of viewer-wearer-performer in this activity. As Bishop (2005: 24) highlighted, rather than “representing texture, space, light and so on, installation art presents these elements directly for us to experience”. Often characterised as theatrical, immersive or experiential, installation artworks engage viewers more closely, moving beyond the idea of passive, distant observation.

This notion demonstrates that installation art allows viewers to engage with the work on a more personal and sensory level, thus fostering a deeper connection with the artistic experience. Stern (2013) discussed how the body might function as a process and event and how its potential disruption and resistance could provoke and contextualise interactive art. The interactivity can be seen as an integral part of installation art. Stern (2013: 4) proposed that,

Interactive art frames moving-thinking-feeling as embodiment; here, “the body” is addressed as it is formed and in relation. Interactive installations amplify how the body’s inscriptions, meanings and matters unfold out, while the world’s sensations, concepts and matters enfold in. The work creates situations that enhance, disrupt and alter experience and action in ways that call attention to our varied relationships with and as both structure and matter.

My embodied sensory experience while interacting with the light-reactive materials shaped my understanding of my body, the light and the space. The creative process was based on my spontaneous interaction with the materials, light and space (Figures 4.3-10 and 4.3-11). This process can be referred to as the moving–thinking–feeling process, which Nathaniel Stern proposes in his book *Interactive Art and Embodiment: The Implicit Body as Performance*. Stern (2013: 2–4) noted,

When we move and think and feel, we are, of course, a body. This body is constantly changing, in and through its ongoing relationships. This body is a dynamic form, full of potential. It is not “a body” as thing, but *embodiment* as incipient activity. Embodiment a continuously emergent and active relation. It is our materialization and articulation, both as they occur, and about to occur. Embodiment is moving–thinking–feeling, it is the body’s potential to vary, it is the body’s relations to the outside. And embodiment, I contend, is what is staged in the best interactive art.



Fig. 4.3-10 The moving–thinking–feeling process.



Fig. 4.3-11 Thinking and feeling the materials.

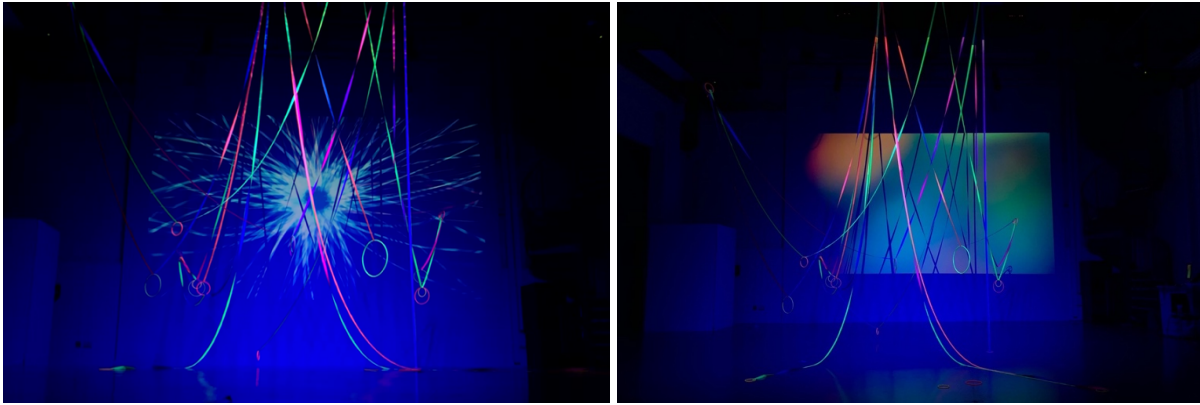


Fig. 4.3-12 The overall effect of the installation.

4.3.4 Conclusion

Through a combination of light-reactive materials, light, space and audience participation, the *Touch the Light* pilot project demonstrated great potential for theatrical and performing characteristics. The audience members were actively engaged in the experience, not only by performing within the installation as they navigated the space but also by contributing to the recreation of the artwork through tactile interaction with it. I further developed the idea of co-creating light-reactive installations with audience participants in the next workshop.

4.4 *Touch the Light* Workshop I

4.4.1 Aim and description

Touch the Light was a one-day workshop conducted on 5 February 2020 at the Shell Gallery at BCU. Six participants, students from BCU's architecture BA programme, were involved in this research activity. This workshop evolved from the *Touch the Light* pilot project and used installation art to explore the interactive relationship between the body, light and space through engaging light-reactive materials. It aimed to develop an in-depth understanding of the collaborative co-creation process with audience participants and experiment with a broader range of light-reactive materials, including fluorescent nylons, neon cords, ribbons and thread.

4.4.2 Research process

The participants were divided into three groups (A, B and C) and placed in different areas of the space. They were encouraged to use the materials to construct three-dimensional structures and explore the space around them. After an initial exploration of the materials, students became familiar with the light-reactive properties of the fabrics and threads and began working on their own ideas. Similar to the pilot project, this workshop employed theatre riggings to develop installation structures and explore three-dimensional structures (Figures 4.4-1, 4.4-2 and 4.4-3).



Fig. 4.4-1 Setting up the space.

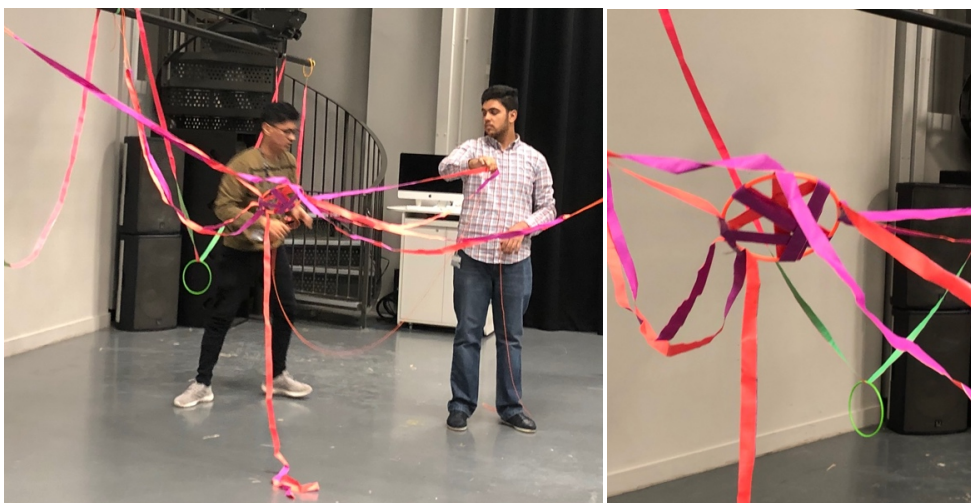


Fig. 4.4-2 Participants exploring and structuring the materials.

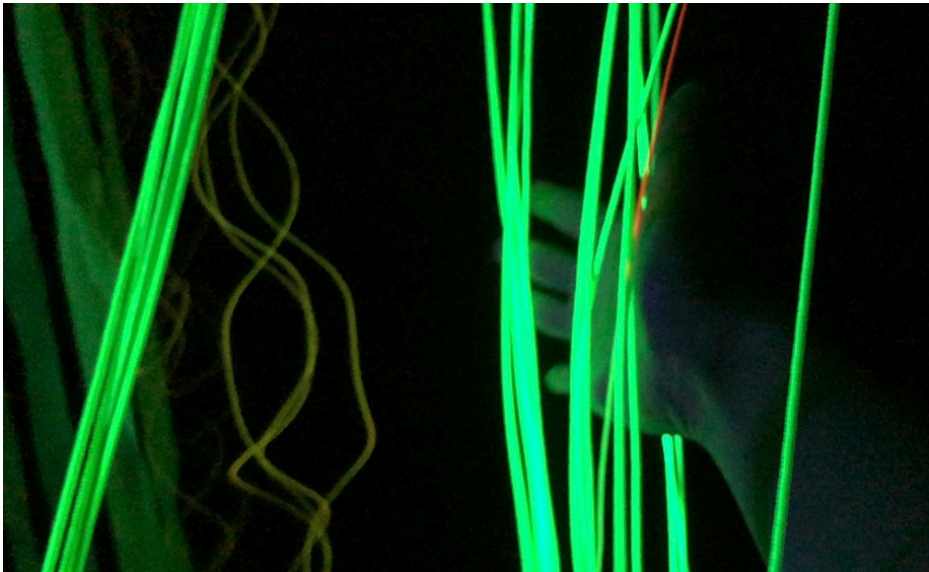


Fig. 4.4-3 Participants exploring the light-reactive material.

The three groups of participants created three different experimental outcomes. Participants in Group A used riggings and chairs to develop three-dimensional structures with a combination of light-reactive materials, ribbons, nylons and threads (Figure 4.4-4). Participants in Group B primarily worked with light-reactive threads and hung the ends of the threads on the riggings (Figure 4.4-5). Participants in Group C created an umbrella-like structure with a plastic ring as the central support for all the materials (Figure 4.4-6).

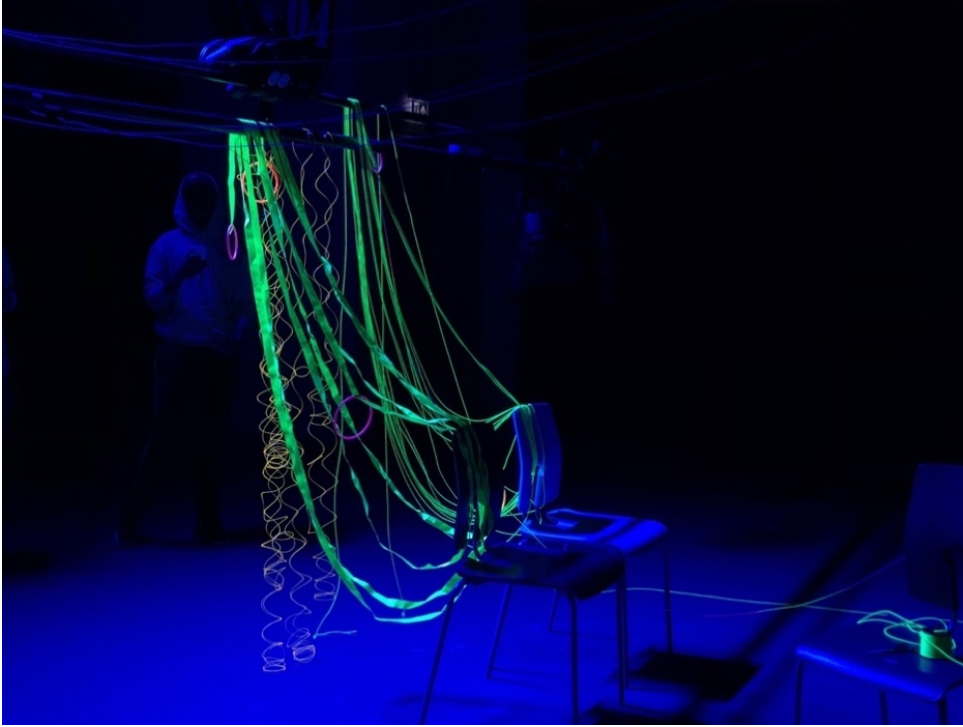


Fig. 4.4-4 Participant Group A.



Fig. 4.4-5 Participant Group B.



Fig. 4.4-6 Participant Group C.

After the workshop, I received feedback from participants regarding their experience working on installations using light-reactive materials. Most participants were captivated by the immediate responses and interactions between the body, light and luminous materials, which created a sense of spontaneity and a live experience in the making process. One participant commented, “As I move around the space, the light-reactive materials appear different to me. My perception of the materials is changing when I am moving.” Another student said:

At the beginning, I was mainly focused on the making and didn't think about the role of light in shaping the work. However, when the lights were turned off, it became apparent how my movements affected the changing colours of the work.



Fig. 4.4-7 The final outcomes of *Touch the Light Workshop I*.

4.4.3 Reflection

Due to the dynamic nature of the light-reactive materials and the physical interaction between the body and objects, the pleasure of making during the workshop was largely driven by the stimulus of “working through the unknown” and extemporaneous creation. As Cohn (2012: 37) stated:

The pleasure of making lies in playing with source materials to bring an idea to life. This involves working through the unknown. There is a tension between conceiving an idea, applying the right process and improvising to materialise an object.

Moreover, the studio is not a rigid place, a container for creative arts and materials, but an emergent space itself inherently creative and creating (Pacini-Ketchabaw et al., 2017). This environment encouraged collaboration and social interaction, enabling student participants to provide real-time responses and feedback during the studio making process.

During the creative process, I worked with participants to explore light-reactive materials, light and space. We engaged various parts of the body to understand how they influence the interplay between light, space and these materials. Figures 4.4-8 to 4.4-12 illustrate the experimental procedure of this engagement. We used different parts of the body, such as the finger, hand, head and neck, to interact with the

materials, resulting in an enhanced visual effect on the body. The wearable light-reactive materials not only visually empowered both the wearer and the viewer by drawing attention to specific body parts but also had an impact on their bodily experience in relation to the surrounding space.



Fig. 4.4-8 The co-creation process.



Fig. 4.4-9 Body invention of the light-reactive materials.



Fig. 4.4-10 The participants observed the light-reactive materials using a portable torch.



Fig. 4.4-11 Glowing ring by a participant.



Fig. 4.4-12 Headpiece by a participant.

4.4.4 Conclusion

Both workshops (the *Touch the Light* pilot project and *Touch the Light Workshop I*) emphasised the critical role of the body in activating, interpreting and performing with light-reactive materials. Observing how audience members playfully interacted with these installations was fascinating, which inspired me to investigate their theatrical and performative aspects. Additionally, collaborating with participants enabled me to actively engage in the creative process as both a maker and an observer, transforming the studio experience into an interactive exchange of emergent experiences and ideas.

4.5 *Touch the Light Workshop II*

4.5.1 Aim and description

During the COVID-19 pandemic in the UK, I was unable to access studio facilities such as the theatre space at the Shell Gallery and the RBC from March 2020 to

November 2022. Consequently, workshops and installations involving audience participation had to be postponed. Further, the planned workshops, designed to engage a larger group of participants, had to be cancelled due to COVID-19 social restrictions. To continue carrying out practical work, I adjusted my research plan to collaborate with a smaller group of performance artists and conducted a three-day workshop at the School of Jewellery. *Touch the Light Workshop II* built on the previous two workshops. It aimed to further explore the movement of the body in shaping and activating light-reactive materials, taking a performance art approach. Various activities, including solo performances with the installation and group performances, were carried out. This workshop involved two PhD researchers, Roxanne Korda (a librettist and opera singer) and Gwydion Calder (an actor) from the Royal Birmingham Conservatoire, as well as Jingya Peng, a postgraduate student in dance choreography at the University of Roehampton.

4.5.2 Research process

4.5.2.1 Setting up the installation

During the installation setup, I observed how the change in light in the exhibition hall transformed the perception of the space and the installation. The exhibition hall at the School of Jewellery is not completely enclosed, which meant daylight entered the space during the setup. Therefore, we waited until 4pm in the UK wintertime before starting the workshop. Figure 4.5-1 shows how the changing light shifted the visual perception of the space and materials from day to night. During the daytime, the colourful ribbons and structures blended into the background, surrounded by shelves and panels. As night fell, the projected area slowly lit up, and the shelves and panels faded into the space. The entire space became relatively dark and enclosed (Figure 4.5-1).



Fig. 4.5-1 The change of light in the exhibition hall during the installation setup.

4.5.2.2 Solo performance – day 1

Following the movement in the installation area, the entire piece of work moved with the sway of the dancer's (Jingya Peng's) body and merged into a range of patterns and forms. Since none of the materials were fixed to the ceiling frameworks, all the ribbons could be pulled and adjusted freely by the dancer. Peng described how she imagined herself as a bug trapped in a spider's web during her performance. This web was like her playground, and she enjoyed the feeling of her body being trapped in this web and being able to reconstruct the web through her performance (Figures 4.5-2 and 4.5-3). In this context, the overall presentation of the dancer's performance can be viewed as a reinterpretation of the interactive installation. The dancer communicated her bodily experience through explorative body movements in the installation by improvising interpretations of light, light-reactive materials and space on the spot. Her performance not only triggered the installation but also brought it to life.



Fig. 4.5-2 Exploring the installation work. Performance artist: Jingya Peng.

After finishing the initial exploration of the installation work, Peng commented that fully engaging her body with the light-reactive materials was a very sensual and pleasurable experience for her. As the installation area presented a strong contrast to the other areas of the space, she could entirely immerse herself in these colourful lines. The dancer further commented that when she entered the installation, although the visual presentation of the materials was very responsive to her movements, her body needed some time to locate itself in the installation area due to the lack of light, adding that through physically interacting and manipulating the materials, her body felt more confident and adaptive in stretching and moving around. She also found the installation somewhat restrictive and typically centred on her performance. She suggested dancing with a single ribbon to explore the spatial relationship between her body and the material, which could offer her greater flexibility of movement. Figure 4.5-4 illustrates a range of selected video clips that captured how the light-reactive materials traced the dancer's body movements in the dark space.

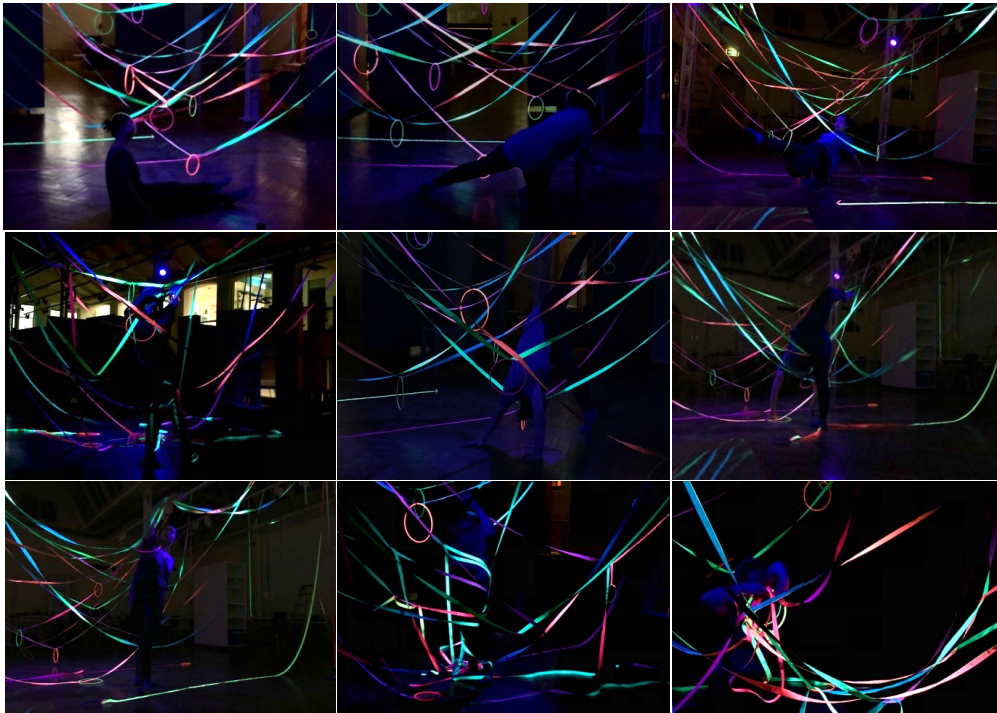


Fig. 4.5-3 Video clips of the performance. Performance artist: Jingya Peng.

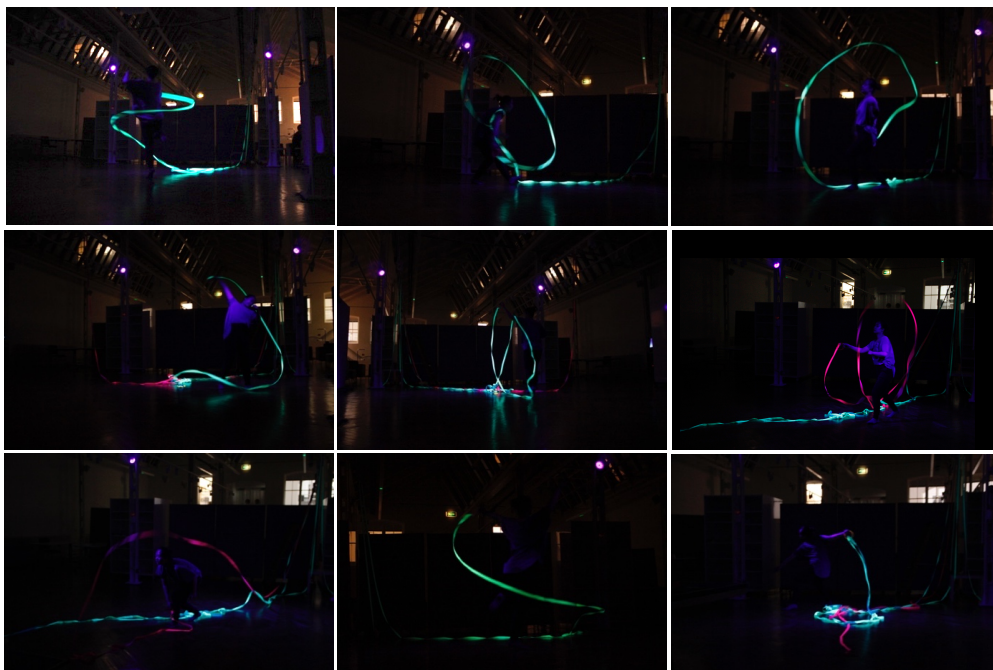


Fig. 4.5-4 The dancer performing with fluorescent ribbons.
Performance artist: Jingya Peng.

4.5.2.3 Group performance – day 2

The workshop on day 2 focused on examining the interactive relationship between the light-reactive materials, the body and space through working collaboratively with Roxanne Korda, Jingya Peng and Gwydion Calder. This collaborative work further transformed the installation piece (Figure 4.5-2) created on day 1 into a performance piece. Since the performance artists come from opera, acting and dance choreography backgrounds, they suggested integrating a simple story into the performance. During the discussion, I shared my initial inspiration for the *Touch the Light* installation series, which was derived from the sea creature-inspired jewellery collection *Go with the Glow*. Based on a preliminary conversation between myself and the performers, as well as their understanding of the light-reactive installations, the performers decided to take on roles of creatures fighting for territorial space. The performance was still centred on the performers' spontaneous interactions with light-reactive materials, light and space but with the added twist of a storyline that could create dramatic tension. The images in Figures 4.5-5, 4.5-6 and 4.5-7 capture the performers as they work through the rehearsal process.



Fig. 4.5-5 Rehearsals. Performance artists: Roxanne Korda, Jingya Peng and Gwydion Calder.



Fig. 4.5-6 Rehearsals. Performance artist: Roxanne Korda.



Fig. 4.5-7 Rehearsals. Performance artist: Roxanne Korda.

After the rehearsals, the performers started their explorative performance. As they were dressed head to toe in black, they could only be perceived as three silhouettes moving in space, alternately showing up and then fading back into the darkness. This created the illusion that it was the installation or the objects themselves that moved and were dancing or trying to speak to each other. Moreover, as the performers spontaneously reacted to the luminescent materials, the dark environment, the rubbing sound (created by material friction), zones of tension and relaxation, advance and retreat, rhythmic pulsation and quiescence were manifestly created. Bodies responding to the manifold relationships between them were beautifully outlined and given expression by the coloured and illuminated ribbons. By the end of the performance, it was patently obvious that the territorial battle had ended with a single winner (Figure 4.5-8).

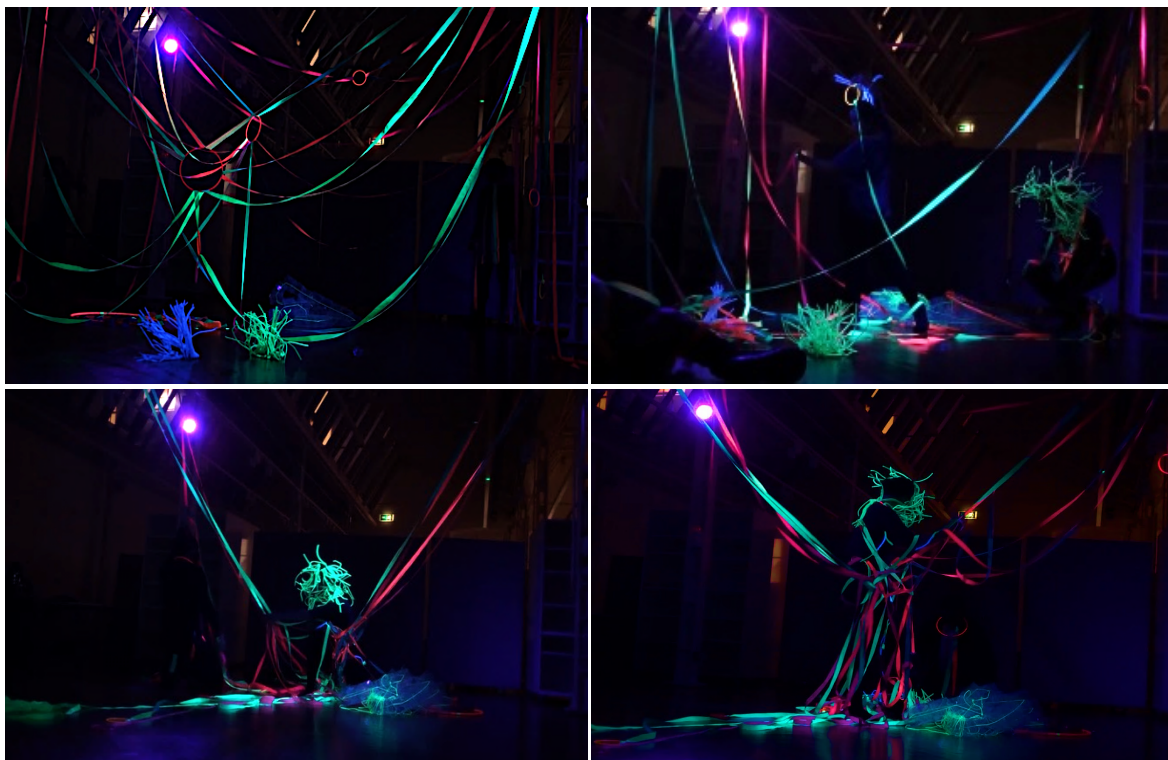


Fig. 4.5-8 Video clips of the group performance. Performed by Roxanne Korda, Jingya Peng and Gwydion Calder.

The performers transformed the space into a laboratory by exploring the materials, installation structures, and different arrangements of objects. They improvised their body movements by pulling, pushing, interacting, touching, playing, wearing,

exploring, and responding. All the materials were gradually removed from the ceilings during the performance and became 'war trophies' worn by the winner. It was a fascinating process to observe the intense battle and the interactions between the performers. The process of the entire performance transformed the installation piece into a wearable and costume object (see Figure 4.5-9).



Fig. 4.5-9 The costume. Performed by Roxanne Korda.

4.5.2.4 Wearable objects – day 3

The impetus for exploring wearable objects was derived from my observation of how the performers spontaneously interpreted the light-reactive materials and generated a range of emergent and ever-changing art forms somewhere between art installations, wearable objects and costumes. For example, some installation artworks can be perceived as costumes due to the way the performers manipulated the materials during the performance. This inspired me to further explore these light-reactive materials as body adornments. During this workshop, I worked with Peng to

create a range of wearable and interactive objects. Before creating the items, I presented some of my work from the jewellery collection *Go with the Glow* and invited her to play with the pieces (Figure 4.5-10). After some discussion, the dancer and I decided to focus on scaling up some of my jewellery pieces. The experience of being involved in the making process gave the dancer a better understanding of the material properties of the light-reactive materials and the atmospheres created by light and darkness. This also facilitated her subsequent performance and the interpretations of co-created wearable objects.

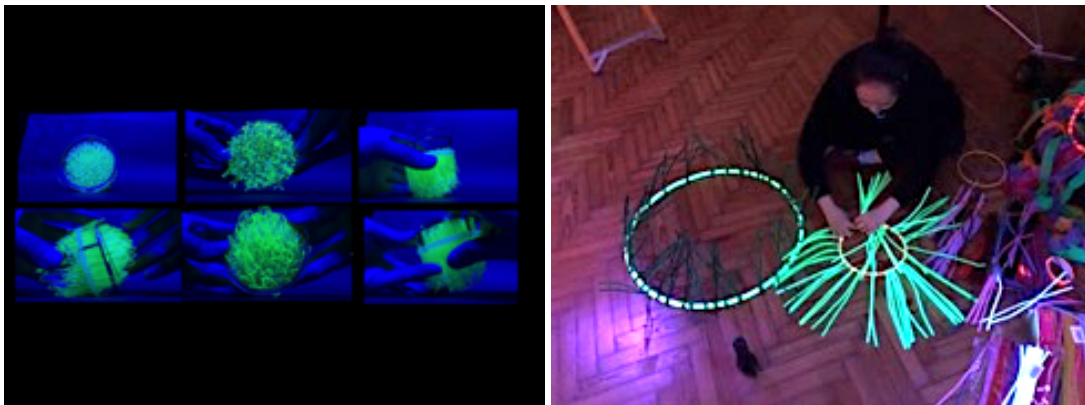


Fig. 4.5-10 Collaborative work in progress: Scaling up the object with Jingya Peng.

The dancer started her explorative performance with wearable prototypes (Figure 4.5-11), involving the whole body in exploring and interpreting the work with her arms, head and torso. She brought her own sensibilities and emotions to the work through her body movements. As she commented, “I imagine myself as part of the work, like the seagrass or any plant. My arm is growing from it, and the darkness is the soil.”

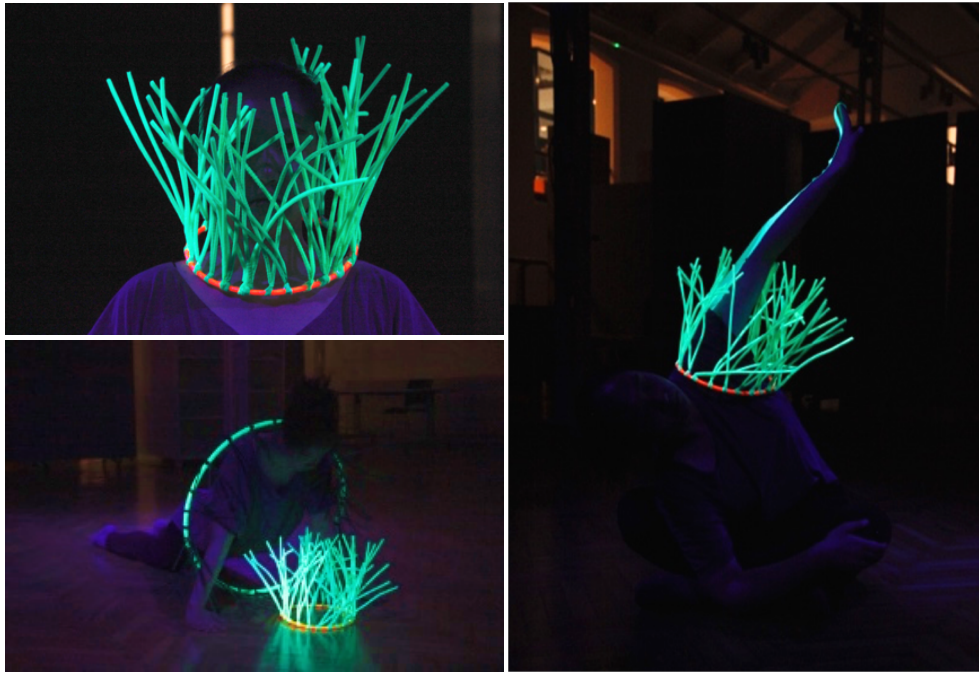


Fig. 4.5-11 The dancer (Jingya Peng) exploring the work.

The *Dancing Jellyfish* (Figure 4.5-12) was another piece that I worked on together with Jingya Peng. The 'jellyfish' was made of neon-coloured ribbons, with all the materials attached to a red hula hoop. To make it look more like a jellyfish, fluorescent green fabrics were attached to the ends of the ribbons so that both the work and her performance would be more traceable in the dark. These little green dots were bright and lively, chasing the dancer's body and moving as her body moved. The dancer's body sometimes disappeared into the darkness, leaving the jellyfish to dance alone in the sea.



Fig. 4.5-12 *The Dancing Jellyfish*. Performed by Jingya Peng.

Fluorescent fabric strips, a hula hoop wrapped with neon-orange fabric.

The *Ice Cube* necklace (Figures 4.5-13 to 4.5-15) was inspired by the neon glow of ice sculptures and ice lanterns I encountered during my visit to the Harbin International Ice and Snow Sculpture Festival (as discussed in Section 4.1.3). Drawing from the light-emitting installations made of ice blocks at the festival, I designed a neckpiece that consisted of 50 recycled transparent plastic packing boxes. These boxes were connected by a fluorescent green cord, resulting in a 4.5-metre-long necklace or wearable installation piece. The fluorescent green string pierced these ice cubes, emitting a bright glow in the darkness.

Due to the length of the necklace, at the beginning of Peng's performance, it took her some time to adjust to its weight and material. After some exploration, she found her balance (Figure 4.5-15). The collision of the beads created an interesting sound during the performance. She interacted intimately with the object through various movements, such as swinging, stretching and adjusting the beads to balance her body. On completing her performance, Peng commented:

It was entertaining to interact with the work. Wearing such a long necklace was a challenge, but I found flexibility and balance in my body by engaging every muscle, from my neck to my feet. After finding my

body's balance, I almost forgot about my performance and became completely immersed in playing with the object.

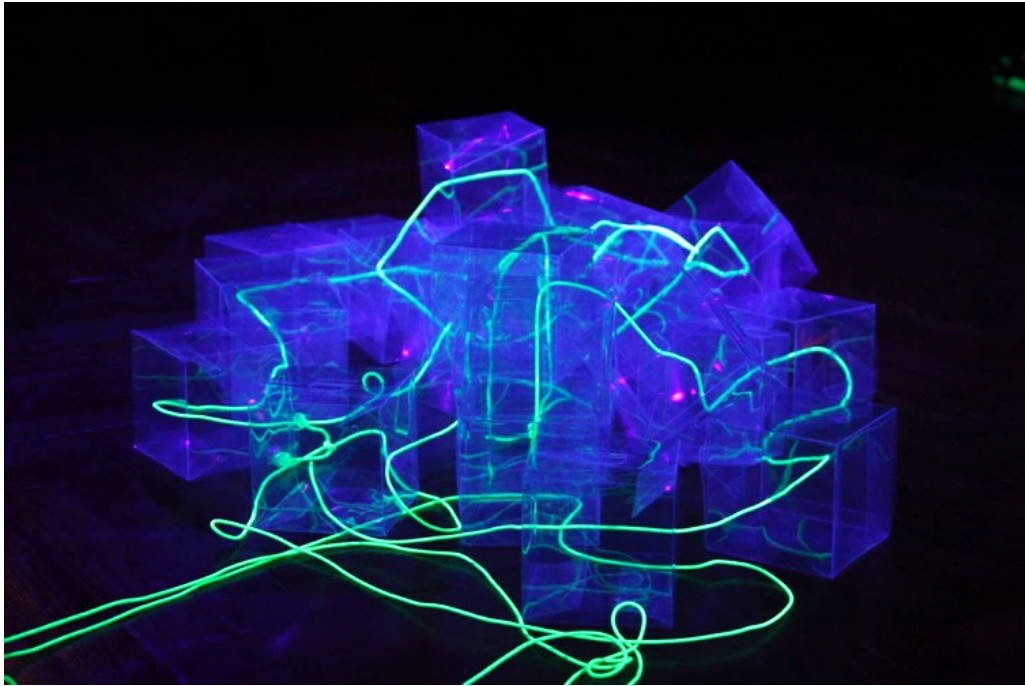


Fig. 4.5-13 *The Ice Cube necklace* (2020).

Recycled plastic packing boxes and fluorescent green cord. Length: 4.5 metres.

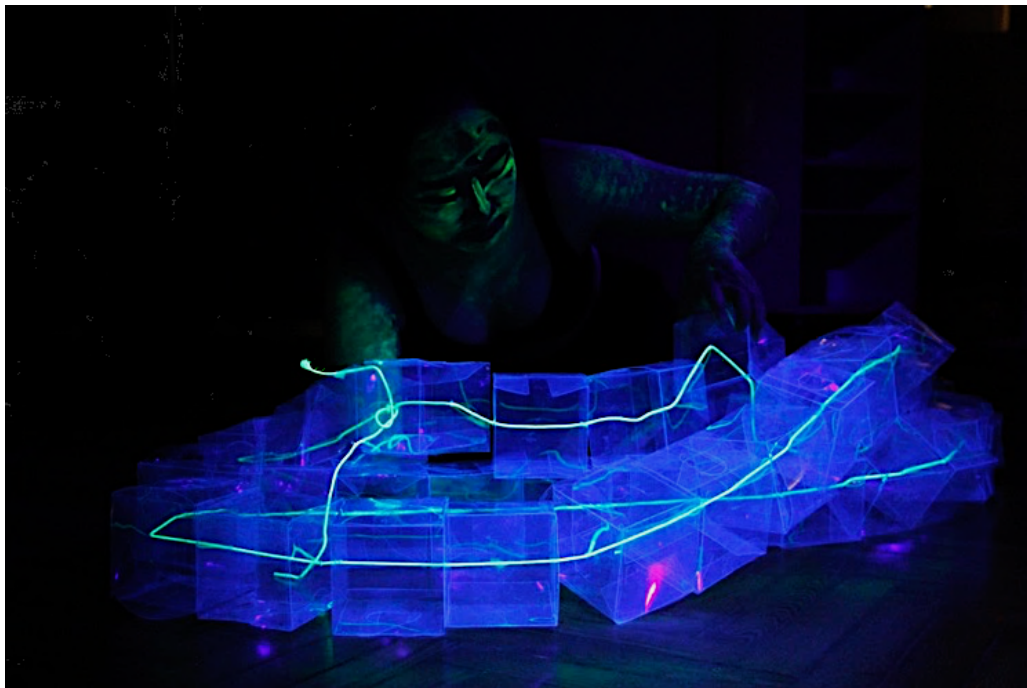


Fig. 4.5-14 The dancer (Jingya Peng) exploring the work.

Recycled plastic packing boxes and fluorescent green cord. Length: 4.5 metres.

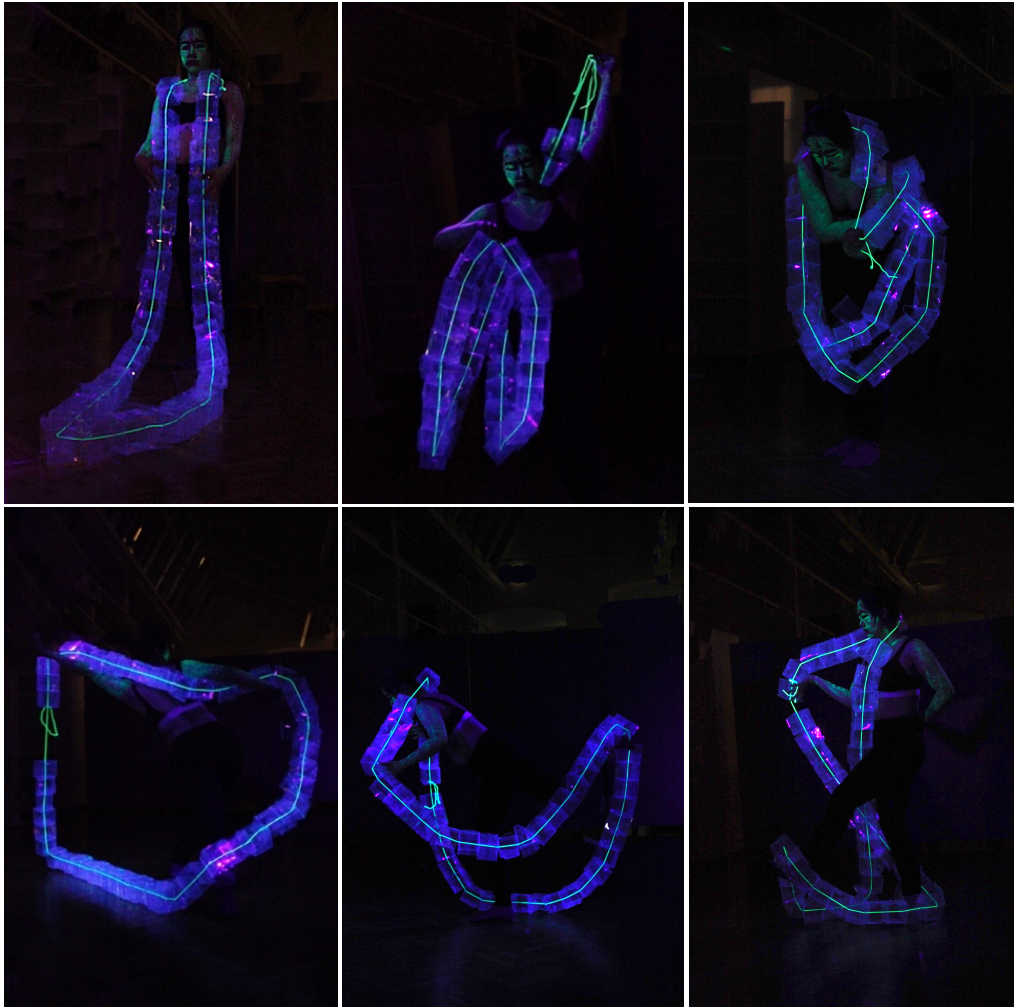


Fig. 4.5-15 The dancer (Jingya Peng) exploring the glowing necklace.
Recycled plastic packing boxes and fluorescent green cord. Length: 4.5 metres.

4.5.3 Reflection

Working with light-reactive materials creates a spontaneous and improvisational creative process due to the interaction between the body, the materials and the light. The performers improvised their performances based on their understanding of the light-reactive installations, light-reactive materials and the contrast between the light and darkness in the space. Improvisation is an essential aspect of performance art that enhances creativity, spontaneity and collaboration among performers. Improvisational theatre techniques can be used to enhance creative thinking and action in a variety of disciplines (Hackbert, 2010). Bertinetto (2011) contended that, contrary to being viewed as anti-artistic due to its perceived unfinishedness, unpreparedness and inaccuracy, improvisation in performance art serves to embody

and catalyse artistic creativity. The dynamic and ever-changing art forms facilitate improvisational methods. For example, in the group performance on the second day, the performers transformed the installation, which was made of light-reactive fabrics, into a costume during the improvisational process.

Moreover, *Touch the Light Workshop II* can be viewed as a good response to the 'co-reflection through co-creation' (Candy, 2019: 234), and the co-reflection effectively facilitated the evolution of the creative process. As my collaborators and I are from different disciplines, namely dance choreography, performance art and jewellery, working together means stepping out of our comfort zones and adopting different ways of working and thinking. Situated at the intersection of performance art, installation art and jewellery, the co-creation process enabled me to participate in the development of dance choreography, performance, rehearsal and the design of the story plot before integrating these elements into the making of wearable objects. Simultaneously, the dancers and performers were involved in making and designing the installation and body-related artefacts, which they interpreted in their performance. We were able to share the challenge, negotiate different opinions, provide real-time feedback to each other and transform our expertise from different fields into co-created artistic practice. Although we contributed to different perspectives of the creative process, we shared the same goal: to investigate the relationship between the body, object and space, which provided the impetus for our collaboration.

4.5.4 Conclusion

Collaborating with dancers and performers enriched the research project by introducing performance and dance choreography elements to my studio practice. The co-creation process with performance artists offered invaluable learning experiences in choreography, improvisation and creative collaboration. After the workshop, a semi-structured group interview with the performance artists was conducted to gather feedback on their experiences. The detailed findings from the group interview will be presented in the Findings chapter.

Phase Three: Collaborative Performances

The third phase of my studio practice is centred on introducing and reflecting on a collaborative performance project with researchers and artists from performance art. This collaboration with dancers and performers is complex as it comprises a series of experimental and collaborative projects that vary in size and scope. To guide the reader through this research process and enable a better understanding of the different types of art forms that emerged from this process, the artworks are introduced in three categories: *Wearable Objects* (Section 4.6), *Wearable Installations* (Section 4.7) and the *Tree Opera* project (Section 4.8). The sequence of these sections is based on the research timeline for the development of the performance project. This phase aimed to conduct an in-depth investigation of the performative and theatrical characteristics of art forms that emerged from *Touch the Light Workshop II* and further elaborate and expand on the co-creation and co-reflection process with performance artists. The artefacts developed from previous workshops were further integrated into different performance projects in this phase. Further experimentation with different types of light-reactive materials, which vary in texture, weight, size, etc., was also conducted throughout phase three.

4.6 Wearable objects

4.6.1 Aim and description

Based on the insights and experiences gained from *Touch the Light Workshop II*, I began to investigate the performative and theatrical characteristics of artefacts that emerged from the workshop and transform them into a new collaborative project. The positive feedback engendered by the collaborative performance, as well as the creative artefacts generated from the preceding workshop, served as the impetus for the new project. The aim was to evolve *Touch the Light Workshop II* into a larger performative event that would include opera singers, dancers, musicians, etc.

The new project was inspired by a story-based theatrical performance created by Roxanne Korda from the Royal Birmingham Conservatoire. She was also one of the participants in the group performance during *Touch the Light Workshop II*. Korda

wrote the story of *Tree Opera*, which presents a complex network of interrelations, depicting how roots, fungi, bacteria, etc., all help to connect trees in terms of likes and dislikes, attraction and aversion, sending information about nutrition or signalling invasion when other species enter or otherwise threaten the shared ecosystem. The mysterious subterranean world depicted in *Tree Opera* shares some of the same inspiration as my sea creature-inspired jewellery and the immersive *Touch the Light Workshop II* installation work. Thus, at the explorative phase of this collaborative project, I worked more freely to test a range of light-reactive materials with dancers.

An opera project normally includes many complex elements, such as a composer and librettist, as well as acting, scenery, costume, dance choreography and lighting design. My role in this collaborative project was to develop wearable objects and installations through performative and theatrical approaches. The creative process focused on closely working with dancers throughout the project and observing the interactions between the dancers and the object, light and space by inviting them to enter different scenarios in a theatrical context. Working with light-reactive and elastic materials that allow the dancer to explore the artefacts as freely as possible using their body and the space was at the heart of the studio practice throughout this performance project. This expansive collaborative project was carried out in three different locations in Birmingham – the Shell Gallery, RBC, and RoguePlay Theatre in Digbeth – between May 2021 and August 2021.

4.6.2 Research process

4.6.2.1 Exploring costume design ideas

In *Touch the Light Workshop II*, I received feedback from the dancers that they would prefer wearable objects and designs that would give them greater freedom of movement when interacting with objects in a performance space. To maximise the performers' freedom of interaction with objects during the performance, I opted to experiment with an all-black costume. I designed a head piece adorned with fluorescent decorations, serving as a compromise between my experience in jewellery making and my foray into costume design. Given the vibrant colours and striking visual impact of fluorescent materials, I decided to capitalise on these advantages by creating wearable items inspired by bioluminescent fungi. I

experimented with sewing fluorescent rubber beads onto the head of a black skin morphsuit to intimate the glowing effect of fungi (Figure 4.6-1).



Fig. 4.6-1 Material exploration. Fluorescent rubber beads and a black morphsuit.

Figure 4.6-2 demonstrates the explorative process undertaken by the dancer wearing the headpiece. As the dancer's body was completely covered by the morph suit, she had limited vision, so she felt more secure when performing and moving close to the floor. She said that the experience of wearing a black suit that completely covered her body made her feel like her body was immersed in darkness. Therefore, she decided to close her eyes for the duration and enjoy the tactility of the performance. This made her feel and think like a creature exploring its surroundings with curiosity and caution. Moving slowly and carefully, she detected the surrounding space with her tentacle-like head. The costume design made the dancer focus on how her body felt, but with the tactile experience being largely confined to the head and surrounding area, there were few opportunities for interesting and meaningful interactions with other possible objects inhabiting the same performance space. Therefore, to create more interactions between the body, object and space, I sought to develop the tentacle design in the subsequent costume experiment to produce a more tactile and interactive experience for the dancer. I wanted an experience that gave greater flexibility to the dancer's creative imagination and directed their focus to more than just the head.

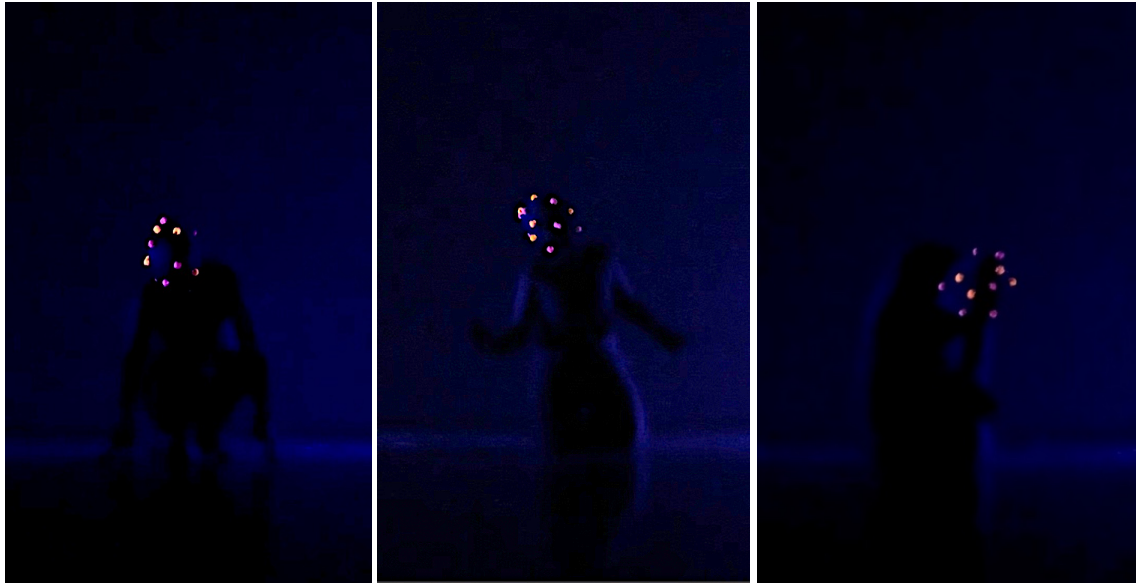


Fig. 4.6-2 *The Fungus* (2021). Fluorescent rubber beads and a black morphsuit.
Performed by Jingya Peng.

Taking inspiration from marine life, particularly betta fish with their long, soft tails, I created tactile and interactive components using black zip ties, embellished with green neon sticky paper labels, to imitate the fluorescent skin of the fish (Figures 4.6-3 and 4.6-4). These materials were constructed into two separate pieces: a headpiece and a neck/body piece (Figure 4.6-5).

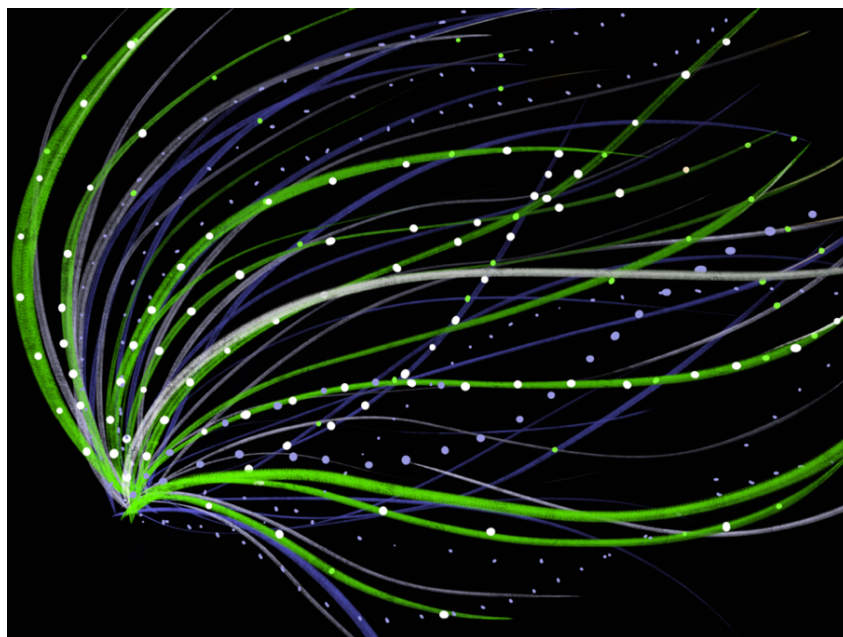


Fig. 4.6-3 Digital drawing.



Fig. 4.6-4 Design sketch.



Fig. 4.6-5 Costumes in progress.

The images in Figure 4.6-6 depict the dancer exploring the costume. The costume's design as a wearable object surrounded the dancer's body, ostensibly changing the focus of her attention via a plethora of sensory stimulation. During her performance, the dancer interacted with the costume, causing the zip-tied parts to collide and make quiet noises in time with her movements. As the zip ties were black, the blue

light made the fluorescent green visually stand out in the space while hiding the black zip ties in the darkness. The fluorescent components traced the dancer's movement in the space like a dancing betta fish moving its beautiful tails under the deep sea. Afterwards, the dancer, commenting on her interactive experience during the performance, stated that her body movement was "kind of in sync" with the sound. Her eyes were drawn to the colourful dots on her body as she moved, and the sound, produced by the costume during her movements, served as a metronome to assist her in coordinating her movements. Even though there was no background music, she created rhythmic sounds with the furnished accoutrements, filling the entire room with a stunning audio–visual display.



Fig. 4.6-6 *The Dancing Betta Fish* (2021). Performed by Jingya Peng.

Black zip ties and green neon sticky paper labels.

The Shell Gallery, Parkside Building, BCU.

4.6.2.2 *The Roots*

The Roots series of works were developed and inspired by *Tree Opera* (Figure 4.6-7). After creating a variety of wearable objects with zip ties, I decided to scale up the work so that it could potentially fit into one of the theatrical scenes for the opera project and be wearable and interactive at the same time. Inspired by the tactile, spiky, intertwined roots and the strong network they build underground (Figures 4.6-8 and 4.6-9), I started to work on prototypes using neon-green zip ties, constructing them into a neckpiece (Figure 4.6-10). In the finished piece, the neck was surrounded by the work, which outlined the shape of the body. The moving elements of the zip ties replicated the texture of the jewellery that I had created for the *Go with the Glow* jewellery series. This inspired me to make a bigger, glowing, immersive object. To that end, I constructed a three-meter-long body adornment. The weight of the work increased with construction of the additional length, and it required some effort from the wearer to carry and manipulate it.

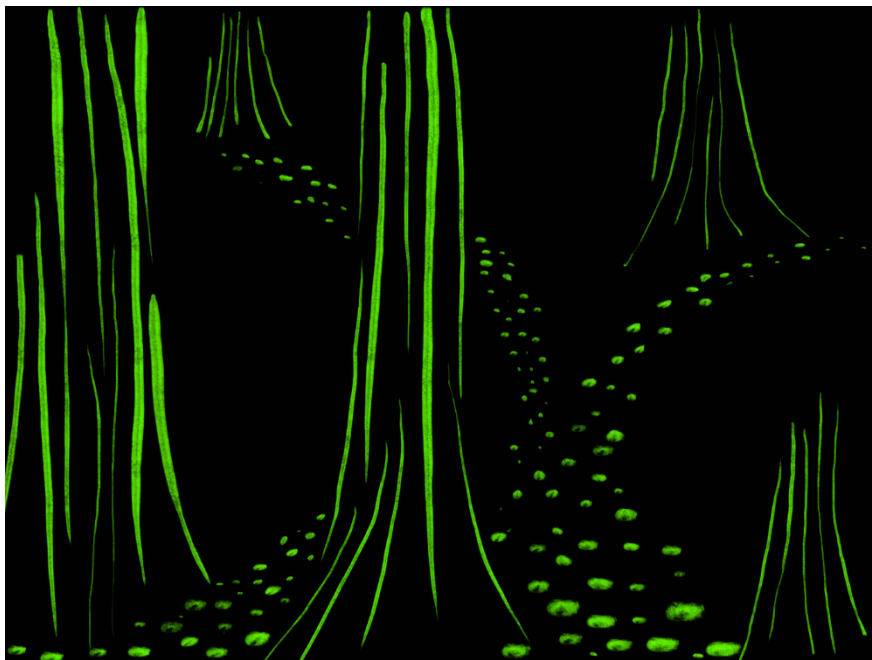


Fig. 4.6-7 Digital drawing of scenery design.

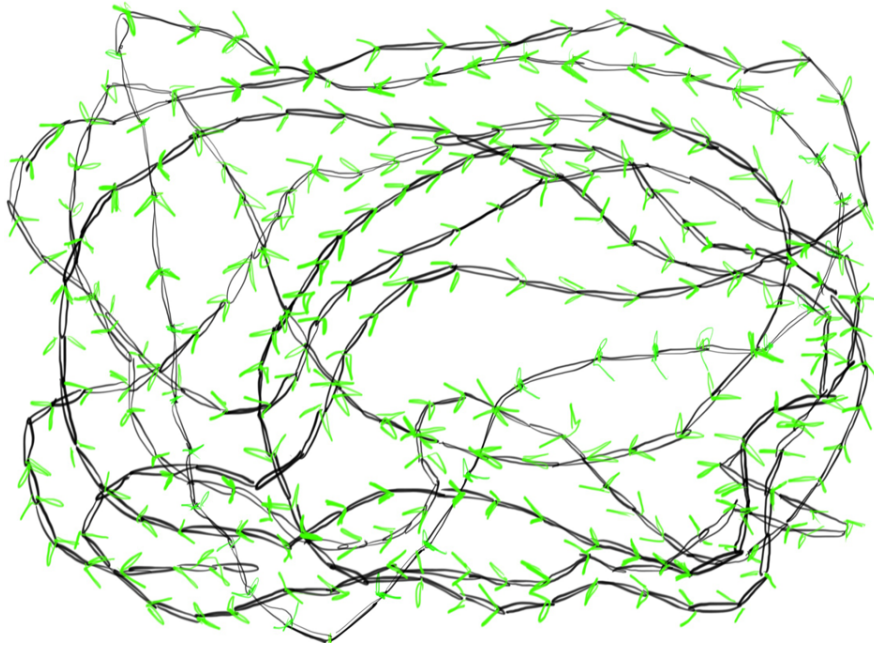


Fig. 4.6-8 Digital drawing.

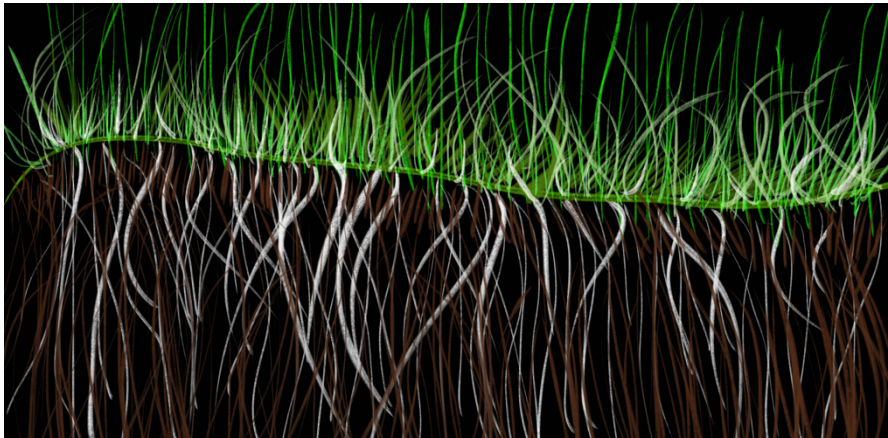


Fig. 4.6-9 Digital drawing.



Fig. 4.6-10 Exploring the neon-green zip ties.

After developing an initial prototype, the dancer was invited to create a performance showcasing the material's potential and range of movement. Throughout the exploration, the dancer's body was perceived as a negative space (Figure 4.6-11). The spaces surrounding the body became frames for the spatial compositions of the performance. The dancer's spontaneous interactions with the work brought emotions and sensibilities to the material, giving it a spirit and making it appear alive. However, the dancer encountered difficulty while wearing the long and heavy object. She described it as a battle between herself and the work, as the object kept falling down and sliding off her body.

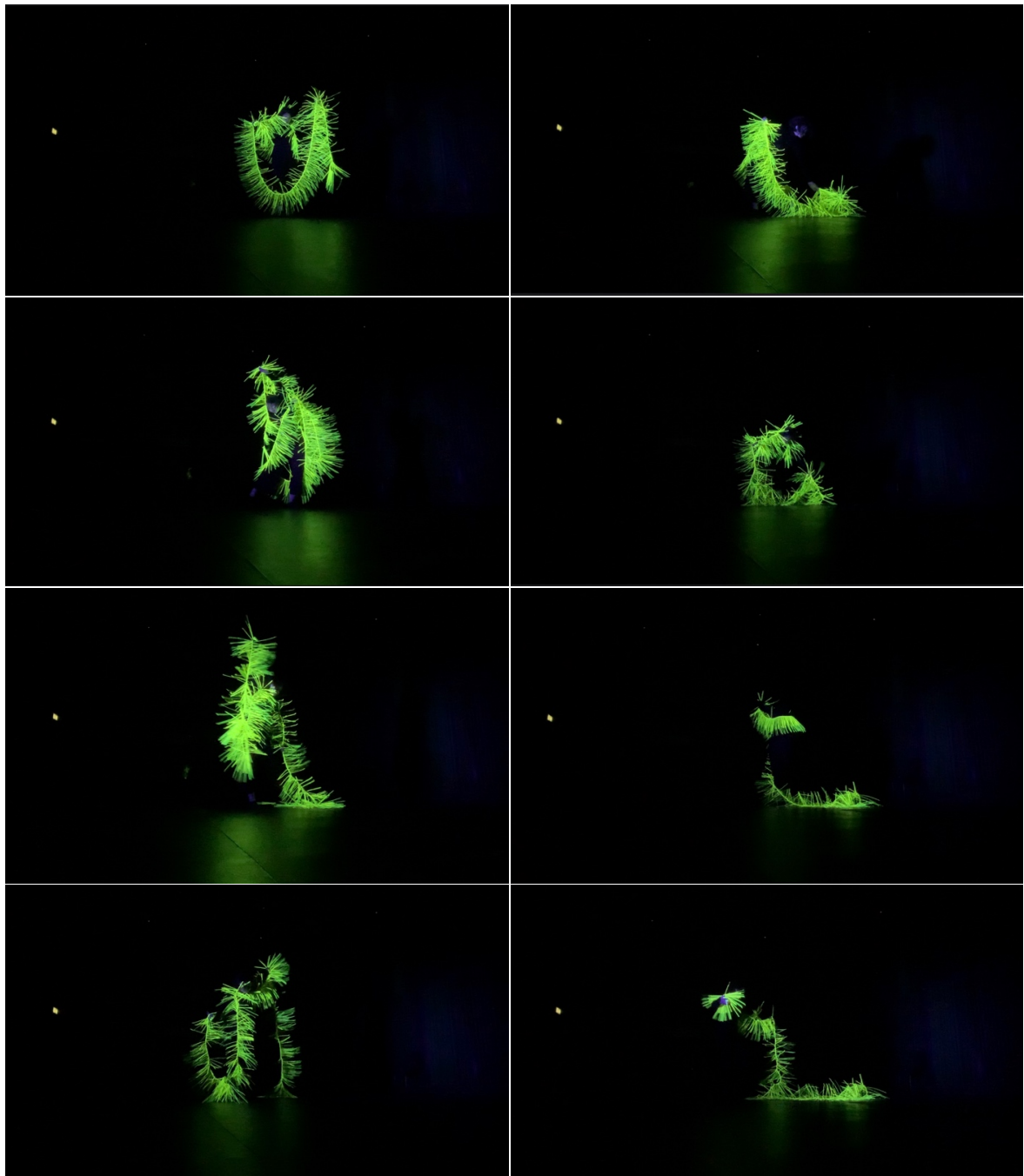


Fig. 4.6-11 *The Roots* (2021). Performed by Jingya Peng.
Neon-green zip ties and fishing lines. RBC.

4.6.2.3 *The Rainbow Tree*

Another design for *Tree Opera*, provisionally titled the *Rainbow Tree*, took its inspiration from the multicoloured trunks of eucalyptus trees (Figure 4.6-12). Again, utilising coloured plastic ties, this time of a shorter length, the object encased and extended the body shape, reconfiguring its silhouette and tracing its movements. The dancer's movements were also mirrored on the floor, creating a stunning rainbow of colours that were both brilliant and vibrant. When the dancer wore the piece, she had to balance her body. The interaction between the design and the dancer can be viewed as a kinaesthetic extension of the body. These kinetic movements are traced, painted and trailed by the light. The dancer transformed the piece into different shapes and structures with her movements; sometimes, she was wearing it on her body, and other times, she was manipulating it with her hands (Figure 4.6-13).



Fig. 4.6-12 Digital drawing.



Fig. 4.6-13 *The Rainbow Tree* (2021). Performed by Jingya Peng.
Fluorescent zip ties and nylon. The Shell Gallery, Parkside Building, BCU.

4.6.2.4 *The Tree Spirit*

I experimented with light-reactive ribbons and various hues to further develop the idea of entangled, intertwined roots. I also took inspiration from the nerves of plants as seen under the microscope (Figure 4.6-14). In this artistic experiment, the light-reactive ribbons were not constructed into any particular shape or form. Instead, the ribbons were worn by the dancer, and their natural movements showcased the silhouette of the body. In this case, the materials could conform and adapt to the dancer's body, resulting in a performance that was unique to their movements and body shape. This created a symbiotic relationship between the dancer and the materials, where the performer's movements were directly influencing the shape and form of the art piece (Figure 4.6-15).

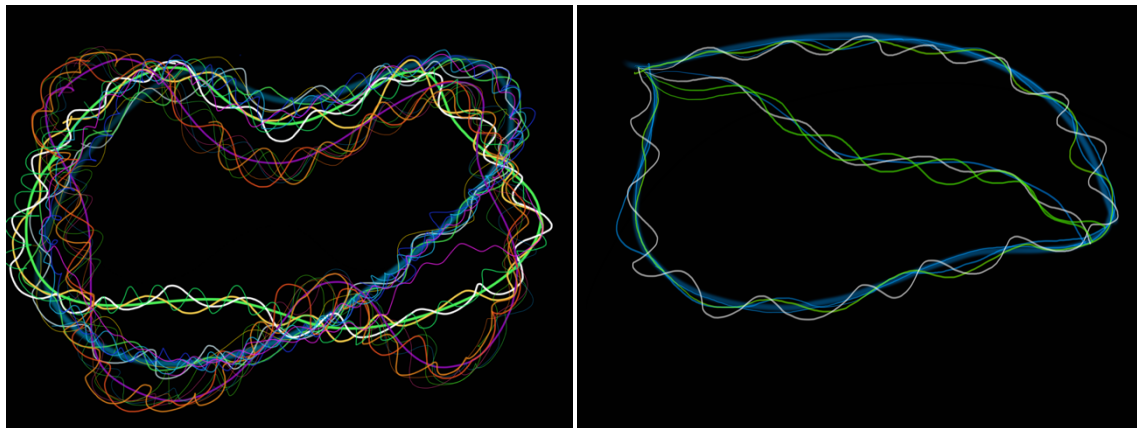


Fig. 4.6-14 Digital designs.

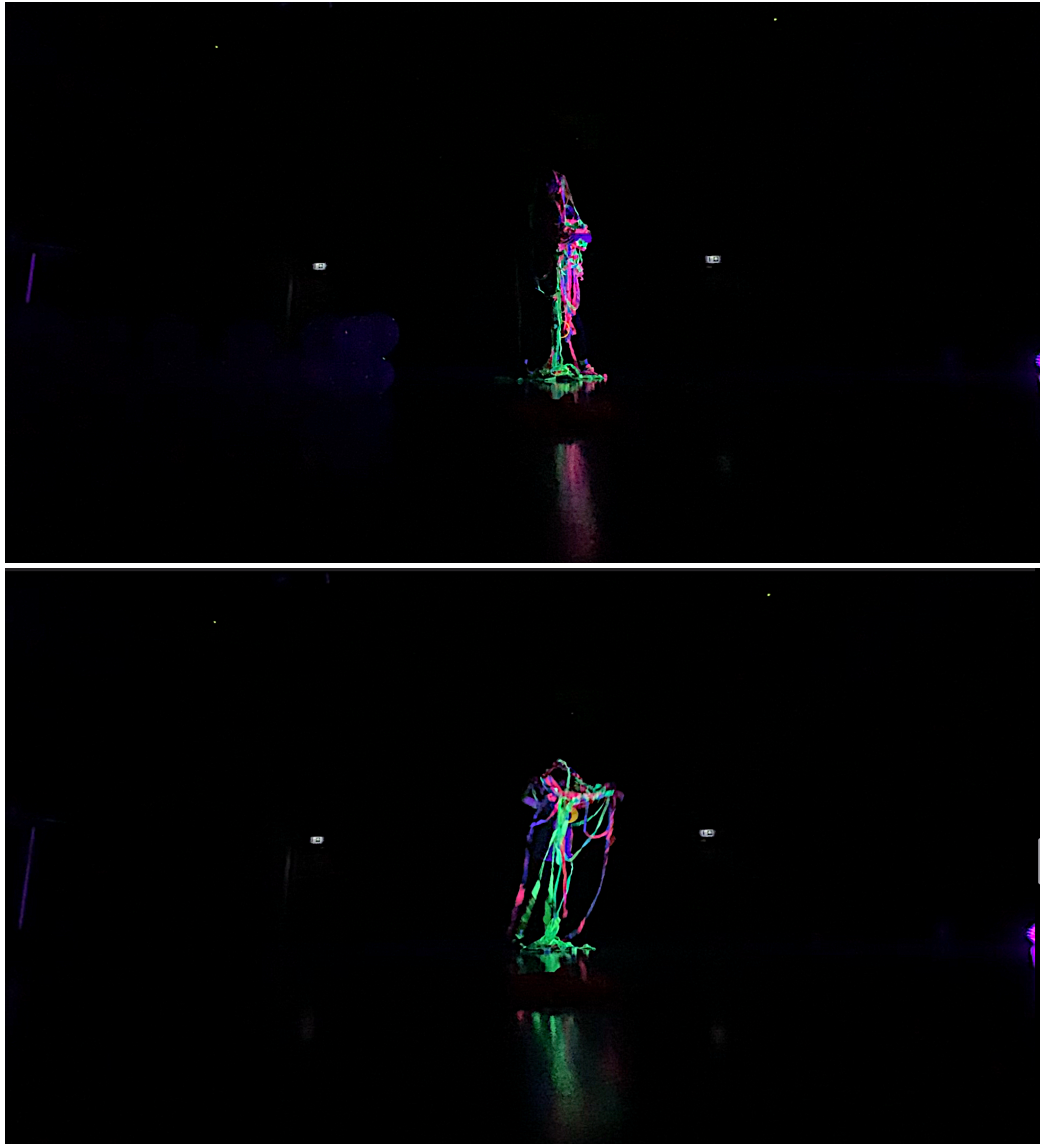


Fig. 4.6-15 *The Tree Spirit* (2021). Performed by Roxanne Korda.
The Shell Gallery, Parkside Building, BCU.

4.6.2.5 *The Falling Petal*

To expand the dimensions of the wearable object and gain a deeper understanding of how the body interacts with space when in a dynamic state, I collaborated with the dancer (Jingya Peng) to choreograph the following piece titled *The Falling Petal*. I decided to use a large, light-reactive fabric and observe how the dancer's body interacted with the artwork. The lightweight fabric was easily shaped by the dancer's movement and transformed into various art forms (Figure 4.6-16). The dynamic shape of the fabric became one with the dancer's body as she immersed herself in the space; the fabric followed the movement of the body and sculpted her shape.

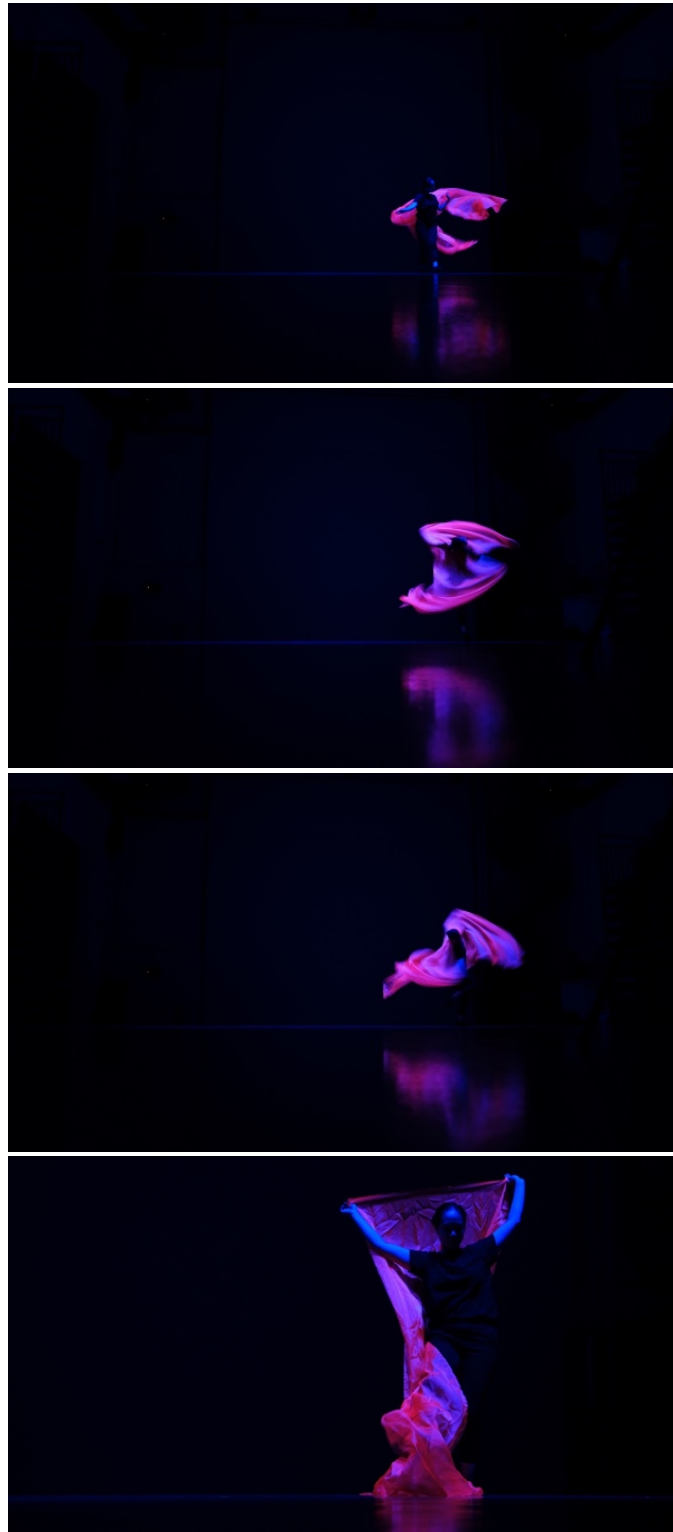


Fig. 4.6-16 *The Falling Petal* (2021). Performed by Jingya Peng.
The Shell Gallery, Parkside Building, BCU.

4.6.2.6 *The Cells*

I decided to experiment with different transparent materials under the light and try to improve the flexibility of the experience on the body when wearing the design. The idea of using balloons was inspired by the *Ice Cube* necklace, which was developed during *Touch the Light Workshop II* (Section 4.5.2.4). From what I learnt in the earlier workshop, the wearing experience of the *Ice Cube* necklace required the dancer to have good balance during the exploration. This time, I used balloons as the primary material to provide the dancer with greater flexibility to interact with the object. This work took inspiration from the movements of cells in plants (Figure 4.6-17). The texture of the balloons was unlike any other material that I have previously worked with, and their lightness and fragility required the body to move more carefully. The light visually altered the quality and texture of the balloons and the surrounding space (Figure 4.6-18). Although their original colour was white, under the light, the balloons appeared transparent. The light shone through, making them appear much lighter than they did in daylight. The balloons' reflections in the light evoked a fragile, bubble-like texture. Moreover, the lightness of the object gave the body more freedom to interact with the design and the space around it (Figures 4.6-19 and 4.6-20).

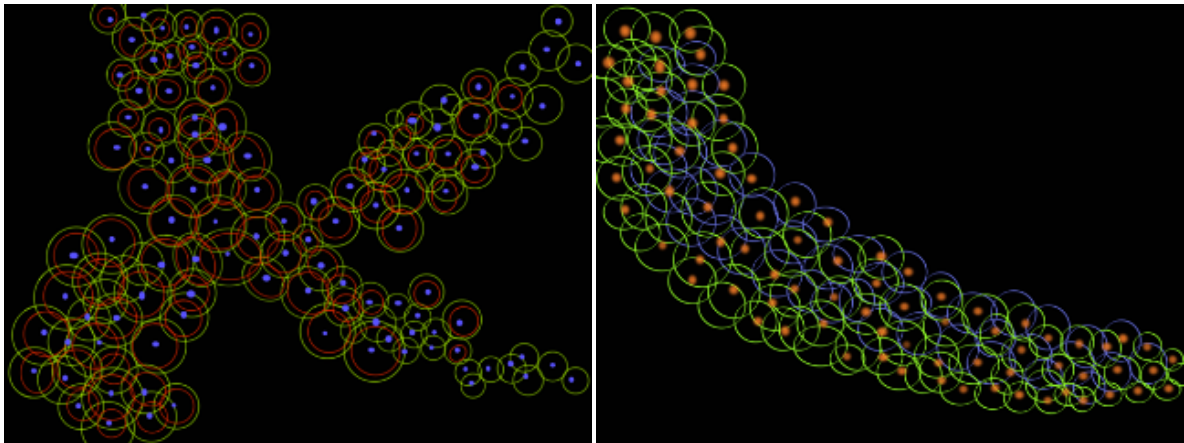


Fig. 4.6-17 Digital drawings.

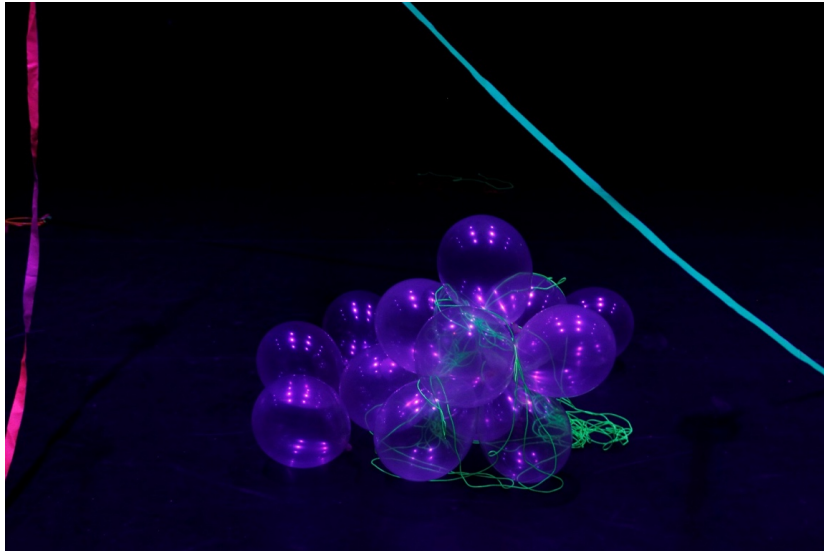


Fig. 4.6-18 *The Cells* (2021). Balloons, neon-green thread, fluorescent red and green sticky paper dots.

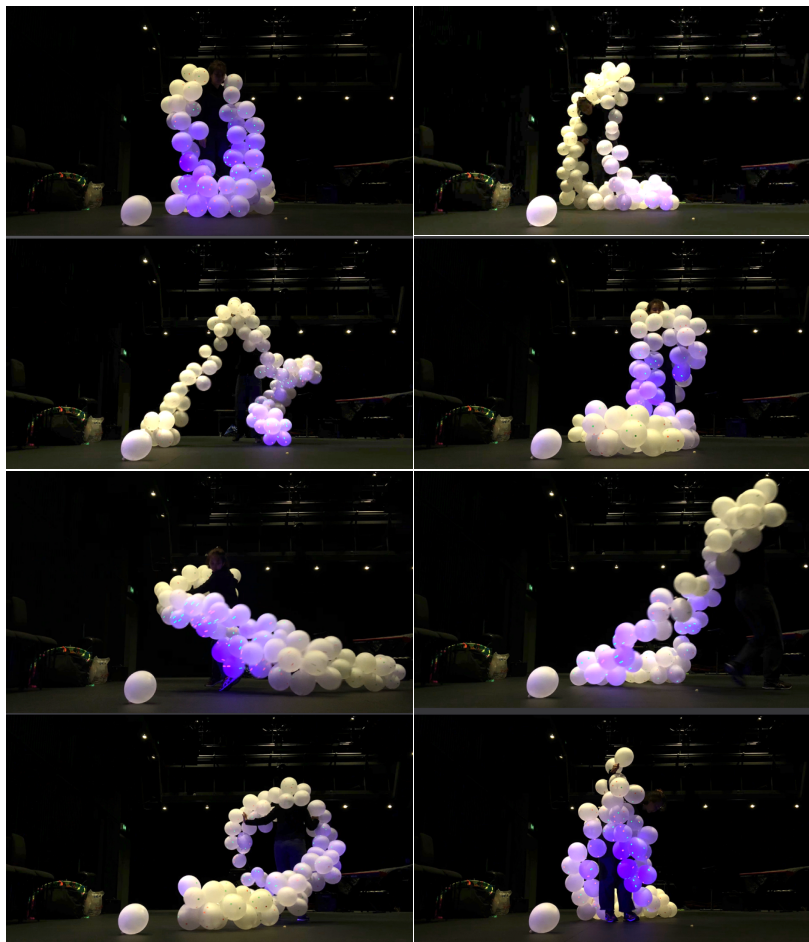


Fig. 4.6-19 Exploring the wearability of *The Cells* project (2021). Balloons, neon-green thread, fluorescent red and green sticky paper dots.

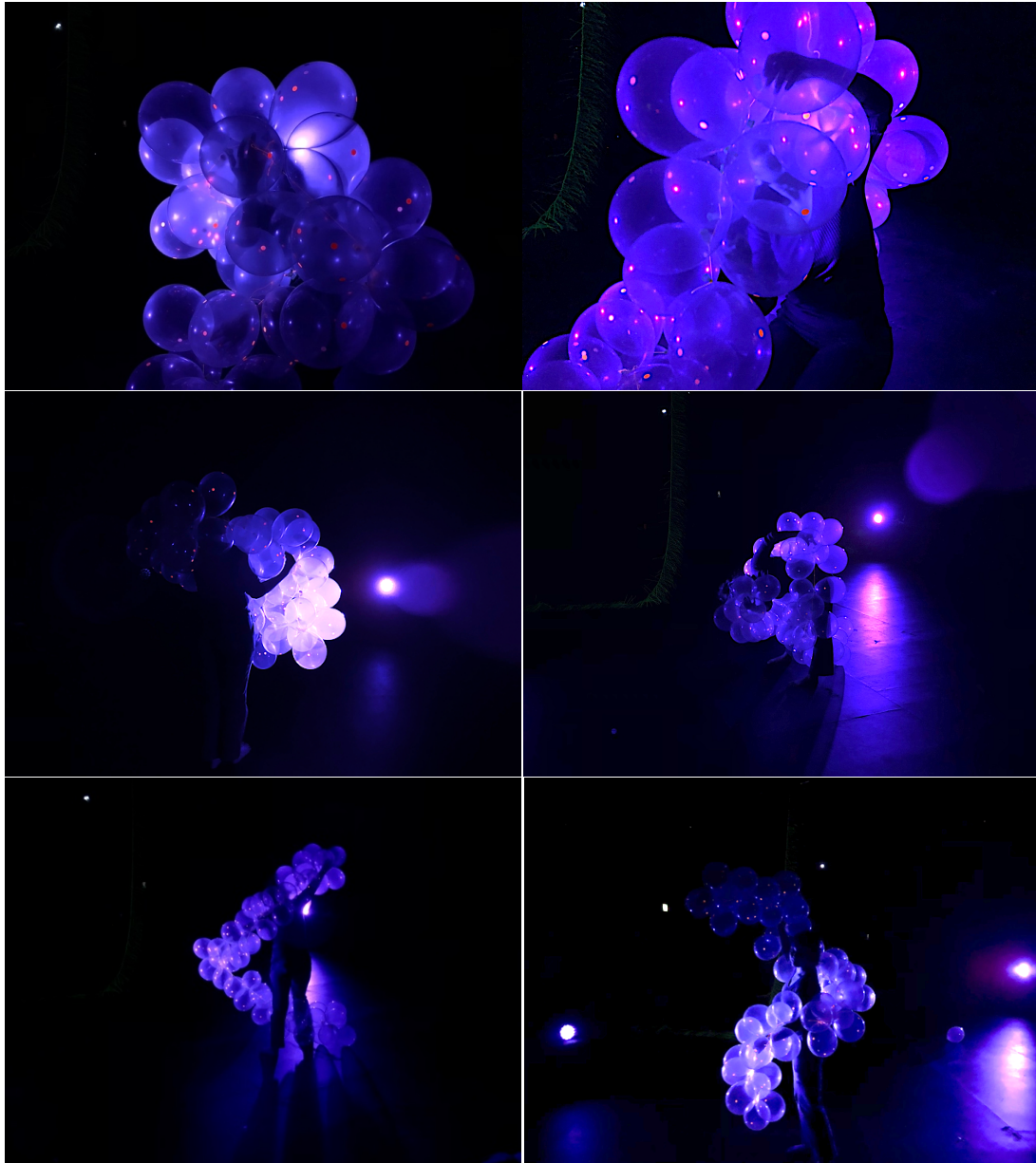


Fig. 4.6-20 Exploring *The Cells* with my body (2021).
Balloons, neon green thread, fluorescent red and green sticky paper dots.

4.6.3 Reflection

Investigating light-reactive materials as wearable objects through a performance-based approach enabled me to reflect on jewellery as an interdisciplinary medium and draw parallels and distinctions between jewellery making and performance making. My role in creating and developing wearable objects, which was inspired by the opera story, reflected my initial involvement within this more complex performance process. Making wearable objects and inviting the dancer to explore and perform with them provided me with a valuable learning experience in understanding dance choreography and improvisation using wearable objects. Moreover, the emergent artefacts and collaborative relationship developed in *Touch the Light Workshop II* were further extended and facilitated by me, the dancer and the performer throughout the third phase of my studio practice.

I explored the physical properties of the light-reactive wearable objects, including their texture, weight, flexibility and responsiveness to movement. These factors determine how the dancer can manipulate and adapt to them. For example, lightweight and flexible materials may allow the dancer to move more freely and naturally, enabling a wider range of motion and expression. In contrast, heavier materials may limit the dancer's movements, leading her to find creative ways to incorporate these restrictions into her performance and expand her expressive range.

4.6.4 Conclusion

Section 4.6 has demonstrated my research process, in which I developed the dimensions and scales of wearable objects using performance-based methods. This process allowed me to gain an in-depth understanding of the construction of wearable objects and the process of working with dancers on choreography. The wearable objects served as a mediator for the body, enabling the exploration of its surroundings. Additionally, it was fascinating to hear the variety of sounds produced during the dancer's interactions with the different artefacts. Sections 4.7 and 4.8 will introduce the wearable objects that were expanded into wearable installations, which form the scenic settings of the opera project.

4.7 Wearable installations

4.7.1 Aim and description

As the fundamental motivation for developing the third phase of my studio practice was driven by the *Tree Opera* project, developing the wearable and scenic installations was an explorative process that I engaged in with performance artists to investigate the scenic settings for the *Tree Opera* project. To present the stories from the opera project in a theatrical setting, the wearable objects developed in Section 4.6.2 were developed into a range of installations, creating more freedom for the dancer to enter the space and interact and improvise with the artwork. Furthermore, the aim of incorporating light-reactive materials into larger, spatial art forms is to explore the relationship between those materials, the body and space through the installation, thus opening up creative possibilities.

4.7.2 Research process

4.7.2.1 *The Root Installation*

The initial idea behind developing an installation structure for the opera project was to transform the wearable objects into large-scale installation works that would enable the dancer to enter and interact with the work. The first scenic installation piece developed for the *Tree Opera* that evolved from one of the wearable objects was *The Roots* (Section 4.6.2.2). As *The Roots* is approximately seven metres long, I decided to hang one end from the ceiling to observe the work from a different perspective. After the initial setup, I started to explore the work (Figure 4.7-1). As one end of the object was secured to the ceiling, the other end could be manipulated and stretched to a variety of dimensions within the space.

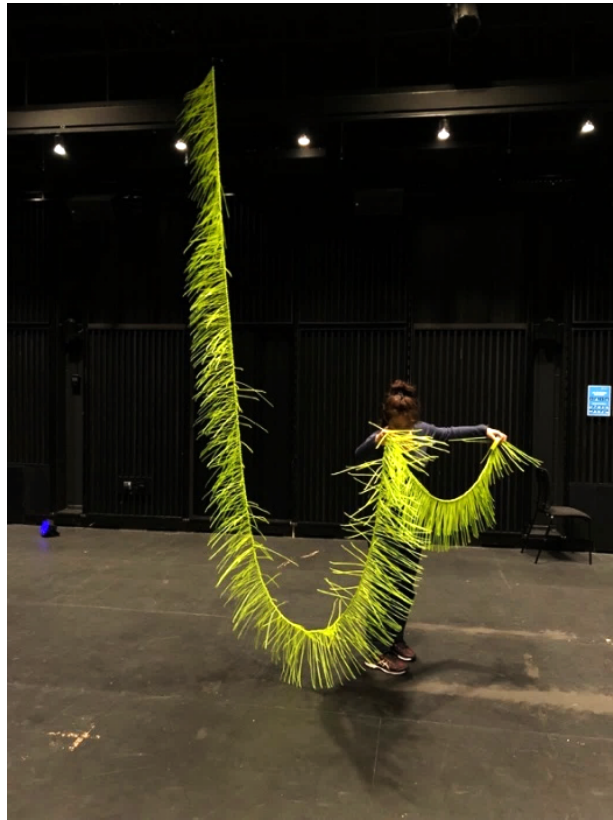


Fig. 4.7-1 Setting up *The Root* Installation (2021).
Neon-green zip ties and fishing lines.

I then started to explore the work in the light (Figure 4.7-2). The texture of the zip ties gave the skin a light tingling sensation, a similar feeling to when you enter a wooded area. As the object was quite heavy to wear, I tried to wrap it around the body to secure it. Due to the limited light conditions, attention was easily drawn to the fluorescent materials, and the body felt absorbed by the dark space. Touching, holding, lifting and sensing the texture of the materials on the skin, as well as listening to the sound the materials made when they rubbed against the floor, created a very immersive experience for me (Figure 4.7-3). Moreover, the light transformed the artefact and area into a playful, theatrical space. The engagement of the body in exploring and interacting with the work further blurred the boundary between jewellery making and performance making (Figures 4.7-4 and 4.7-5). Although I am neither a performer nor a dancer, playful engagement with the light-reactive materials expanded my role from jeweller to performance creator.



Fig. 4.7-2 *The Root* Installation (2021).

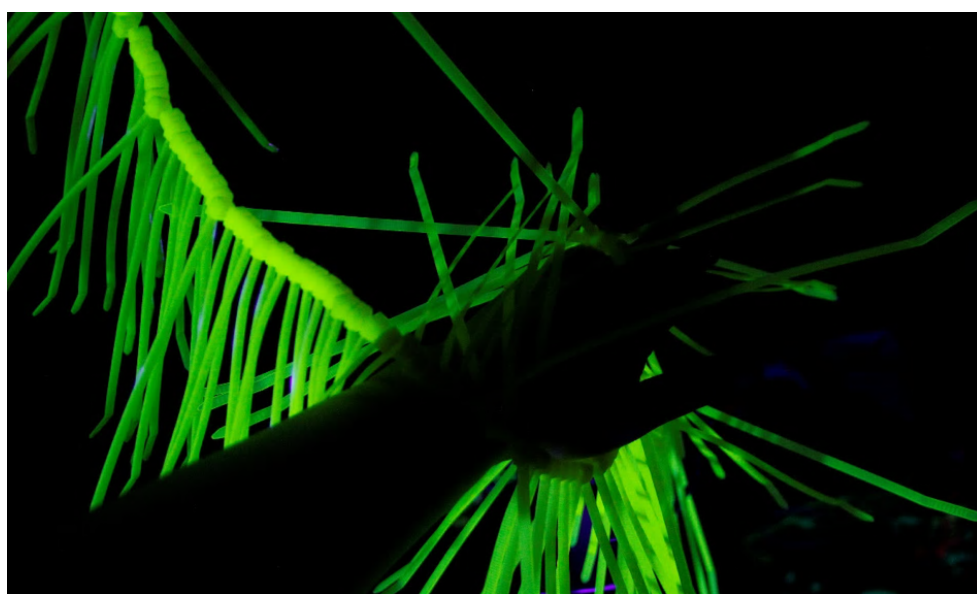


Fig. 4.7-3 Exploring the materials (2021).

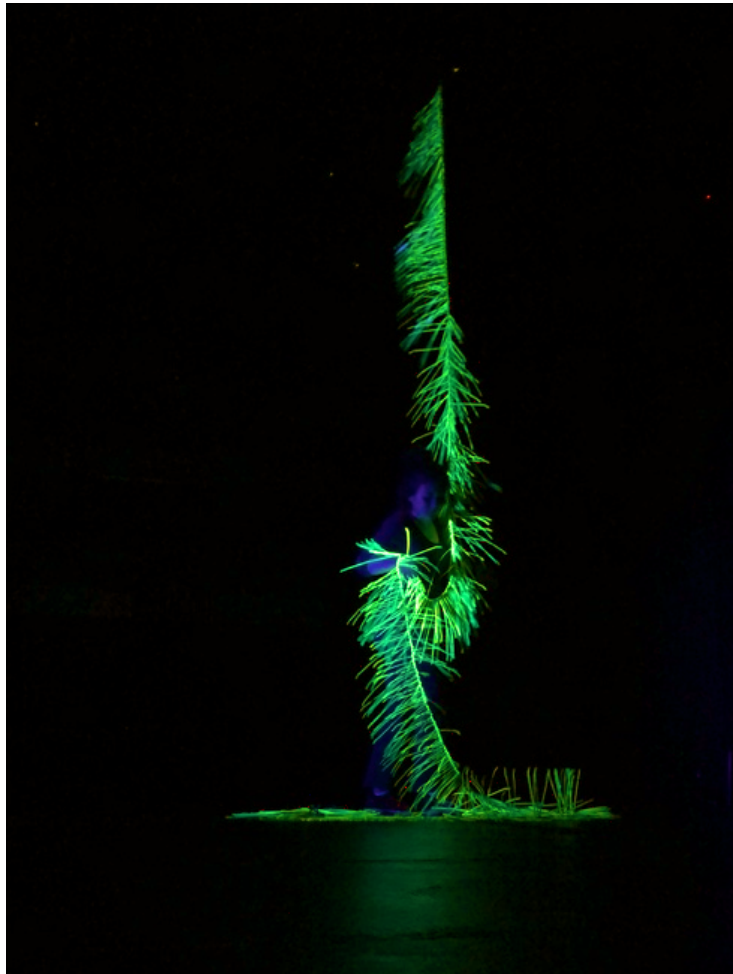


Fig. 4.7-4 Exploring the materials with my body (2021).



Fig. 4.7-5 Exploring and performing with the materials with my body (2021).

To further explore the full dimension of the work, I carried out the rest of the installation work in the Shell Gallery, which is a much bigger space than the RBC. The previous creation of *The Roots* installation, as well as some experimentation with performance in the making, inspired me to work on the performance to develop a better understanding of the performance-making process. During the exploration, Korda and I acted as helpers, providing nutritious food for the roots (Figure 4.7-6). As we were dressed in black, our bodies were like two black silhouettes moving through the space. The shadows of the dynamic bodies were projected onto the back wall, creating the illusion that there were four dancers performing in the space. Due to *The Root's* installation, Korda and I focused on the movements themselves rather than the physical interaction between our bodies and the work. To enhance the interaction, I created several smaller installations, allowing for more freedom of movement with the objects (Figure 4.7-7).

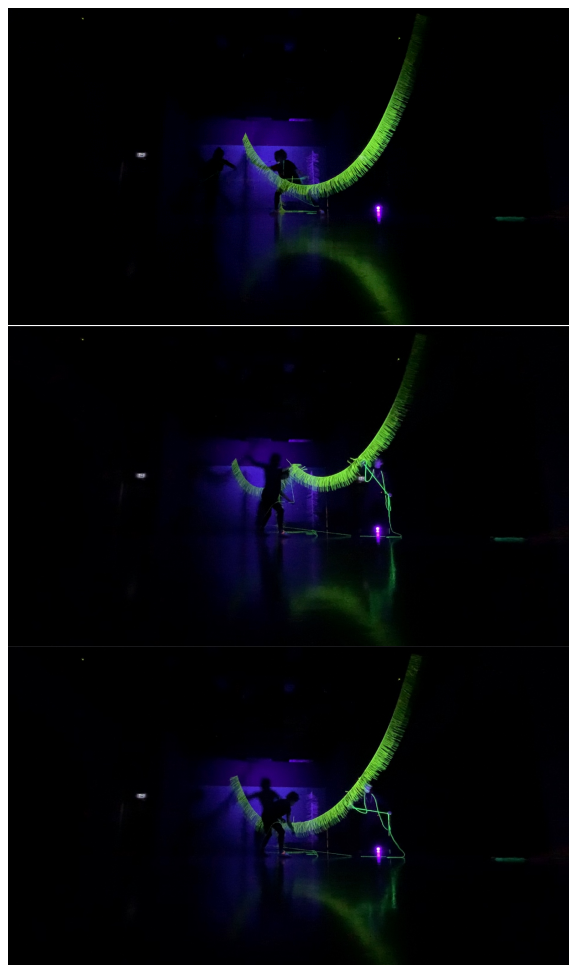


Fig. 4.7-6 Exploring *The Root* installation (2021). Performed by Roxanne Korda and Wanshu Li.



Fig. 4.7-7 Interacting with the work (2021). Performed by Roxanne Korda.

4.7.2.2 *The Rainbow Tree Installation*

In addition to *The Root* installation, I introduced other wearable objects into the installation structure. This evolved from the tree spirits created in Section 4.6 and was designed to create a more immersive experience with the materials, exploring different dimensions of the tree spirit object, which was inspired by the brilliant patterns of the rainbow tree. The *Tree Spirit* wearable object (Figure 4.6-15) was therefore transformed into a ceiling-mounted installation that allowed the performer to enter the object and experience the work from within. The vibrant fabric ribbons were attached to a ring hoop and suspended from the ceiling. This encouraged a different way of experiencing and interacting with the work. The installation spread and expanded the materials into the room, creating an exploratory performance space into which the dancer could enter (Figure 4.7-8).

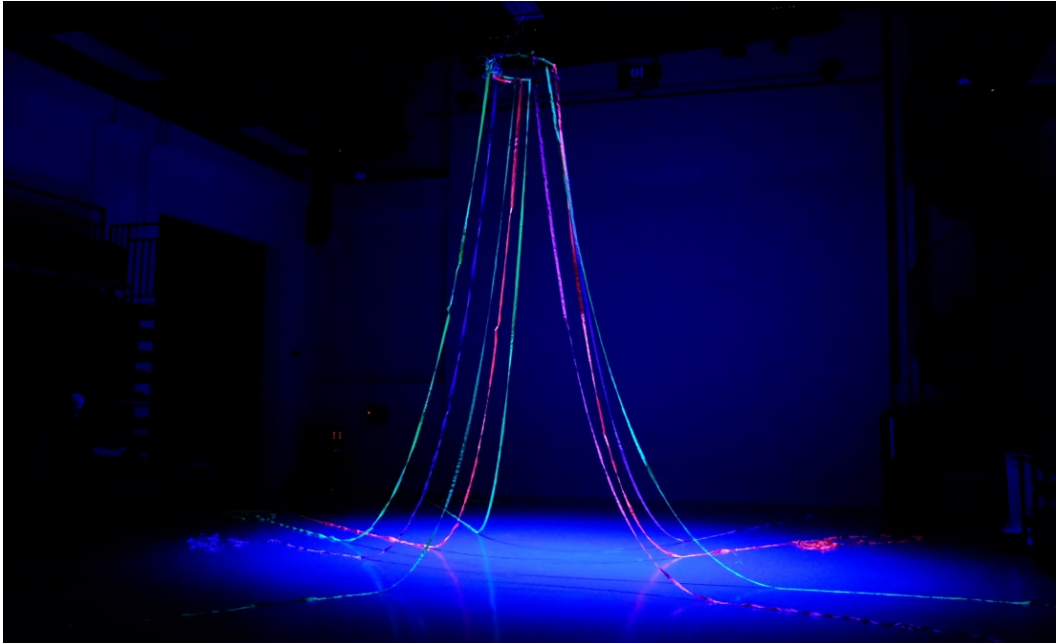


Fig. 4.7-8 *The Rainbow Tree* installation (2021).

After initially setting up the installation structure, I invited the dancer to explore it. The vibrant ribbons extended and filled the space, creating a beautifully subtle, playful, and fluid movement with the dancer's body. The dancer's movement was dynamic; her breathing and emotional reactions responded to the fabric and the light atmosphere, and the fabrics followed her movements and body rhythms. During the performance, the interactions between the dancer and the materials created pleasant and subtle sounds. The intimate and physical interactions that resulted from the dancer's exploratory movement were captured in the photographs as a series of ephemeral and spontaneous moments (Figures 4.7-9 and 4.7-10).

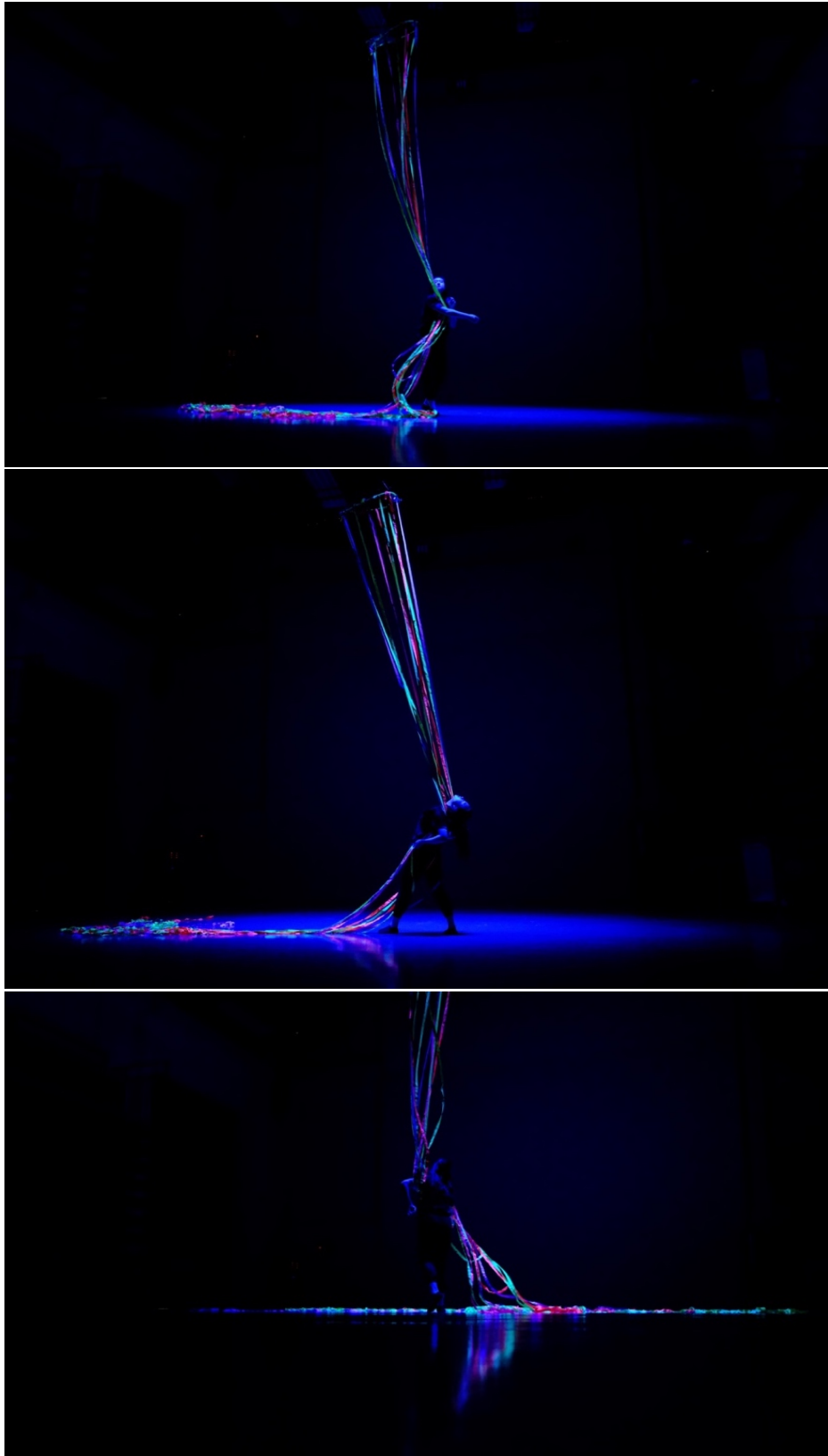


Fig. 4.7-9 *The Rainbow Tree* (2021). Performed by Jingya Peng.

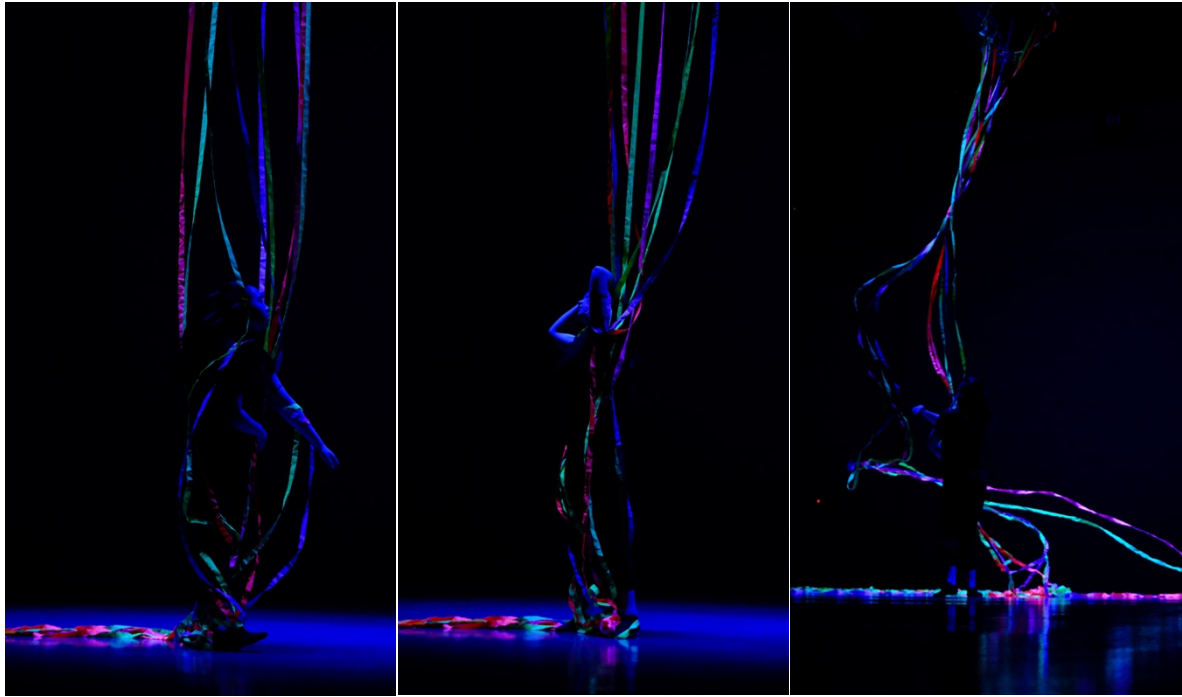


Fig. 4.7-10 *The Rainbow Tree* (2021). Performed by Jingya Peng.

4.7.3. Reflection

The exploratory and making process for transforming wearable objects into installations challenged and motivated me to reimagine and analyse the artefacts further by looking at the spatial perspective of my work. As a jewellery designer and maker, creating artefacts for the body is central to my studio practice throughout the creative process. This collaborative research process expanded my understanding of the role of the body in the creative process. Creating an immersive wearing and viewing experience for the body via an installation approach necessitates envisioning a change to the scale of the work from small to large, as well as embracing a different working process, which is a more open-ended engagement with the body.

By working with dancers and exploring the work together, I gained an embodied experience of the transferrable position between maker and performer. The light, body movement and light-reactive installation activated the space, which created an immersive and open-ended environment for making, experimenting and performing. For example, the process of changing *The Root* from a wearable object into an installation transformed my initial inspiration, and I expanded the object into a big necklace for the space. Working with dancers further unlocked the interactive and

performative potential of light-reactive materials whose activation qualitatively changed the nature of the explorative performance space. In this space, an installation was created that was perceived not only as a static object but also as a temporal and living experience. Working with dancers and observing the way they interacted with the object, the space and the light played an important role in bringing out the creative potential of light-reactive materials to activate artefacts in dark spaces.

4.7.4 Conclusion

Working with the dancer to investigate the installation work was a learning process that prepared me for the subsequent complex collaborative project. Working alongside performance artists allowed me to gain fresh insight and draw on their knowledge of the creative process. This laid the groundwork for future participation in more complex performance projects. The creation and exploration of installation art served as a good overture for incorporating wearable objects into the stage set. Following preliminary discussions with the *Tree Opera* creator, I decided to move forward with developing the scenery design for the opera project.

4.8 *Tree Opera*

4.8.1 Aim and description

Based on my earlier studio experiments, where I choreographed with dancers and performers during phase three, the two live performances aimed to incorporate the artefacts developed from previous workshops (wearable objects and wearable installations) and present a work-in-progress show. It brought together dancers, musicians, singers and designers to create an immersive and multisensory art space that involved theatrical, musical and light-reactive wearable art elements, which allowed the audience members to not only watch the performance but also experience it. Throughout the year-long development of this project from 2021 to 2022, two iterations of live performances were presented, each with a distinct focus. The first, *Tree Opera*, centred on the advancement of scenery design, while the

second, *Lipote: An Interconnected Journey*, evolved from its predecessor by concentrating on costumes and portable, wearable objects.

4.8.2 Research process

4.8.2.1 *Tree Opera*

Due to the COVID-19 restrictions in August 2021, only a small audience, consisting of seven people, was invited to the *Tree Opera* live show to interact and perform during and after the show; specifically, they were encouraged to play with the artefacts and contribute to one of the scenic installations. After the performance, the artefacts remained on the stage, and the audience was able to enter the stage area and physically engage with the art objects and scenery to further understand the materials and the concept of this performance. In the performance design process, the RSVP Cycle (Halprin, 1969) was employed as a guiding framework. This iterative design approach facilitated a series of rehearsals with the dancers, enabling subsequent refinements to both the scenic design and the wearable object design.



Fig. 4.8-1 On-site group discussion with Jingya Peng, Roxanne Korda and Oliver Farrow. RBC.



Fig. 4.8-2 Preparation for rehearsals. RBC.

Based on the previous development of wearable objects and wearable installations, these artefacts were further adopted to different scenes. The rehearsals focused on incorporating the artefacts into the scenery design so that the dancers could interact with them, echoing and expressing the theatrical narratives and plotlines of *Tree Opera*. During the previous development of the wearable objects (Section 4.6) and wearable installations (Section 4.7), I collaborated with the dancer in exploring the light-reactive materials in a different range of art forms. We had already gained a good understanding of the materiality and the performativity of different objects, which significantly facilitated the choreographic process of transforming art forms into different stage settings. For example, the balloons I experimented with as wearable objects (Section 4.6.2.6) were incorporated into one of the scenes to simulate a thunderstorm, as the sound of the balloons colliding with each other in motion produced a storm-like sound that matched the narrative details in the opera, foreshadowing the danger signals that other new plantations were invading the native forest's homeland.

Due to plot demands, it was necessary to provide the audience with clear hints *vis-à-vis* the transformation of the story and the scene. Most of the artefacts developed in Sections 4.6 and 4.7 were transformed into fixed installations on the stage. The interaction between the dancers, the artwork and the space was choreographed in advance, unlike the improvisational explorations by dancers in previous workshops.

After rehearsals, the live performance was held at the RoguePlay Theatre (Figures 4.8-3 to 4.8-6). It would be challenging to incorporate all the scenes in the thesis, so I have chosen a selection to discuss in the next section.



Fig. 4.8-3 *Tree Opera* – Scene 1 (2021). Performed by Jingya Peng and Tanna Chamberlain. RoguePlay Theatre, Birmingham.



Fig. 4.8-4 *Tree Opera* – Scene 2 (2021). Performed by Jingya Peng and Tanna Chamberlain. RoguePlay Theatre, Birmingham.



Fig. 4.8-5 Dancers' silhouettes (2021). Performed by Jingya Peng and Tanna Chamberlain. RoguePlay Theatre Birmingham.



Fig. 4.8-6 An image captures Jingya Peng's aerial spinning movement (2021).
RoguePlay Theatre Birmingham.

The live performance provided a unique platform to explore the dynamic relationship between dance and scenery design. The dancer's ability to integrate the different visual elements into their performance, transforming them through motion, shape and sound, offered a powerful demonstration of the synergistic potential of interdisciplinary artistic collaboration. The performance-based methodology employed in this context enables the oversized adornments to come alive, evolving into dynamic art forms that interact with their environment. The integration of light-reactive materials in these pieces adds an additional layer of complexity and aesthetic appeal. As the adornments respond to changes in light intensity and colour, they create an immersive visual experience for both the wearer and the audience. This transformative quality of the jewellery, combined with the performative aspect, challenges the preconceived notions of what jewellery can be and how it can be experienced.

4.8.2.2 *Lipote: An Interconnected Journey*

The second iteration of the show concentrated on developing costumes and wearable objects. In contrast to *Tree Opera*, which engaged more fixed structures of installations in its scenery design and featured prototype costumes, the production of *Lipote: An Interconnected Journey* explored innovative concepts of costumes alongside portable and wearable installations. Upon reflecting on our previous performance, my collaborators (Roxanne Korda, Oliver Farrow and Jingya Peng) and I decided to give the dancer greater freedom of movement. Consequently, we opted to limit the use of installations in the second iteration of this project and instead concentrate on the creation of costumes and wearable objects. From August to December 2022, we focused on the second stage of the show's development, culminating in a live performance watched by an audience of approximately 15 individuals.

After developing the initial design ideas, I collaborated with the performance artists to experiment further with materials. In this process, my role was to direct focus onto the development and design of costumes and wearable objects. Given the extensive scope of the project, a significant proportion of the costume and wearable object construction relied on teamwork. As a team, we developed a range of new ideas that

took inspiration from wearable installation designs from previous workshops, for example *Dancing Betta Fish* (Section 4.6.2.1) and *The Root* (Section 4.6.2.2). Figures 4.8-7, 4.8-8 and 4.8-9 show the co-creation process and document explorations of costume ideas, wearable prototypes and fluorescent materials.



Fig. 4.8-7 Co-creating process in developing prototypes.



Fig. 4.8-8 Exploring costume designs evolved from *Tree Opera*.



Fig. 4.8-9 Material explorations.

Recycled plastic pen cases and fluorescent zip ties.

Due to the complexity of the design process, which entails creating prototypes and conducting tests, I have chosen to present a selection of artefacts, including costumes (Figures 4.8-10 and 4.8-11) and wearable objects (Figures 4.8-12 and 4.8-13), that were showcased in various scenes during the live performance. Instead of utilising installations with fixed structures, which demand performance venue specifications and riggings for setup, the decision was made to concentrate on designing costumes and wearable artefacts. This can provide the dancer with more freedom of movement in performing the artefacts. In some of the scenes, the dancer's absent body in the darkness presented an intriguing visual effect (Figure 4.8-10). Most dance performances emphasise the centrality of the body as the primary medium of expression, communication and aesthetic appreciation. However, the absence of the dancer's body in light-reactive performances challenges these assumptions and invites a re-evaluation of the role of the body in dance.



Fig. 4.8-10 Scene 1 performed by Clint Lesch, Roxanne Korda and Oliver Farrow (2022). RBC.



Fig. 4.8-11 Scene 2 performed by Dalma Sinka (2022). RBC.
Costume design refined from *The Dancing Betta Fish* that I designed previously;
see details in Figure 4.6-6.



Fig. 4.8-12 Scene 3 (*The Root* installation) performed by Clint Lesch, Roxanne Korda and Oliver Farrow (2022). RBC.



Fig. 4.8-13 Scene 4 performed by Roxanne and Clint Lesch (2022).
Elastic fabric-framed installation. RBC.

4.8.3 Reflection

One fascinating observation from the live performance was the improvisational and creative effect of the integration of wearable objects within the dance, providing a rich and multifaceted experience for both the dancer and the audience. Although there were several rounds of rehearsals, the final performance still showcased the concept of difference in each scene. It is impossible for any dance performance to be a precise or comprehensive replication of earlier renditions. Foster (2003: 3) argued that “the improvising dancer tacks back and forth between the known and the unknown, between the familiar/reliable and the unanticipated/unpredictable”. Given that each enactment of a dance inherently contains unpredictable elements and a certain level of indeterminacy, it necessitates a degree of spontaneity on the part of the dancer; hence, any dance can be considered improvised (Ravn, 2020).

In the live performance of *Tree Opera*, the engagement of costumes and wearable objects helped to establish a connection between the dancer, the music and the audience. As the dancer improvises to the rhythm of the music, the audience can observe how their movements interact with the costume, creating a dynamic dialogue between sound and visual expression. This interaction fosters an immersive experience for the audience, enabling them to engage more deeply with the performance and perceive the dancer’s interpretation of the music. According to Foster (2003: 9):

Improvisation empowers those who witness it as well as those who perform it. Watching improvisation, consciousness expands out of passive reception of an event and toward active engagement in the actual making of the event. Viewers participate along with the performers in the open field of possible choices and the performers’ construction and selection of those choices through which meaning is determined.

4.8.4 Conclusion

During the development of the scenery design for the collaborative projects, my role evolved beyond that of a maker and designer. I also became a coordinator involved

in the intricate performance-making process. One of the challenges I faced during the collaborative process was balancing different opinions among the team members, which necessitated an ongoing dialogue between my collaborators and me. The ability to mediate and facilitate discussions became essential, as it helped to ensure that the creative process ran smoothly and that the creative outcome reflected a balanced integration of the team's contributions. The insights gained and challenges faced during this process will be further discussed in Section 6.4.

4.9 Conclusion

This chapter has discussed the research process in three phases, showcasing the potential of interdisciplinary collaboration between jewellery and performance art in studio-based practices. Using performance art methodologies to explore light-reactive materials as body adornments, my work expanded beyond the initial jewellery concept to include jewellery performances. Wearing objects on the body becomes a performance, where elements such as bodily movement, space and light play crucial roles. Collaborating closely with dancers and other members of the production team allowed me to gain a deeper understanding of the complexities of the performance-making process and the impact of co-creation and co-reflection on creative outcomes. In the next chapter, I will present the interview data collected from the participating audiences and performance artists. The findings, including emergent themes and insights from the interview data, will be discussed in the Findings chapter.

5. Findings

The findings presented in this chapter provide insights into the data collected through interviews with participants engaged in the workshops, focusing on their responses to a range of large-scale theatrical and performative installations and wearable objects. Semi-structured interviews were employed in this research to gather first-hand perspectives and experiences related to the research topic, with the interviewees including audience participants and performance artists. Due to the impact of COVID-19, most of the interviews were conducted online via video recordings, adhering to ethical guidelines to ensure participants' confidentiality and privacy. The collected data was transcribed and analysed, and a thematic analysis was employed to identify recurring patterns and themes in the data and analyse the qualitative interview data, facilitated by ATLAS.ti software. The key themes that surfaced from this analysis further enriched the knowledge gained from the researcher's studio practice, workshops and live performance projects, contributing to an in-depth understanding of the research topic. This research will present an overview of the workshops, including the context in which they were conducted and information regarding the participants involved in each project. Between 2019 and 2022, five creative workshops and two live performance projects were conducted across various locations in Birmingham:

1. ***Touch the Light pilot project***: A one-day workshop carried out at the Shell Gallery, Parkside Building, BCU in August 2019. This activity engaged four audience participants, who comprised jewellery and architecture students and staff. Participants were encouraged to interact with and explore light-reactive installations. Semi-structured interviews were conducted after the workshop.
2. ***Touch the Light Workshop I***: A one-day workshop conducted at BCU's Shell Gallery in February 2020. This activity engaged six architecture students, who were divided into three groups. The participants were encouraged to work collaboratively to make light-reactive artefacts. A semi-structured group interview with the participants was conducted after the workshop.

3. ***Touch the Light Workshop II***: Due to COVID-19, the researcher was unable to access studio facilities from March 2020–November 2020, as workshops with audience participation were paused. However, the researcher adapted the plan and collaborated with three dancers to carry out a performance workshop at the Exhibition Hall of The School of Jewellery over three days in November 2020. During the workshop, the dancers were invited to co-create, interact and perform with artefacts. After this workshop, the researcher established a collaborative relationship with the dancers, which laid the foundation for future performance projects. A semi-structured group interview with the dancers was conducted afterwards to gain further insights.

4. ***Wearable Objects***: Small, creative workshops were conducted at the Shell Gallery, the Parkside Building of BCU and the RBC in May–August 2021. The positive feedback and results from *Touch the Light Workshop II* inspired the researcher to pursue more extensive performative projects. Collaborating with one of the dancers from *Touch the Light Workshop II*, the researcher further investigated the performative and theatrical elements by creating a variety of wearable objects, drawing upon the experiences and creative outcomes from the previous workshop. A semi-structured interview with the dancer was conducted after the workshop.

5. ***Wearable Installations***: This project was developed concurrently with *Wearable Objects* in the same locations from May–August 2021. It aimed to transform the wearable objects into installations that enabled the dancer to interact with the artwork and improvise within the space. The use of UV-reactive materials in the installations facilitated the exploration of the relationship between materials, the body and spatial dynamics while presenting creative possibilities for incorporating these materials into larger and spatial forms. A semi-structured interview was conducted with the dancer after the workshop.

6. ***Tree Opera***: After *Wearable Objects* and *Wearable Installations*, two open-rehearsal performances were carried out in August 2021 at RoguePlay Theatre in Birmingham, followed by another live performance at the RBC in

December 2022 with an updated name: *Lipote: An Interconnected Journey*. The same group of researchers and artists collaborated on both productions, demonstrating a shared interest in exploring the intersection of jewellery and performance art. A semi-structured group interview with collaborators was conducted after *Tree Opera*, and comments and feedback were collected from the audience.

5.1 Thematic presentation of the audience participants' interview data

This section outlines the interview data gathered from audience participants in the *Touch the Light* pilot workshop (August 2019) and *Touch the Light Workshop I* (February 2020). The data was collected through semi-structured interviews in the same month after the workshop finished and is presented according to the themes and patterns identified during the data analysis process. For each theme, a brief introduction will be provided, followed by relevant interview quotes. After the quotes, an initial interpretation or analysis of their significance in relation to the research themes and broader context of the research will be presented. This will provide a framework of potential themes to inform the subsequent discussion.

Theme 1: Atmosphere and immersion

Participants frequently mentioned the atmosphere created by the installation in the *Touch the Light* pilot workshop (Section 4.3) and how it contributed to their immersion in the experience. They commented that the environment, particularly the limited light source and overall atmosphere, played a crucial role in shaping their experience of the installation. They described the space as “mysterious”, “futuristic” and “immersive”, with a captivating quality that encouraged exploration and interaction:

I found the installation area to be an immersive setting. The dim lighting proved effective in creating a mysterious and futuristic atmosphere, and the glowing materials caught my eye right away. The absence of

light drew me into the experience and immersed me in the moment in the artwork. (Participant 1, *Touch the Light* pilot project)

This quote highlights the participant's fascination with the installation's atmosphere, which effectively captured their attention and increased their curiosity. The dim lighting and mysterious setting likely contributed to their overall immersion in the experience.

In addition, Participant 3 highlighted the significant impact of the darkness in creating an intimate and calming space, suggesting that the absence of light played a crucial role in facilitating a sense of comfort and relaxation:

The neon ribbon and the blue lighting together created an immersive space and otherworldly setting. It appear[ed as if] I had entered another dimension. [In particular], the dim light[ing] ... made it feel more private and relaxing. (Participant 3, *Touch the Light* pilot project)

Theme 2: Interaction and engagement in the installation

The participants discussed their interactions with the installation in the *Touch the Light* pilot workshop and how the opportunity for physical engagement with the materials enhanced their overall experience. Some of them mentioned the playful nature of the objects, which evoked childhood memories and allowed them to explore the space in a hands-on manner. As Participant 2 commented:

Interacting with the objects was fun. I wanted to grab the hanging circles of different heights and sizes and see how they fit on my body. I considered myself both a participant and an observer during this activity, as I also enjoyed watching how other people interacted with the artwork. (Participant 2, *Touch the Light* pilot project)

In this regard, Participant 2 shared her enjoyment of interacting with the installation and described how it facilitated her engagement in the workshop experience. Her

experience of being both a participant and an observer indicated that she was actively involved in the work. Participant 3 further reinforced this:

While the setting wasn't entirely new, as it resembled other exhibitions and stage designs, the interactive and playful aspect of this installation was different from static exhibitions I've seen. What made this experience particularly special for me was the opportunity for physical interaction with the materials. Moving through the space, I felt like I was a part of the artwork, as if I was performing on a stage. I felt like a performer, not just a spectator. (Participant 3, *Touch the Light* pilot project)

Theme 3: Personal interpretation and meaning

Participants shared the personal interpretations they derived from the installation in *Touch the Light Workshop I*. These personal connections allowed them to engage intimately with the artwork and associate personal experiences and meanings with it. Participant 2 suggested that the installation triggered memories of childhood, evoking a sense of nostalgia: "It gave me the feeling of a ribbon dance, with circles associated with the rolling circle game I played as a child."

According to Participant 1:

I tried placing the ribbon on different parts of my body, and each position created a different feeling. For example, when I placed it on my head, I felt like an angel; when I put it around my waist, it felt like a hula hoop. I felt a sense of joy and freedom, as if I was reconnecting with my inner child, which left a lasting impression long after I [had] left the space. (Participant 1, *Touch the Light Workshop I*)

In a similar vein, Participant 4 stated:

The playful nature of the installation took me back to my childhood. It remind[ed] me of the times when I would create my own little worlds

with everyday objects and make things using simple materials that were at hand. (Participant 4, *Touch the Light Workshop I*)

Theme 4: The role of darkness

The interview transcripts revealed the role and multifaceted impact that darkness had on the participants' experiences within the installation in the *Touch the Light* pilot workshop. The dimly lit environment affected several key aspects of the participants' engagement, such as emotional resonance, sensory focus and a personal connection to the artwork. First, darkness contributed to an emotionally charged atmosphere that heightened the participants' sensory and emotional connections with the installation. Participant 3 (*Touch the Light* pilot project) highlighted that the darkness created a more intimate atmosphere, allowing her to feel at ease. This indicates that the subdued lighting played a significant role in evoking emotions and creating a deeper sense of immersion in the experience.

Second, the limited sources of light allowed the participants to focus on their physical interactions with the artwork without being overly cautious or self-conscious. Participant 3 stated that the darkness made the artwork feel more private and relaxing, emphasising the impact of the dimly lit environment on facilitating a more enjoyable exploration of the installation. This suggests that darkness played a crucial role in fostering a sense of freedom and spontaneity, allowing the participants to engage fully with the artwork on a physical level. Furthermore, the darkness helped to highlight the neon-coloured elements within the installation, drawing the participants' attention to the interactive components and inviting them to engage with the artwork directly and personally. As Participant 4 observed, "My focus was primarily on the neon-coloured circles rather than the body itself".

In conclusion, the interview data reveals that the atmosphere, the interactions between the participants and the artefacts, personal interpretations, and the use of darkness were significant aspects of the participants' experiences with the installation. The immersive environment and the opportunity for engagement with the materials contributed to the creation of a memorable and thought-provoking experience for the participants.

5.2 Thematic presentation of the dancers' interview data

This section presents the interview data from the dancers participating in *Touch the Light Workshop II* (Section 4.5), *Wearable Objects* (Section 4.6), *Wearable Installations* (Section 4.7) and *Tree Opera* (Section 4.8). The data was collected through semi-structured interviews with the dancers, and thematic analysis was used to identify patterns and trends in the data. The interviews were conducted after the research activities to assess the impact of the dancers' experience. The results of the analysis are presented in the thematic sections below.

Theme 1: Unusual darkness – body limits, relationship with space and forgetfulness

In *Touch the Light Workshop II* (Section 4.5), the darkness experienced by the dancers during the performance acted as a catalyst for an exploration of body limits, spatial relationships and the notion of forgetfulness. This theme highlights the challenges and opportunities that arise when working within such a distinctive environment, where the darkness blurs the boundaries between the space and the dancers' bodies. In the group interviews (November 2020), the dancers consistently identified the experience of darkness as a significant factor in shaping their performances and its impact on their bodies.

In the absence of light, the performers felt more liberated to experiment with new movements and expressions, unconstrained by potential audience observation. Dancer 1 commented on the liberating effect of darkness:

When there wasn't a huge spotlight on me, I felt like I could try different things. I could explore my body movements in various ways to interact with the materials. I didn't have to care if I looked weird in certain positions during my exploration. (Dancer 1, *Touch the Light Workshop II*)

This suggests that the darkness allowed the performers to step outside of their comfort zones and experiment with new forms of expression without the pressure of

being observed. Similarly, Dancer 2 explained that the darkness shifted the focus away from facial expressions, allowing her to consider alternative means of expression:

With the limited light, you can't really see facial expressions. It was fascinating to think about ... the appearance of different parts of my body – like what I was wearing or how my body movements affected [the] fluorescent materials – rather than just focusing on my facial expressions. So, I was thinking outside of my body, considering how I could express the character within the space as a whole rather than within my own personal space. (Dancer 2, *Touch the Light Workshop II*)

Both dancers shared their experiences of the liberating effect of performing in a dark environment, which encouraged them to experiment with body movements and facial expressions without fear of audience judgement. In addition, the darkness had an impact on the dancers' relationship with the space, as they navigated their surroundings with heightened awareness. This indicates that darkness encouraged the dancers to reconsider their relationship with space and facilitated a deeper exploration of the connections between the body, the wearable objects and the surrounding space. The dark space served not as a barrier but as a catalyst, stimulating a re-evaluation of the dancers' physical relationship with the space they inhabited. Dancer 2 shared her experience of dancing with fluorescent materials in a darkened space when she was unable to see herself:

It was an interesting experience for me to perform [with] the glowing materials in the dark space, as I [couldn't] really see myself. So, whenever I touched something, I was feeling like it became part of me. I was thinking a lot about what it meant to wear these objects and how it would feel to have them as a part of me. This gave me more autonomy over what materials to use and how I wanted to perform with them. (Dancer 2, *Touch the Light Workshop II*)

During the performance, Dancer 2 established a kinaesthetic relationship with the objects she touched, indicating a transformative interaction with the objects, as they ceased to be mere props and instead were perceived as extensions of herself. The darkness and glowing materials created a context in which the boundaries between the self and the other (in this case, the objects) became permeable, which facilitated an exploration of the fluidity of the body–object relationship. This will be discussed further in Section 6.1.4. Moreover, the interplay between light and dark prompted a more reflective and conscious engagement with the environment and the materials on the part of the dancers. Dancer 1 suggested she was guided by her emotions and sensations to explore the relationship between the body’s movements, objects and space:

Performing with these materials made me ... aware of my movements. The light and darkness influenced me as a performer, making me feel more reflective and aware of my surroundings. The material I used also gave me different kinds of emotions and sensations. I was kind of using the materials to guide my body to explore and activate its surroundings ... and locate myself inside the artwork. (Dancer 1, *Touch the Light Workshop II*)

Performing in a dark environment contributed to a sense of “forgetfulness” among the performers, as evidenced by the interview excerpts. In the group performance (Section 4.5.2.2), Dancer 2 stated that during the performance, “I was shocked by my own movement, as I was so immersed in the darkness and didn’t realise that it was myself moving or touching the glowing materials” (*Touch the Light Workshop II*). The immersive nature of the dark environment appeared to have a profound impact on the dancers’ self-awareness, body consciousness and interactions with the performance space.

The dark environment also seemed to alter the dancers’ perceptions of their bodies and the space around them, triggering a shift in their lived experiences. In this transformed state, the dancers became more deeply engaged with their surroundings, as their usual points of reference and bodily awareness were

obscured or defamiliarised. The darkness forced them to rely on other senses and modes of perception, fostering a heightened sensitivity to the tactile, auditory and spatial aspects of the performance environment. Moreover, the darkness affected the performers' relationship with the materials and objects they interacted with during the performance. The light-reactive materials in the dark environment took on an ethereal quality, becoming extensions of the performers' bodies or even assuming a "life of their own". This blurring of boundaries between the body, objects and space contributed to the performers' sense of forgetfulness, as they lost themselves in the process of exploration and interaction.

Theme 2: Performing with light-reactive materials

The second theme identified in the interview was the use of light-reactive materials in performance and the subsequent impact on the dancers' experiences and audience perception. The interaction between the dancers and the light-reactive materials, particularly their fluorescent components, created a unique sensory experience that combined visual and tactile elements. Dancer 2, who participated in the development of *Wearable Objects* (Section 4.7), elaborated on the abstraction enhanced by the light-reactive materials in the interview:

The fluorescence of the material used adds an abstract component to the colour, making it distinct from the normal colours I see. This abstraction introduces a level of fiction or surrealism to the performance. (Dancer 2, *Wearable Objects*)

Dancer 1 further described her experience of working with light-reactive materials during *Wearable Objects*, indicating that it was very different from her other performance and choreography experiences:

In other performances, what I wear is often secondary to my performance. However, performing with light-reactive objects is very different. My body is hidden during the performance, and the objects were central "performers". The materials made me think about the

concepts and meanings behind the objects and how they related to me and the space. (Dancer 1, *Wearable Objects*)

Dancer 1 also shared her experience with the sensory aspects of light-reactive materials:

As I touch the materials, I first feel the texture of the material on my skin. Then, the lighting catches my attention and adds new stimulation to my senses. (Dancer 1, *Wearable Objects*)

This testimony emphasises the importance of both the tactile experience of the materials and the impact of lighting in shaping the performers' perceptions and interactions with surrounding space. When exploring the relationship between the dancers and the light-reactive materials, it becomes apparent that the incorporation of such materials into a performance alters the dynamics of the interaction. The abstract quality of the fluorescent materials transcends the boundaries of traditional performance materials and introduces an additional layer of engagement for the performer and the audience alike.

Moreover, the dancers emphasised the importance of considering the comfort of the materials against their skin during a performance. Comfortable materials evoke an instinctive sense of trust in the body, allowing for greater mobility and expression. Conversely, rougher materials may require a conscious effort to establish trust between the body and the material, leading to different performance dynamics. As Dancer 1 commented:

The touch of the materials informs the initial experience, which then evolves through visual stimulation and mental processing. The improvisation in performance comes from a deep understanding of these sensations, which can only be achieved through experience. (Dancer 1, *Wearable Objects*)

The dancers placed a significant emphasis on the tactile experience of materials during the performance. Moreover, performing with a heavy object was another unique experience for the dancers, as it was physically demanding and affected their ability to move freely and expressively. When performing *The Roots* during the live performance of *Tree Opera*, the weight of the installation limited the dancers' mobility and reduced their range of movement. It was particularly challenging for the dancers, who rely on fluid and continuous movement in their performances. As Dancer 2 commented:

Although it was quite difficult for me to manage wearing or interacting with such a heavy object, during my exploration of this object, I found it interesting how the object produced sounds when I moved and played with it. When I moved with the object, it could be used as an instrument to respond to the music. (Dancer 2, *Tree Opera*)

The usage of light-reactive materials in performance settings has uncovered numerous possibilities and sensory experiences for both the performers and the audience. The integration of these materials into the performance space fosters a unique connection, as exemplified by the experiences shared by the dancers. The fluorescent component of the materials adds a layer of abstraction that heightens the level of engagement and allows the performers to delve deeper into the concepts and meanings behind the objects. Furthermore, the tactile aspects of these materials are of paramount importance in shaping the performers' perceptions and interactions with their environment, as well as the improvisation process.

How comfortable materials feel against the skin and the weight of the objects also play a crucial role in determining the dynamics of a performance. Comfortable materials enable a more fluid and expressive performance, while heavier objects may restrict movement and require a conscious effort to establish trust between the body and the material. Nonetheless, these challenges can be transformed into opportunities to convey specific moods or messages and engage the audience on multiple sensory levels. Ultimately, the use of light-reactive materials in performance offers a rich tapestry of sensory experiences that transcends traditional performance materials and expands the creative possibilities for artists. By incorporating these

materials into their work, performers can forge new connections with their environment and audience, ultimately enriching the overall experience and pushing the boundaries of artistic expression.

Theme 3: Boundaries of the self/other

The theme in relation to boundaries of the self/other, as well as the bridging of the body and the environment, emerged as an important aspect of the three dancers' experiences during *Touch the Light Workshop II* and *Tree Opera*. This theme underscores the complex dynamics at play in the performance space and the essential role that attire assumes in shaping performers' awareness and interaction with their bodies and the environment.

Dancer 1 expressed her fascination with the notion of focusing on “the appearance of different parts of my body – like what I was wearing or how my body movements affected [the] fluorescent materials – rather than just concentrating on my facial expressions” in the dimly lit setting. This reflection highlights the ways in which attire serves not only as a visual extension of the body but also as a conduit for the interaction between the performer and their environment. Similarly, according to Dancer 2:

The presentation of the attire should aim to find a balance between the body and external elements, similar to how dancers use their body to control their movements. I see my body as an intermediate medium that can regulate the balance between the environment and objects, which can be reflected in the performance as a form of coordination.

(Dancer 2, *Tree Opera*)

This perspective underscores the importance of attire as an integral component of the performance, enabling the dancer to navigate the delicate equilibrium between the self and the other. It also highlights the role of the body as an intermediary, mediating the connection between the individual and the surrounding environment. In this context, the attire assumes a transformative quality, as the light illuminates specific aspects of the costume, accentuating the performer's movements and gestures. This interplay between darkness and light-reactive attire blurs the

boundaries between the performer and their environment, enabling a more immersive and engaging experience for both the performer and the audience. The concept of the margins of the self/other refers to the boundaries that delineate the individual from their environment and the interconnectedness that exists between them. In the context of performance art, this notion is particularly salient, as it speaks to how performers interact with and relate to their surroundings, other performers and the audience.

In a light performance, the margins of the self/other become fluid and permeable, allowing for an exploration of the interconnectedness between the performer and the external world. This phenomenon is facilitated by the unique properties of the light, which illuminates the fluorescent materials in the performers' attire and the surrounding environment. As a result, the visual boundaries between the performers and their environment become less distinct, challenging the traditional notion of a clearly defined self, separate from the external world. The fluidity of the margins of the self/other in a light performance encourages performers to consider their relationship with their environment more deeply. By consciously manipulating the balance between the self and the other, performers can create a more immersive and engaging experience in which they are not isolated entities but rather integral components of a larger, interconnected system. This exploration of the margins of the self/other has significant implications for performers' sense of agency and control. By embracing the interconnectedness between themselves, their attire and the environment, performers can expand their self-expression beyond the confines of their bodies and forge a more profound connection with their surroundings. This, in turn, enables a more dynamic and interactive performance experience in which the boundaries between the self and the other become less rigid and more fluid.

5.3 Thematic presentation of a feedback loop in a performance

The feedback loop in the context of performance art, particularly when utilising light-reactive materials, is a critical component in the development and refinement of the artistic process. In this regard, the feedback loop refers to the constant exchange of information and responses between the performer, materials, environment and

audience. This cyclical exchange shapes the trajectory of the performance, influencing both the artistic choices made and the overall impact of the work. This section explores the feedback loop in the live performance of *Tree Opera* at RoguePlay Theatre in August 2021, with a particular focus on the audience's response to the light-reactive materials during the performance.

A small group of audience members who attended the performance was interviewed, providing valuable insights into their experiences and perceptions of the feedback loop. One interviewee described his experience as follows:

I felt like I was part of the artwork, but at the same time, I was also aware of myself as a viewer. It was a balance between being fully immersed and engaged in the performance and being conscious of myself as an observer. I think this is a common experience in interactive performances, where the audience is given agency or control to shape the experience. This creates a sense of being both part of the world and an observer, which can be both exciting and challenging. (Audience member 1, *Tree Opera*)

In performances incorporating light-reactive materials, the feedback loop begins with the performer's initial interaction with the materials. The tactile experience informs their understanding of the object, which then evolves through visual stimulation and mental processing. As the performer moves and interacts with the material, the audience's perception and reactions to the performance become part of the feedback loop, further shaping the performer's choices and actions. The performer's improvisation, therefore, is a continuous process of adaptation and response to the various elements within the loop.

I was captivated by how the dancer performed with the materials and [the] interactive relationship between herself and [the] glowing object. For the moments that I couldn't see the dancer, it felt like the materials were floating on their own. But then, the dancer reappear[ed] and got very near to me; it created a sense of tension and exploration. As a

viewer, I felt like I was being drawn into her experience, and I could imagine myself moving with her, trying to understand and interpret the materials in my own way. (Audience member 2, *Tree Opera*)

Additionally, the feedback loop extends beyond the performer–audience relationship, encompassing the impact of the environment and the materials themselves. For instance, the lighting conditions in the performance space can alter the visual and emotional impact of the light-reactive materials dramatically, necessitating adjustments to the performer’s actions and the overall choreography. In this way, the feedback loop serves as a vital mechanism for artistic growth and evolution, enabling the performers to adapt their work to the ever-changing dynamics of the performance environment.

In essence, the feedback loop in performance art is a critical aspect that allows for continuous refinement and development of the artistic process. When working with light-reactive materials, this feedback loop is integral in shaping the trajectory of the performance and fostering a more profound connection between the performer, materials, environment and audience. By acknowledging and actively engaging with this feedback loop, artists can ensure their work remains dynamic, relevant and responsive to the multifaceted elements that contribute to the overall performance experience.

Another interviewee emphasised the importance of physical interaction with the artwork, which can enhance the experience and understanding of the piece:

Seeing that performances don’t always stick to a certain type – as we often stereotypically associate with the art form – was an eye-opening experience for me. I would really love to have a hands-on interaction with the artwork. Trying on cool fluorescent headwear and envisioning myself as part of the scene can’t possibly go wrong, can it? (Audience member 3, *Tree Opera*)

The responses gathered from the interviews with audience members reveal that the feedback loop in performance art, particularly when utilising light-reactive materials, contributes significantly to their experiences and understanding of the work. The exchange of information and responses between the dancer, materials, environment and audience are essential in shaping the trajectory of the performance and influencing the artistic choices. This constant interaction allows for the development and refinement of the artistic process, ultimately resulting in a more profound connection between all involved parties.

The feedback loop in *Tree Opera* is an essential aspect of the artistic process, as it enables the continuous adaptation and evolution of the work in response to various elements. By actively engaging with this feedback loop, the dancers can ensure that their performances remain dynamic, relevant and responsive to the multifaceted aspects that contribute to the overall performance experience. The interactive exchange between the dancers and the audience enables the artwork to remain a living, breathing entity, continually reshaped and refined by the collective experience of all participants.

5.4 Limitations of the interview data analysis

The analysis of the interview data presented in this chapter offers valuable insights into the experiences of the audience members and dancers involved in the various workshops and performances. The interview data has been strengthened by the triangulation of findings with other data sources, such as observation notes, video recordings and other forms of documentation. The use of semi-structured interviews allows for the collection of rich, in-depth data that provides a detailed understanding of participants' experiences and perspectives. This approach enabled the researcher to explore the nuances and complexities in the experiences of the audience members and dancers. However, to ensure a fuller understanding of the research findings, it is important to acknowledge the limitations of the analysis.

Subjectivity in the thematic analysis: The process of identifying themes, patterns and trends in interview data is inherently subjective, as it involves the researcher's

interpretation of the data. This subjectivity may lead to different researchers identifying different themes or emphasising different aspects of the data. While efforts have been made to ensure a rigorous and systematic approach to the analysis, it is essential to recognise the potential influence of the researcher's perspectives and biases on the findings.

Sample size and representativeness: The data collected for the analysis is based on a limited number of participants from specific workshops and performances. This may not provide a comprehensive representation of the broader population of audience members and dancers who have participated in similar events. Consequently, the themes and patterns identified may not be generalisable to other contexts or situations.

Impact of COVID-19 on online interviews: Due to the COVID-19 pandemic, most of the interviews were conducted online in adherence to social distancing regulations. This may have created potential biases in self-reported data, as recall bias might have affected the accuracy of participants' recollections of their experiences, particularly since the interviews were conducted after the workshops and performances.

Context-specific insights: The analysis focuses on specific workshops and performances, which may limit the transferability of the findings to other settings or artistic practices. The unique aspects of each workshop or performance, such as the use of light-reactive materials or the specific choreographic approach, may have influenced the experiences and responses of participants. Therefore, caution should be exercised when attempting to apply the findings to other contexts or extrapolate broader conclusions about the nature of the audience and dancer experiences in performance art.

5.5 Conclusion

This chapter analysed the data obtained from interviews conducted with both audience participants and the dancers involved in various iterations of the *Touch the Light* workshop series and *Tree Opera* performance. By employing a thematic

analysis, preliminary themes surfaced from the generation of codes, revealing key aspects of the research. The challenges encountered during the data analysis process were also outlined. The findings from this analysis demonstrate the pivotal role of light-reactive materials in shaping the exchange of information and responses among performers, the audience and the environment. The findings also establish a foundation for further in-depth discussion in the next chapter. Furthermore, the insights gained from audience and dancer experiences contribute to a deeper understanding of the role of light-reactive materials as body adornments in this artistic research.

6. Discussion

This chapter aims to synthesise the insights and findings derived from the studio practice with the preliminary themes that emerged from the interview data. It will consider how the research findings relate to the research questions, aims and objectives. It will centre on the multifaceted interactions of body, light and space facilitated by light-reactive materials worn on the body; these interactions will be explored and analysed through performance and related phenomenological methodologies. Furthermore, the chapter will discuss the implications of collaborative performance on the processes of making, wearing and viewing jewellery. The insights that emerge from the creative process will be contextualised within the wider body of literature, which will facilitate a critical and in-depth understanding of the research findings, underpinning the significance of this research and its contribution to the field of contemporary jewellery.

6.1 Exploring light-reactive jewellery through performance

In this section, I will offer a reflective viewpoint, exploring insights gained from working with light-reactive jewellery and drawing on performance art theories to analyse the relationship between the body, light and space facilitated by light-reactive materials. In my studio practice, I experimented with a range of artistic forms such as theatre performance, dance improvisation and installation art. I collaborated with dancers to improvise with wearable objects and installations, exploring the performativity and interactivity of these artefacts. These artefacts were then further integrated into live theatre performances, resulting in a dynamic fusion of creative elements.

My artistic research into exploring light-reactive materials as body adornments contributes to the interactive “performance” of the jewellery by altering its appearance based on the lighting environment and wearer’s movement. Through my studio practice, I transform jewellery into an ever-changing “performance”, creating an engaging and immersive experience for both the wearers and observers. The transformative properties of light-reactive materials as jewellery demand that the

body play an active role in the making, wearing and viewing processes. The shift from a jeweller's bench to a performance space has a significant impact on the making process. The confined nature of a jeweller's bench and the tools used therein necessitate small and limited movements, whereas a performance space offers an open, expansive and flexible environment, engaging the whole body dynamically. In terms of wearing, by harnessing light with light-reactive materials, and darkness, the jewellery becomes intimately linked to body movements and the surrounding environment.

As the body moves through different environments with varying light levels, the jewellery responds by altering its appearance. This dynamic interaction imbues the wearer with a sense of agency, as their movements and choices directly influence the visual manifestation of the jewellery. Furthermore, the jewellery becomes an extension of the body, forging a "symbiotic" relationship between the wearer and the object. The term "symbiotic" is used in biology to denote a close, interdependent relationship between two different organisms that results in benefits for both. Similarly, in the context of light-reactive jewellery, the wearer and the object engage in a mutual interaction that unfolds in real time. This constant flux in appearance establishes a unique, symbiotic relationship that is contingent upon the wearer's movements, the environmental conditions and the light-reactive jewellery's inherent properties.

The real-time nature of this interaction bestows the wearer with a sense of agency and control over the visual manifestation of the jewellery, which can be observed as a common characteristic, especially in the wearing of highly polished fine jewellery. The term "real time" underscores the immediacy and spontaneity of this interaction. As the wearer navigates their surroundings, the jewellery responds and adapts instantly, creating a continuous visual dialogue that unfolds concurrently with the wearer's movements. Wearing and viewing light-reactive jewellery becomes more dramatic as the jewellery's appearance shifts in response to changes in light exposure. This invites the viewer to engage more deeply with the artwork, exploring its subtleties and the interplay between the wearer, the object and the environment. This dynamic interaction encourages a more active and participatory form of visual

communication, fostering a heightened level of engagement between the viewer, the wearer and the jewellery.

The body's role in the realm of light-reactive jewellery is multifaceted and integral. As the vehicle for the jewellery, the catalyst for its kinetic dynamism and the point of interaction for the viewer, the body is central to the performative and sensory experience of light-reactive jewellery. It is through the body that the jewellery's performative qualities are brought to life, contributing to a rich and immersive experience that pushes the boundaries of traditional jewellery design. The body plays a vital role in the experience and interpretation of light-reactive jewellery. Acting as the physical platform for the adornment, it brings the jewellery to life and shapes how it is perceived. The body is not just a passive carrier; it is an active participant in the performative nature of the light-reactive materials, contributing to the dynamic dialogue that the jewellery creates with its surroundings.

As we have discussed, the mutually interactive nature of light-reactive jewellery – the wearer's body shaping the object – initiates the performance. In this context, the active role of the wearer can be understood in two ways. First, the wearer's body physically supports the jewellery, providing a platform for its display. The way the jewellery rests on the skin, the points at which it makes contact and the way it moves with the body – these factors all contribute to the performance of the jewellery. They shape its visual presentation and its light-reactive transformation. Second, the wearer's personal interpretation of the work shapes how the work is perceived and interpreted by the wearer. In later development of my studio practice, I primarily worked with dancers, and they engaged with the wearable object on a more visceral, embodied level. As dancers, they interact with the installations not only visually but physically, using their bodies to explore and express the concepts and emotions inherent in the work. This unique, intimate relationship with the artwork results in a different set of responses, as dancers experience the work from within, merging their own artistic expression with that of the object itself.

In the collaborative workshops, the dancers were encouraged to experiment with various ways of incorporating the light-reactive jewellery into their movements and

gestures. For example, in *Touch the Light Workshop II*, I worked with three dancers whose expertise is in dancing, choreography and acting. I first set up an installation piece (Section 4.5.2.2) and then invited the dancers to explore the work in the format of group performance and let them develop their own understandings of the properties of light-reactive materials. Dancer 1 commented on her exploratory approach in the performance:

In this group performance, although we created a simple “story” that we took on roles as “creatures” fighting for “territorial” space, the focus of the performance was not so much on this storyline as it was on our improvised movements and the simulations created by the materials within the dimly lit environment. This allowed us to navigate our relationships with the objects and each other more freely. (Dancer 1, *Touch the Light Workshop II*)

Their exploratory approach through iterative rehearsals allowed them to redefine their relationships with the objects and one another. Without predefined stories or narratives, the dancers were given the freedom to assign their own meanings to the objects they interacted with during the performance. This process of attributing meaning and developing relationships with the objects and performers exemplifies the recontextualisation and reinterpretation of established performative actions, a central component of “restored behaviour”. The exploratory nature of the performance encouraged the dancers to engage in a more fluid, dynamic exchange with the objects and each other, resulting in open-ended, exploratory performances.

Schechner (1985: 36) proposed the concept of “restored behaviour”, meaning that every performance is “twice behaved”. This refers to the idea that a performance is composed of a series of repeated, recognisable actions or behaviours that are re-enacted within a specific context. The restored behaviour offers a framework for understanding the performative nature of human actions and the role of repetition in shaping the experience of performance. Schechner (1985) indicated that this concept can be applied to various forms of performance, including theatre, dance, ceremonies and even everyday social interactions. It emphasises the interplay

between the past and the present, as well as the role of the performer in interpreting and recontextualising pre-existing actions in performance.

An intriguing experience in my studio practice of making, wearing and viewing light-reactive jewellery was closely working with darkness. The light served as a stimulus that transformed my work into a dynamic and immersive experience, one that underscores the interplay between light and shadow, thereby evoking a multisensory bodily experience. Drawing on Merleau-Ponty's (1962) phenomenological perspective, the light-induced interplay between light and shadow in my work can be seen as a manifestation of the body's engagement with the world. According to Merleau-Ponty (1962: 146), the body is the primary means through which we experience the world; this assertion highlights the central role of the body in experiencing our surroundings:

The body is our general medium for having a world. Sometimes it is restricted to the actions necessary for the conservation of life, and accordingly it posits around us a biological world; at other times, elaborating upon these primary actions and moving from their literal to a figurative meaning, it manifests through them a core of new significance: this is true of motor habits [sic] such as dancing. Sometimes, finally, the meaning aimed at cannot be achieved by the body's natural means; it must then build itself an instrument, and it projects thereby around itself a cultural world.

Building on this perspective, we understand that our body can be perceived as a dynamic entity, constantly adapting and evolving in response to its interactions with the world around it (Stern, 2013). I have reflected this notion of how my body perceives light, materials and space in the process of making the installation and the *Touch the Light* pilot project (Section 4.3.3.4). According to Stern (2013: 2), the body could also be perceived “not as a ‘body’, but an embodiment of all incipient activities”. This embodiment is “moving–thinking–feeling” (Stern, 2013: 2), which represents the body's relation to the external world. By adopting a “moving–thinking–feeling” approach, I sought to comprehend the interactivity between myself and the artwork, thereby gaining a deeper understanding of the embodied experience.

Indeed, working with light-reactive materials is an interactive experience in which meaning-making occurs through the dynamic body at every stage, be it making, wearing or viewing the artwork.

This dynamic interactivity and meaning-making process underpin the experiential nature of making, wearing and viewing light-reactive jewellery. While it is true that all jewellery wearing and jewellery viewing are experiential and individualistic, wearing light-reactive jewellery introduces an ephemeral quality, resulting in an added layer of complexity in its interaction with the body and surroundings. As an art jewellery practitioner, my investigative approach focuses on the creation of light-reactive jewellery through performance, embracing the transient and spontaneous nature of this art form, which becomes apparent in live jewellery-wearing experiences as performances. This approach differs from the daily experience of perceiving jewellery.

As the body is a dynamic, ever-changing form, the embodied interactions with the artwork will differ from person to person, resulting in distinctive and non-replicable experiences for every viewer and wearer. In the context of experiencing light-reactive jewellery in darkness, we can say that the body shifts from its primary biological function to a more figurative mode of engagement (Merleau-Ponty, 1962). The dynamic interplay between light and shadow, triggered by the jewellery, stimulates a range of sensory perceptions and elicits a new layer of meaning. For the viewer, vision is primarily responsible for discerning the fluctuations between light and shadow, allowing them to appreciate the dynamic and ephemeral qualities of the jewellery. By witnessing the changing patterns of illumination and darkness, the viewer gains a deeper insight into the artwork's visual dimensions, its responsiveness to light and the manner in which it interacts with the body and the surrounding environment.

Moreover, touch enables a more intimate and personal connection, allowing the wearer to explore the piece's materiality and responsiveness. As the body interacts with the piece, tactile sensations emerge from the material properties of the jewellery, the way it conforms to the body and the subtle changes it undergoes in response to light exposure. The body's interaction with light-reactive jewellery in the

darkness can be considered a projection of a cultural world, as it transcends the natural means of perception. The jewellery serves as an instrument through which the body constructs and explores this cultural world, emphasising the critical role of the body as a locus of perception and meaning-making in accordance with Merleau-Ponty's phenomenological perspective. The dynamic and immersive qualities of light-reactive jewellery, driven by the transformative power of light, invite the wearer and viewer to become more attuned to their bodily presence and the sensory experiences it elicits.

The deep shadows and darkness contribute to generating a multisensory experience for the body, as they create ambiguity in depth and distance, stimulating our peripheral vision and tactile imagination (Pallasmaa, 2012). This interplay between vision and tactility can enhance each other, especially in a dimly lit environment, further enriching the multisensory experience for the body. The relationship between our sensory systems and the environment is complex, but understanding and explaining how they collaborate can lead to the creation of compelling multisensory art spaces. As Pallasmaa (2012) noted, the eyes are meant to collaborate with the other senses, and all the senses, including vision, can be regarded as extensions of touch and skin. Houlgate (1993: 100) further stated:

Vision needs the help of touch, which provides sensations of solidity, resistance and protrusion[;] sight detached from touch could not have any idea of distance, outness, or profundity, nor consequently of space or body.

The complex and multifaceted ways that light and darkness transform space are crucial in shaping our sensory experiences. According to Edensor (2015: 331):

We see both with and in light, and move through and inhabit many levels of day-lit, illuminated, gloomy and dark space. Light conditions the ways in which we perceive – guiding what we are able to see, inflecting visible colours and informing our sense of the shape of space.

Darkness stimulates human curiosity and heightens the senses. To see in darkened conditions is thus not only to perceive the obscurity of things in comparison with how they appear in brighter circumstances but also to engage oneself *in* and *with* the spiritual medium of darkness (Burik, 2019). Moreover, Pallasmaa (2012: 46) notes in his book, *The Eyes of the Skin*, in the chapter titled “The Significance of Shadow and Darkness”:

Deep shadows and darkness are essential, because they dim the sharpness of vision, make depth and distance ambiguous, and invite unconscious peripheral vision and tactile fantasy. The imagination and daydreaming are stimulated by dim light and shadow.

Similarly, one can forget oneself and become absorbed by a film shown in the darkness of a cinema theatre. In such cases, it can feel as if the body is dissolving and merging into the spatial environment, the boundaries of which can no longer be located (Bishop, 2015). While it may seem obvious that in a dark environment we rely more on our visual senses compared to others, our remaining senses do not become isolated. Scientists generally agree that the senses are shaped by environmental, cultural and social circumstances rather than being exclusively innate (Koureas, 2017). The eyes collaborate simultaneously with the body and other senses, and one’s sense of reality is strengthened and articulated by this constant interaction (Pallasmaa, 2012).

6.2 From a jewellery bench to a performance space

In this section, I will engage in an in-depth exploration of how the transformation in my studio environment has fundamentally informed and enriched my creative experience. Drawing from my embodied experience, I will analyse the development of my creative practice, traversing from a tactile, bench-focused making process to an immersive, performative act. By analysing this transitional experience, I aim to understand the intrinsic differences and similarities between these two processes. This analysis will be grounded in my personal studio experience, enabling a nuanced understanding of how the shift of workspace and the change of working methods

impacted my engagement with materials, the body and space. By unpacking the complexities of this transition, I aim to provide a perspective into the fluidity of the studio-based practice, demonstrating how it can adapt, evolve and be enriched by changes in environment and approach.

Jewellery making typically involves working at a bench, also known as a jeweller's bench. This is a workspace specifically designed for the intricate tasks involved in jewellery production. It provides a stable and organised space for jewellers to conduct their work, which often includes complicated activities such as cutting, soldering, setting and polishing. The process of jewellery making is traditionally seen as a static, meticulous practice. It often involves the jeweller working alone, guided by a pre-determined design and a high degree of precision. As Skinner (2013: 29) described it, "the word 'bench' routinely implies a set of assumptions about the kind of activities taking place: handmade, laborious, technically exacting, solitary, bent over – and therefore exclusive". Moreover, it can be argued that the act of creation in traditional jewellery making is typically confined to the physical manipulation of materials, primarily guided by precise hand–eye coordination. This mode of working can be perceived as a focused and bounded process, largely confined to the structured environment of the bench.

In contrast to the traditional solitude inherent in jewellery making at the jeweller's bench, the performance space introduces an entirely different dynamic. It is an environment where improvisation and adaptation are key and where the outcome – a performance – is ephemeral and experiential when compared to the tangible, lasting object of jewellery. Unlike the bench, which is defined by its physical boundaries and set toolkit, the performance space is characterised by its flexibility and ability to accommodate varied approaches and novel techniques. This open-ended environment inspires a transformation in the understanding of the "product". Rather than focusing on a tangible, lasting piece of jewellery, the emphasis shifts to the process itself. The "product" becomes an ephemeral, experiential performance, a testament to the synergy of collaborative creation. I will unpack how the collaborative nature of performance affects the process of making, wearing and viewing jewellery in Section 6.2.4.

Figures 6.2.1 and 6.2.2 present diverse environments for my creative process: the traditional setting of a studio with a jeweller's bench, contrasted with a theatrical space dedicated to exploring light and light-reactive materials. Figure 6.2.1 documents my working process, from material preparations to the final stage. The craft of jewellery making, as I experience it, is rooted in precision and attention to detail, with a significant part of my work comprising repetitive tasks such as hammering, filing, polishing and beading. Filing a piece of metal, for instance, is an exercise in patience and precision. It is about removing just the right amount of material, shaping the piece without damaging it. It requires a keen eye to observe subtle changes in form as the metal yields under the file and an intimate understanding of the material's properties and behaviour. Often, during these repetitive yet meticulous tasks, I find myself entering a unique "flow" state, a mode of deep immersion in the work at hand. Many jewellers may often perceive themselves as entering a meditative state during certain repetitive tasks. This reflects what Leder (1990) described as the "absent body", when the body may be experienced during purposeful or instrumental action – suggesting that it may become "absent" or less perceptible to one's consciousness when it is deeply engaged in a task.



Fig. 6.2-1 Working at the jewellery bench at Edinburgh College of Art (2016). Images are sourced from my interview conducted by Craft Design House and filmed by Pete J Jones of SHOT 67 Independent Commercial Film Production.



Fig. 6.2-2 Work in progress: using my body as a tool to explore or measure materials (2021). Shell Gallery, Parkside Building (left); RBC (right).

In contrast to my working experience at a jeweller's bench, working within a theatrical space offers a significantly different experience. A theatrical space is typically characterised by its expansiveness, its dynamism and the opportunity for movement and exploration it offers. It encourages a more open-ended, improvisational approach to creation. The artwork produced in such a setting often involves broader sensory and spatial engagement, extending beyond the tactile focus of traditional jewellery making. In a theatrical space, my whole body is involved in the creation process. This contrasts with my work at the jeweller's bench, which demands a heightened attention to detail. This detail-oriented work might include tasks such as sensing the texture of the metal using my hands and fingers, which is a focused and tactile form of engagement. However, working in the theatrical space, a wider physical involvement, leads to a different sensory relationship with the materials and the work itself. For example, I move around the space; I feel the weight of a prop; I can hear the echo of my voice in the space and see the spatial relationships between objects from different perspectives. I adorn various parts of my body with these materials, turning myself into a living canvas for my work.

The process of testing light-reactive materials with light leads to a more immersive and experimental making experience. In this context, light serves as a dynamic tool that guides my exploration of diverse materials and design possibilities. The choice of materials, design decisions and fabrication techniques are all significantly influenced by the interplay of light. For example, I need to consider how light interacts with the different light-reactive materials and designs under different light conditions, such as the intensity and direction of light. Additionally, I need to engage both light and my body in my work to observe how these elements interact to impact the visual effects of the body adornments. Hence, light is not only a medium but a “collaborator” in the creation of light-reactive body adornments. It influences every step of the process, shaping the materials and the making, wearing and viewing in the studio practice.

Undoubtedly, the role of my body underscores its significance in the making process. From the jewellery bench to the theatrical space, the creative process is not merely a matter of hand–eye coordination but a holistic bodily experience where every piece of sensory feedback informs the final outcome. The act of creation in this context becomes a live performance, where the body, the materials and the space are all actors in a dynamic, improvisational event. This making process is inherently unique, and its outcomes are varied – each iteration differs from the previous, which is testament to the spontaneous and improvisational nature of making as a performative act.

In the ongoing discourse regarding the evolution of craft spaces, Cheng (2019) put forth the transformative concept of the “World Wide Workshop”. This notion underscores the studio as a dynamic, adaptable entity rather than a static, isolated workspace. This space, as Cheng perceived it, facilitates complex relationships between the individual craftsperson and the wider creative community, engendering a lively and collaborative atmosphere. Moreover, his concept of the “World Wide Workshop” is rooted in his interdisciplinary perspective on craft, advocating for the convergence of diverse knowledge, skills and tools, thereby broadening the scope of traditional studio-based craft practice. Cheng (2019: 11) proposed that craft as studio-based practice is

moving away from the self-reliance implied by traditional studio-based craft practice, and towards an understanding of craft as a discipline that in itself is extremely elastic in terms of propositions and positions: a craft that is always in flux and in a supplemental position. The same qualities (elasticity, adaptability, fluidity) apply to what the space of craft — where and how craft is learned, produced, made, known, discussed, passed on — may look like today.

The qualities of “elasticity, adaptability, fluidity” are also reflected in the changing nature of contemporary jewellery making. While the jeweller’s bench continues to play a significant role in contemporary jewellery making, its dominance is being questioned (Skinner, 2013). Skinner (2013) argued that while the bench serves as a significant site of creation, simplifying and encapsulating the range of activities involved in jewellery making, its dominance may obscure the multifaceted nature of contemporary practices and the varied spaces that inform them. Contemporary jewellery making is marked by the growing adoption of labour-saving technologies, the tension between modernist material-centric craftsmanship and conceptual interpretations of jewellery, and the recognition that the meaning of a piece extends beyond its production to encompass the perspectives of its wearers (Skinner, 2013).

Deckers (2017) also argued that jewellery benches should be changed in contemporary jewellery practice. He opined that the notion of a singular, bench-focused studio has thus been supplanted by a more fluid, multifunctional model. He indicated that a rising number of jewellers are branching out to partake in varied modalities of work, including collaborations, performances, participatory projects and travel for artist-in-residence programmes. This results in the artists often adopting diverse tools and methods, and the workspace is personalised to cater to their varied requirements (Deckers, 2017). This transformation reflects the evolving conceptions and dilemmas within the field itself. As Deckers (2017: 43) asserted:

The dilemma of contemporary jewellery is it wants to be accepted not as art but as a substantive phenomenon in itself; first it should be recognised as an offspring of jewellery acknowledging that jewellery

has its own history and social meaning that goes far beyond misconceptions such as supplementarily, decoration and frivolity.

Moreover, he emphasised that how a piece of jewellery differs from an art object is in its incompleteness until it is worn and interacts with the wearer. This dynamic quality of jewellery, its capacity to evolve and accrue new meanings through its use, is something that many contemporary jewellers, including myself, are deeply attuned to in their practice.

My artistic practice, positioned at the intersection of contemporary jewellery and performance art, aligns with Cheng's (2019) concept of the "World Wide Workshop", which values the studio as a dynamic, adaptable space that fosters interaction and collaboration. This integration of different disciplines, particularly the dynamic and interactive nature of performance art, can propel the evolution of contemporary jewellery practice towards a more elastic, adaptable and fluid form, as envisioned by Cheng (2019). The disappearance of the jeweller's bench in my practice echoes the expanding dynamic nature of contemporary jewellery practice, underscoring the potential for innovative and interdisciplinary approaches within the field.

The creation of light-reactive jewellery in theatrical space extends beyond the traditional confines of a workshop, transforming it into a "stage" for performance. By integrating performance art methodologies, such as improvisation and collaborative creativity, the workspace metamorphoses into a dynamic performance space where the dancer engages with the wearable objects. This interaction, in turn, becomes a crucial part of the making process, erasing the boundaries between the jeweller, the dancer and the creation itself. The images in Figure 6.2.3 demonstrate the collaborative working process engaged in by myself and the dancers within the theatre space.



Fig. 6.2-3 Co-creation process with performance artists in exploring the light-reactive materials (2022).

In this interdisciplinary environment, my role as a jeweller extends far beyond the solitary creation of a piece, evolving into a multifaceted position as a collaborator, director and co-choreographer within the performative space. This expanded function signifies an active shift from the confines of traditional jewellery construction to a dynamic engagement within the sphere of performance. Central to this role expansion is a significant interaction with the dancer, whose bodily movements and interpretative explorations directly influence the jewellery-making/performance-making process. Hence, my role as a jeweller transcends the traditional boundaries of isolated craftsmanship; it integrates an active engagement with the performer into the heart of the creation process. Drawing parallels with Deckers' (2017) argument that a piece of jewellery remains incomplete until it is worn and interacted with, the dancer in my practice, akin to the wearer, becomes an integral participant in the creation and realisation process of the jewellery piece. This relationship foregrounds the dancer's role as a co-creator in my artistic practice, underscoring their vital contribution to the jewellery's dynamic evolution. In the next section, I will further discuss how the collaborative nature of performance affects the creative process of my research.

6.3 Jewellery making in motion

In this section, I will provide a reflective discussion on the intertwined dynamics between dance improvisation and jewellery making. The crux of this discussion will revolve around how the dancer's improvisational engagement with the objects broadens the making process, shifting and extending the creative process from the maker to the dancer. This interaction culminates in the emergence of open-ended art forms. At the heart of this intricate interplay is the transformative impact of light, darkness and light-reactive materials. These elements, foundational to my creative exploration and production, act as catalysts within this complex relationship between light-reactive jewellery, the body and space. The transformative potential of light and light-reactive materials introduces a distinct dynamism to both jewellery making and performance, thereby fostering a symbiotic relationship between these conjoined practices. This exploration and discovery within the overlapping realms of jewellery and performance ultimately blur these boundaries and expand the scope of creative expression.

To better understand the interconnected relationship between dance improvisation and jewellery making in my studio practice, it is instructive to consider broader performance arts perspectives. This involves focusing on the dancer's interaction with objects and how these interactions inform improvisational processes. In creative performance making, objects are active participants in the performance. According to Eckersall et al. (2017), in the field of creative performance making, there is a tradition of creating new relationships of agency. The creation of a performance is closely tied to imaginative collaborations between human and non-human collaborators in the act. Hence, objects, when situated on the stage, usually possess a significant performance-related importance.

Tufnell and Crickmay (1993) highlighted the role that objects can play in a creative process, particularly in the context of improvisation. In their view, "objects provide a means of building a place within which to improvise – a means to dialogue with something other than yourself" (Tufnell and Crickmay, 1993: 121). The concept of "building a place" may refer to the creation of a physical or metaphorical space for

artistic exploration. For example, in dance improvisation, an object could be used as a prop that inspires new movements or dynamics, leading to an unexpected progression of the performance. Similarly, having a “dialogue with something other than yourself” (Tufnell and Crickmay, 1993: 121) suggests that these objects become active participants in the creative process. They are not just passive tools or accessories but partners that can influence the direction and outcome of the improvisation. Tufnell and Crickmay (1993: 193) further argued that:

Any place, idea, object contains possibilities for performance; an image glimpsed, dreamed, heard – ringing in the mind, a vague sense of “something there”. The emergence of a piece depends on how the material is explored and placed. A resonance emerges slowly – significance discovered rather than chosen.

In this way, objects become essential elements for physical interaction, choreographing or narrative tools, offering a “storytelling” value (Bågander, 2015). Particularly in dance performances, where the stage is often bare to facilitate movement and communication through the body (Larsen, 2014), the introduction of objects on stage can add a rich layer of interpretative value to the performance. Within my studio practice, I created rich, dynamic art forms through collaborations with dancers in which we collectively improvised with a variety of objects, including wearable pieces and installations. A representative example of this collaborative improvisation is the *Dancing Jellyfish* project (Section 4.5.2.4) undertaken during *Touch the Light Workshop II*. When I initially presented the wearable object that was inspired by a glowing jellyfish, the dancer suggested incorporating glowing elements at the ends of the fabric straps to emulate the movement of a jellyfish’s tentacles. In this way, even as her body “disappeared” into the darkness, these glowing dots remained prominent and could then be visually captured in the darkness, synchronised with her movements. Additionally, she recommended the use of make-up to further enhance her performance and align it with the thematic essence of the piece.

Furthermore, the multiplicity of materials utilised in the art pieces led to a rich range

of interactions between the dancer and the objects, each inducing distinctive sensory experiences and movement possibilities. For instance, *The Root* (Section 4.6.2.2), with its spikey texture, evoked a sense of edginess and discomfort, prompting the dancer to move with caution and precision. Conversely, *The Falling Petal* (Section 4.6.2.5), with its light and airy quality, allowed for a gentle, fluid engagement, inspiring movements that were graceful, delicate and feather-like. *The Cells* (Section 4.6.2.6), which was made of balloons, created a sense of precariousness and vulnerability. As the dancer found herself surrounded by these inflated objects, her movements reflected a heightened awareness of the fragility of her surroundings, leading to cautious yet daring explorations. These diverse material properties not only influenced the dancer's physical engagement with the objects but also stimulated varied emotional responses and narrative interpretations, further enriching the improvisational process. The dancer's interaction with the wearable objects signified an extension of her body's dynamic and expressive range, as she discovered the rhythmic potential of the objects. The dancer's reaction to the space, light and physical possibilities of the materials used to create the objects (their durability, flexibility, torque, tension, etc.) can be interpreted as an ongoing process of creative expression. This perspective elucidates how the dancer's improvisation becomes part of the jewellery-making process, underlining the symbiotic relationship between these practices.

As a jeweller and observer of the performance, I interpret the dancer's body as a "making site" for jewellery. The dancer's body, in its fluidity and motion, serves as an active canvas that brings out the dynamic qualities of my creations. It can be perceived as a dynamic entity, continuously adapting and evolving in response to its interactions with the surrounding environment (Stern, 2013). Tufnell and Crickmay (1993: 144) provided an insightful perspective on the similarities between making and performing through the use of improvisation as an explorative tool:

Improvisation can apply as much to making things as it does to performing. The making process is one of discovery, in which the precise outcome is unknown at the start. Making proceeds as a

dialogue with materials, the maker watching what is emerging and building upon it.

This assertion highlights the inherent uncertainty and spontaneity embedded in the process of creation, be it in making or performing. It accentuates the fact that the dynamism of the creative process cannot be predetermined. The process of making unfolds as a dialogue with materials – an ongoing interaction in which the maker attentively observes and responds to the emergent forms and possibilities. This is also the key essence of improvisation in performance. The interplay of spontaneity and response informs both my jewellery making and collaborative performances with dancers, thereby blurring the boundaries between the two practices. The dancer's body, as a participant in the extended jewellery-making process, becomes an active site for this “dialogue with materials”, generating an artistic symbiosis that enhances the expressivity of both the jewellery pieces and the performances.

When collaborating with the dancer in improvising the *Ice Cube Necklace* (Section 4.5.2.4), my inspiration was rooted in the idea of making a body scale necklace, one that would interact with the full expanse of the body. Just as a traditional necklace delineates the contours of the neck, this oversized body necklace aims to encapsulate and define the broader bodily space. The dancer's interaction with the oversized individual cube can be likened to the act of adjusting a necklace's beads around the neck. From a jeweller's and designer's perspective, the dancers' movements and interactions with the pieces – whether adjusting, interpreting or altering them – contribute significantly to the ongoing creation process during the performance. This contributes to an open-ended art form, embodying a concept of an “incomplete design”, where the final piece is continually evolving and shaped by the dynamics of the performance.

The idea of an ongoing making or “incomplete design” process is inherent to the design of the theatrical settings. During the *Tree Opera* performance project, I undertook multiple roles – scenic designer, costume designer and prop designer – allowing me to delve into and appreciate the nuances of theatrical thinking. Brook (1996) presented a compelling exploration of the dynamics within theatrical

production. He identified a sequence of relationships that emerge throughout the development of a performance, beginning with the director, subject and designer; progressing to the actor, subject and director during rehearsals; and culminating in the dynamic triad of actor, subject and audience during the performance. While scenery and costumes may evolve concurrently with the performance in rehearsals, practical aspects of stage construction and costume creation often necessitate that the designer's work be finalised prior to the commencement of rehearsals (Brook, 1996).

Based on Brook's experience of working with designers, he suggested a crucial consideration in the relationship between the director and the designer in the context of theatre production, highlighting the importance of a synchronised pace or "sympathy of tempo" (Brook, 1996: 101). Brook (1996) believed that the exploration of shapes, colours and the overall understanding of the play ideally evolves concurrently for the director and designer, and this synchronicity can facilitate mutual discovery and evolution of the performance. However, if a designer provides a solution too quickly, it may force the director to make premature decisions, potentially trapping the performance in an unfit design and hindering its evolution (Brook, 1996). In addition, Brook (1996: 124–25) advocated openness towards "incomplete design" and addressed its essential role in theatrical thinking:

What is necessary, however, is an incomplete design; a design that has clarity without rigidity; one that could be called "open" as against "shut". This is the essence of theatrical thinking: a true theatre designer will think of his designs as being all the time in motion, in action, in relation to what the actor brings to a scene as it unfolds. In other words, unlike the easel painter, in two dimensions, or the sculptor in three, the designer thinks in terms of the fourth dimension, the passage of time — not the stage picture, but the stage moving picture.

Similar to the director–designer dynamic in theatre, the interactive relationship between the dancer and myself also evolved concurrently, fostering mutual discovery of the artwork. In this way, the creation process remained open and fluid,

unbounded by pre-determined outcomes. Brook's (1996) concept of the "fourth dimension" – the passage of time – similarly emerged as a crucial element in my work, continuously transforming across various iterations in my collaborative project with dancers. Moreover, the exploration of jewellery making in motion represents a tangible expression of the idea posited by Tufnell and Crickmay (1993) that improvisation is as intrinsic to the making process as it is to performance. The dialogue between the dancer and the materials unfolds in real time, creating an emergent narrative that builds upon itself, enhancing the overall expressivity of the wearable object. The symbiosis between dance improvisation and jewellery making fosters an enriched and expanded scope of creative practice, opening up possibilities for unexpected artistic expression in my work.

6.4 Collaborative creativity and challenges

The collaborative nature of performance has undeniably been a driving force in the emergence of diverse art forms within my work. As discussed earlier, the transition from a jewellery bench to a theatrical space considerably transformed my working mode, especially impacting the involvement of my body in exploring and interacting with light-reactive materials. Working with performance artists enriched this process, fostering the integration of a wide spectrum of artistic elements and performance art methodologies into my research practice through iterative and reflective processes. This collaborative engagement played a critical role in stimulating creative exploration and innovation, giving rise to a multitude of art forms, spanning from wearable objects to large-scale installations and artefacts intended for live performance. The implementation of performance art methodologies in my research largely expanded the scope of my work: I transitioned from a jeweller to a multifaceted artist engaged in the realms of directing, filming, co-choreography, costume creation, scenic design and photography within a theatre setting. This journey offered a platform to redefine my identity as a contemporary jewellery practitioner and enabled me to assess my professional growth within this interdisciplinary setting by bringing into focus my capabilities, limitations and learning outcomes.

While collaboration has opened up new avenues for creative exploration and enriched the scope of my artistic practice, it has not been without its challenges. One of the key difficulties lies in navigating the diverse perspectives and priorities brought by various participants to the process. Balancing these divergent viewpoints, each shaped by different disciplinary backgrounds and creative ideologies, required a high degree of adaptability, negotiation and consensus-building. In particular, the iterative development of *Tree Opera* brought these challenges into sharp relief. In this performance, the wearable objects I created needed to serve a narrative function, reflecting the plot of the performance. However, certain scenes required these objects to transcend their role as body adornments and transform into scenography installations that dancers could interact with. This contrasted with my initial vision, which centred around the dancer wearing the objects throughout the performance.

Another challenge was the need to balance the aesthetic aspirations of my designs with the practical needs of the performers. The wearable objects I created needed to be not only visually striking but also comfortable, durable and safe for the performers to wear during their performances. This demanded a careful and thoughtful approach to design, ensuring that the performers' physical comfort and freedom of movement were not compromised. Furthermore, the process of collaborating with performance artists necessitated a deep understanding of their physical needs, movements and performance styles. This required me to engage in a continuous dialogue with the performers, observing their rehearsals and considering their feedback during the design process.

As a jeweller, I am used to engaging with hard materials such as metal, acrylics and fluorescent nylons for my jewellery pieces, but the shift to creating larger-scale works demanded a different approach. I turned to fabrics and textiles, materials imbued with greater flexibility, to foster more intimate engagement with the body. In addition, I explored the use of materials such as fluorescent recycled zip ties. For instance, the wearable object *The Root* (Section 4.6.2.2) was an extensive construction, reaching approximately seven metres in length, made entirely from zip ties and fishing lines. However, during the performance, the dancers encountered difficulties in their interactions with these materials. They found the object to be excessively

heavy and uncomfortable to wear during the performance. In response to the challenges encountered, mutual adaptations were agreed upon by me and the collaborators. In *Tree Opera*, this object was transformed into an installation (Section 4.8.2.1). This change allowed the dancer to interact with the work while alleviating the physical burden of wearing it. To ensure adaptability, in *Lipote: An Interconnected Journey*, three dancers wore this piece, enhancing the balance of their movements (Section 4.8.2.2).

The intricacies of the collaborative process inevitably gave rise to creative tensions. However, these tensions served as a productive force, challenging preconceived notions and prompting a deeper exploration of the potential of light-reactive materials in the intersection between contemporary jewellery and performance art. For example, conflicts arising from my aesthetic and material preferences as a jewellery designer and the performers' requirements for comfort and mobility led to innovative solutions that balanced artistic form and function. Moreover, the interdisciplinary nature of this collaboration meant that I had to navigate the different terminologies and methodologies of the fields of jewellery design and performance art. This required a substantial effort to foster effective communication and mutual understanding among all members of the collaborative team. In the next section, I will discuss the making process, focusing on the collaborative nature of performance in this procedure.

6.5 Performing light-reactive jewellery

For performers, bodies are the primary tools for executing and conveying a performance's intent and meaning. Performers communicate through gestures, movements and expressions, creating a multisensory experience for the audience. From an actor's gait to a dancer's posture, every physical manifestation is a component of the overall performance and contributes to the shared understanding between performers and spectators. As spectators, their bodies are also involved in the process of making meaning. The sensory responses – what they see, hear and sometimes even feel or smell – are crucial in their interpretation of the performance. According to Parker-Starbuck and Mock (2011: 210), a crucial role is played by

bodies, both as performers and spectators, in deciphering the operation and meaning of performance:

Whether performing or spectating, bodies are often the means for understanding how performance operates and makes meaning. The interdisciplinary nature of performance studies has encouraged theatre researchers not only to analyse bodies in spaces of performance but to consider how bodies might become or produce performance spaces.

In my work, light-reactive jewellery performance involves the use of materials that change colour, emit light and respond to light. The performer's body is presented as an "absent" status, creating a compelling visual effect. To a great extent, this vivid and dynamic interplay between light-reactive jewellery and light obscures or alters the audience's perception of the performer's body. As an audience member commented, "As a viewer, I felt like I was being drawn into her experience, and I could imagine myself moving with her, trying to understand and interpret the materials in my own way" (Interviewee 3, *Tree Opera*, in Section 5.3).

This intriguing comment illuminates the sensorial and perceptual impact of light-reactive jewellery performance. It potentially reflects the complex interplay of visibility and invisibility, presence and absence, as mediated through the light-responsive materials. In this case, light-reactive jewellery under the performance lens invites us to consider how the jewellery as performer, the dancer as facilitator and the audience as observer coalesce in a shared space to create a dynamic, interactive and communicative performance.

It might be argued that, without bodies, there is no theatre or "live" performance (Parker-Starbuck and Mock, 2011). This visual disruption may challenge our bodily presence, materiality and the role of the body in performance art. However, the "absent" body in a light-reactive jewellery performance compels us to re-evaluate the significance of bodily materiality in theatrical works. Shepherd (2006: 10) articulated that theatre encompasses more than merely an art of bodies:

Theatre as a practice in which societies negotiate around bodily value and bodily order. In that negotiation, theatre is not simply an art of bodies but an art of bodily possibility, an event where the limits of body are negotiated, fetishised, imagined somehow else.

This concept is embodied in puppet theatres, where the absence of human bodies is a fundamental characteristic. In this space, the audience is actively encouraged to perceive the puppet body as an entity that deviates from conventional bodily norms. They are invited to interpret it as something “somehow else”, a process that requires and fosters a rich layer of imaginative engagement and interpretation (Parker-Starbuck and Mock, 2011). Similarly, in the context of light-reactive jewellery performances, the “absent” body does not signify a lack but rather serves to provoke a re-evaluation of the significance of bodily materiality in theatrical works. In this scenario, the jewellery, activated by the light, occupies the space traditionally held by the human body. It is, in a sense, performing, and the audience’s attention is drawn to its form, its interplay with light and the resultant visual spectacle. In this next section, I will further unpack this concept, focusing on the role of bodily co-presence in performance between the performer and the audience.

When considering jewellery from a performance perspective, we delve into an intriguing exploration of the communicative and interactive possibilities that arise from the dialogue among the jewellery, its wearer and the viewer. In the particular case of light-reactive jewellery, the jewellery itself performs a dynamic role, responding and transforming according to light conditions. In essence, the jewellery takes on the mantle of the “performer” in this context. However, the performance is far from being a stand-alone act; it is inherently contingent on the interplay between the wearer and the viewer. The wearer becomes the enabler or facilitator of the performance, their movements and the changes in their environment (particularly in light), causing the jewellery to transform in spontaneous and unpredictable ways. The wearer’s body, in effect, becomes the stage on which the jewellery performs.

Simultaneously, the viewer’s role is not passive; their reactions, interpretations and engagement with the transforming spectacle add layers of meaning and significance to the performance. For example, after watching a live performance of *Tree Opera*,

one audience member commented, “I felt emotionally connected to the performance and was moved to physically interact with the work. I could relate to the performer by imagining myself in her shoes and considering how I would approach the lighting and materials” (see interview, Section 5.3). This remark from the audience reflects the shared body and shared space in the performance, illustrating the impact of the autopoietic feedback loop in forging a deeper personal and interactive experience of the artwork. To summarise, the light-reactive jewellery, when viewed through the lens of performance, provided insights into the interplay between the jewellery as the performer, the dancer/wearer as the facilitator and the audience as the observer. This interplay creates a dynamic, interactive and communicative performance.

6.6 The dispersed self

In Section 4.1.3, I initially explored how the transformative power of light and darkness impacts our sensory perception. Since I started my studio practice and began working closely with light and darkness to create light-reactive jewellery, this immersive, hands-on experience has provided me with a more profound understanding of the sensory experiences of the body. I gained a deeper understanding of how the body may be shaped and influenced by wearing and viewing light-reactive body adornments, particularly in dynamic interaction with darkness. In this section, I will discuss this further and draw insights I gained from my practical and theoretical investigation into these concepts.

According to Petersen (2015), experiencing a space shaped by light and darkness requires physical activity from the body, yet it does not invariably result in an enhanced perceptual awareness of the body and self. A captivating phenomenon was noted by a dancer during a group performance (Section 4.5.2.2), which involved an intriguing experience of a dispersed sense of self. As the dancer observed the movements of her fellow performers in the dimly lit environment, she was “shocked” by her own movements. As she said, “I was so immersed in the darkness and didn’t realise that it was myself moving or touching the glowing materials” (see interview, Section 5.2). This fascinating comment inspired me to delve deeper into the dispersed sense of self and forgetfulness of one’s body and seek to uncover the

underlying mechanisms that contribute to such captivating sensory experiences in the wearing and viewing experience of light-reactive jewellery.

Before investigating the dispersed sense of self, we need to explain the role of the body, which is at the origin of experience and expression of space. Merleau-Ponty (1962: 131) argued that “to be a body is to be tied to a certain world, as we have seen; our body is not primarily in space: it is of it”. He posited that the body is not just a physical entity that we possess or control; it is also the medium through which we engage with and experience the world. Hence, the body is an embodied self, a locus of experience and expression. Moreover, Merleau-Ponty’s (1962) concept of the body as both subject and object can provide an insightful lens through which to interpret and understand this dancer’s intriguing experience.

The dancer’s body was not just passively present in the dimly lit environment; it was moving, interacting with glowing materials and engaging with other dancers. However, the dancer’s experience also reveals the body as an object. She was “shocked” by her own movements, suggesting that she saw her body from an external perspective. This surprise implies a moment of objectification, where her body is perceived as the “other”, something separate from her subjectivity. This dual experience of the body as both subject and object is central to the dancer’s dispersed sense of self. She is at once the “seer” and the “seen”, the active performer and the passive object of her own perception. This ambiguity, this experience of “being both”, creates a “dispersed sense of self”. In this context, the dancer’s experience demonstrates how the dual role of the body as subject and object can disrupt our typical understanding of selfhood and identity. Her experience underscores the complex, interwoven relationship between the body and self, revealing how our perceptions of our own bodies can shape, disrupt and transform our sense of self (Merleau-Ponty, 1968).

Leder (1990) examined all the ways in which the body is absent – forgotten, alien, uncontrollable and obscured. According to Leder (1990), the body ordinarily “fades” and “disappears” from our experience when we are engaged in that purposeful action that creates our environment and governs our daily routines, yet it can

abruptly reappear as a focus of attention when we are ill or in pain and when it is at its least socially productive. Leder (1990: 1) also suggested another example to explore regarding the relationship between purposeful action and corporal disappearance:

When reading a book or lost in thought ... I experientially dwell in a world of ideas, paying little heed to my physical sensations or posture. Nor is this forgetfulness restricted to moments of higher-level cognition. I may be engaged in a fierce sport, muscles flexed and responsive to the slightest movements of my opponent. Yet it is precisely upon this opponent, this game, that my attention dwells, not on my own embodiment.

In the context of the dancer's experience, as she became fully absorbed in the group performance, her attention was directed towards her fellow performers and their movements. This "purposeful action" led to a fading of her own body from her conscious experience, creating a dispersed sense of self. This state of heightened attention and diminished bodily awareness allowed the dancer to become more deeply immersed in the performance, leading to her surprise when she became aware of her own movements while manipulating the fluorescent materials.

Further to the above, and because it speaks to something essential but poorly understood – something that sits at the heart of this thesis – it is essential to attempt to understand how the darkness impacts our perception of the environment. As Morris (2011: 315) noted, "the darkness forces one to question how one's body is in relation to that which surrounds, challenging one's human sense of bodily presence and boundary". Human sensory orders are recalibrated when faced with the reduced illumination levels of the night; it is harder to judge depth and distance, details are obscured, colours are muted and one is obliged to compensate for this loss of visual acuity by drawing on the other senses (Morris, 2011). The significance of this sensory adaptation is underscored by Pallasmaa (2012: 50), who posited that "deep shadows and darkness are essential, because they dim the sharpness of vision,

make depth and distance ambiguous, and invite unconscious peripheral vision and tactile fantasy”.

In this context, the darkness present in the dancer’s environment further emphasises the complexity of the relationship between the body and the self. Performing light-reactive materials in a dark space means that the dancer is unable to fully see her own body, leading to a heightened sense of embodiment and a closer connection to her body as a sensing and feeling entity (Morris, 2011). As the dancer interacts with the light-reactive materials in a dark environment, the materials emit a glow that contrasts with the surrounding darkness. This contrast creates a unique visual experience characterised by a mixture of light and shadow, which contributes to a sense of ambiguity. The dancer described the light-reactive materials as “an extension of my body”. The dancer also noted: “Whenever I touched something, it became part of me” (Dancer 1, *Touch the Light Workshop II*). As the dancer interacted with the glowing materials, she could not rely solely on sight to navigate her surroundings or to understand where her body ended and the materials began. Instead, she needed to use her sense of touch more intensively, along with the other senses, which led to a heightened, tactile experience where the materials “became” an extension of her body. Undoubtedly, articulating the intricate experience of manipulating light-reactive materials in the absence of light presents a great challenge. This difficulty stems not from a deficiency in words but rather from the embodied nature of the experience. It is situated in the dancer’s corporeal understanding and perception of the phenomenon. The actuality of performance opens up a realm of potentiality for entering into diverse and transformative states of being.

7. Conclusion

Exploring jewellery through the lens of performance art presents a rich and complex field that offers new insights into contemporary jewellery as an interdisciplinary subject. This research draws upon a long-standing tradition in fine jewellery where light is intricately woven into the design of pieces, serving as an interactive and performative element. Exploring light-reactive materials as body adornments expands upon this tradition, adding a new dimension to the interdisciplinary scope. In its creation, wearing and observation, light-reactive jewellery embodies a unique form of performance, with the body playing a significant role in transforming interactions between jewellery, light and space into performances. Drawing on performance methodologies enables an in-depth exploration and analysis of these interactions, providing a platform for investigating various aspects of embodiment, sensory experiences and the interplay between the body, light-reactive materials, light and space. The insights and knowledge that have emerged from the creative practice in this project can enrich both the fields of contemporary jewellery and performance art.

7.1 Research limitations

While conducting this research, several limitations were encountered that may affect the generalisability and scope of the findings. These limitations should be considered when interpreting the results and drawing conclusions. First, the involvement of a limited number of audience participants and dancers in the research restricts the generalisability of the findings. The small sample size suggests that the results may not be directly applicable to a broader context. However, the qualitative nature of this study allows for a deeper understanding of the participants' experiences, which could inform future research in this area.

Moreover, while I initially worked with light-reactive fabrics in the first two workshops, I had the opportunity to plan and explore a broader array of materials in subsequent stages. However, the COVID-19 pandemic significantly disrupted the research process, as I had to work in various locations due to the differing availability of studio

spaces. This compelled a shift in focus towards more practical and accessible options. As a result, fabrics became the primary material component due to their ease of transport, storage and flexibility. They are well suited for larger-scale projects, allowing greater freedom for dancers' movements during performances. This shift laid the foundation for developing costumes in the later stages of my studio work.

Regarding the interview data, semi-structured interviews were conducted on-site with audience members following their participation in the *Touch the Light* pilot project and *Touch the Light Workshop I*. These on-site interviews allowed the participants to reflect on and respond to their experiences directly, thereby enhancing the immediacy and relevance of their feedback. However, due to COVID-19 restrictions on social activities and constraints on using the on-campus facilities and spaces, all subsequent interviews (*Touch the Light Workshop II* and workshops during phase three) were conducted online. This change in methodology could have influenced the quality of the data obtained, as participants had to rely on their recollections when discussing certain specific embodied experiences during the workshop. To address potential recall bias, visual documentation was conducted throughout the workshop process. This included capturing full video recordings and photographs, which served as valuable reference points during the online interviews.

7.2 Future work

The conclusions drawn from this research mark the end of the exploration and, perhaps more importantly, serve as a stimulus for further investigations and explorations. Some potential future research directions include:

Exploring other types of light-emitting smart materials: While this research has primarily focused on investigating light-reactive materials as body adornments, future studies could explore other varieties of light-emitting smart materials. For instance, thermochromic or electroluminescent materials could be examined to assess their potential at the intersection of contemporary jewellery and performance art contexts.

Investigating the potential of integrating lighting technology with light-reactive materials: As wearable technology continues to advance, there is an opportunity to combine lighting technology with light-reactive materials in the creation of jewellery pieces. For example, light-emitting sources could be embedded within light-reactive wearable objects. This could involve experimenting with new methods to manipulate and control light sources within the artefacts, as well as exploring the performative qualities of light-reactive jewellery designs.

Further exploration into audience participatory light-reactive jewellery performance: Given the constraints imposed by COVID-19, physical interactions between audience participants and the artwork were limited in the later stages of the research. In future studies, efforts could be made to enhance audience engagement with the artwork. This might involve encouraging physical interaction with the light-reactive artefacts during or after the performance or by allowing greater freedom of movement within the space to observe the jewellery performance from different angles. These measures could contribute to a deeper understanding of the sensory experience of wearing and viewing light-reactive jewellery.

Further exploration into sustainable applications of light-reactive materials: While this research has primarily used recycled fluorescent plastics and fabrics to create body adornments, there is room for further investigation into the sustainable and creative use of light-reactive materials. For example, the recycled fluorescent plastics employed in this study could be reprocessed into alternative forms or combined with other types of light-emitting smart materials to enhance the design and visual impact of performative jewellery.

7.3 Contribution to knowledge

Enriched understanding of light-reactive jewellery in alternative materials:

The study contributes to the evolving dialogue on the use of alternative materials in contemporary jewellery, specifically focusing on light-reactive materials within the category of light-emitting smart materials, which have not been explored extensively. Building upon the significant role of light in facilitating performative qualities and interactive relationships between jewellery, the wearer, the viewer and surrounding space in traditional fine jewellery, this study extends these interactive and performative qualities by investigating light-reactive jewellery through an interdisciplinary approach. Situated at the intersection between contemporary jewellery and performance art, the in-depth analysis and creative exploration of light-reactive materials as body ornamentation and performative wearable art forms, which emerged from this research, can benefit artists and designers from both art fields who may seek to expand their creative vocabulary and artistic approaches by engaging with this material in their practice.

Expanded understanding of blurred boundaries between contemporary

jewellery and performance art: This research has presented great potential for blurring the boundaries between contemporary jewellery and performance art by expanding the methodological approach of performance art to contemporary jewellery. Working with performance artists in creating light-reactive wearable objects and performances, this research challenges the traditional understanding of how jewellery can be experienced visually and physically on and by the body. Incorporating jewellery within the realm of performance art has enabled the transient and dynamic wearing and viewing of jewellery, necessitating the active role of the body in shaping the artwork. This challenges the conventional method of presenting jewellery within a static framework of showcases or plinths in galleries and museums. It promotes a more dynamic and interactive engagement with jewellery as a performative approach for artistic expression and audience participation.

Expanded aesthetic expressions: Exploring light-reactive body adornments through performance methodologies has significantly facilitated the generation of

open-ended art forms in this artistic research. The interplay between light, darkness and light-reactive materials is key to activating the performative qualities of light-reactive jewellery. Furthermore, collaborative work with performance artists, along with the processes of co-creation and co-reflection, transforms the making, wearing and viewing of jewellery into not only large-format wearable art but also ever-changing performances. By incorporating interdisciplinary experimental approaches, unexpected creative outcomes have been achieved, thereby contributing new insights to the intersected discourse on contemporary jewellery and performance art.

Rich visual and text materials: This research makes a significant contribution to knowledge through the generation of rich visual and textual materials. These resources emerge from the active participation and engagement of various study participants, including audience members and performance artists participating in creative and collaborative workshops. Through active engagement in the workshops, participants contribute to an enriched dialogue between the practices of contemporary jewellery and performance art. Their experiences, captured through visual and textual mediums, provide a multifaceted understanding of the intricacies of sensory experiences between the body, light-reactive materials, light and space. Furthermore, the rich visual and textual content created through these workshops contributes to the conceptualisation of light-reactive body adornments and serves as an informative archive for future research. The visual and textual content has also provided detailed documentation of the researcher's reflective practice, offering an in-depth understanding of the researcher's expanded roles from a jeweller to an interdisciplinary artist.

An interdisciplinary conceptual framework for contemporary jewellers: This research develops a conceptual framework that elucidates the possibilities and methodologies for conducting successful interdisciplinary collaborations between contemporary jewellery and performance art. Such a framework is increasingly important within the ever-evolving landscape of contemporary jewellery, which is situated between more established disciplines and informed by them. The interdisciplinary exploration carried out in this research underscores the mutual benefits for artists from both contemporary jewellery and performance art. By

borrowing performance methodologies, contemporary jewellery artists can engage in a more interactive creative process that richly informs their design processes, especially in active engagement with the body or collaboration with performance artists in the making process. For performance artists, the process provides a lens to create performance from the perspective of material attributes, offering an expanded repertoire of expressive tools to enrich artistic approaches and expressions.

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Appendix 1: Research activities, art exhibitions and awards

Conferences & Lectures

2023 Presented at Inside/Out Festival, PGR studio, research event at Birmingham City University.

2022 Presented at Borders, Cultures and Communities Conference, PGR studio, Birmingham City University.

2022 Contemporary Jewellery Online Lectures at Sichuan Fine Arts Institute

2020 Presented at Inside/Out Festival, PGR studio, research event at Birmingham City University.

2019 Lightning Talk, Handmade by Machines Symposium Exhibition, School of Jewellery, Birmingham City University.

2019 Lecture at Melbourne Polytechnic, Australia.

2018 Emerging Artist, Lecture Series at SOFA Chicago, United States.

Art Exhibitions

2022 Dazzle Invites pop-up and virtual exhibition, London.

2022 Cluster Contemporary Jewellery Fair, London.

2022 New York Jewellery Week, (Represented by Charon Kransen Arts).

2022 *Research through Jewellery* curated by Roberta Bernabei, Florence Jewellery Week,

2021 *Artistry-RE-Imagined*, spotlight on the East, New York Jewellery Week. Charon Kransen Arts.

2021 *Shape of Nature*. DBC International Designer Space, Beijing, China.

2021 Beijing International Jewelry Art Exhibition, China.

2021 ACJ Open members' online exhibition. <https://acj.org.uk/index.php/2021-open/669-wanshu-li>

2020 *See the Big from the Small* Exhibition, [The Closer Gallery](#), Beijing, China.

2020 *Alternative Options* Exhibition, the second season of NoCC pop-up Gallery, Shanghai, China.

2020 *Metallophone 5: MUSEUM*, the fifth Contemporary Metal Art Biennial in the Lithuanian National Museum

2020 Artist & Fashion Curated Jewellery Exhibition by Lacy Barry at AA-Collected, Berlin.

2020 Goldsmiths' Craft & Design Council, Promotion Exhibition at Birmingham Assay Office.

2020 Goldsmiths' Craft & Design Council Competition/Exhibition. London.

2019 New York Jewellery Week (Represented by Charon Kransen Arts).

2019 SOFA Chicago, USA (Represented by Charon Kransen Arts).

2019 Handmade by Machines Symposium Exhibition, Vittoria Street Gallery, School of Jewellery, Birmingham.

2019 Group Exhibition, Edinburgh College of Art, 2019 Elements.

2019 "East Asia", Galerie Biró Schmuck, Munich.

2019 "Précieux!?" Exhibition at Alliages Art Gallery, Lille, France.

2019 Group Exhibition, Oeno Gallery, Ontario, in Canada.

2019 "Précieux!?" Collective Launch Exhibition, Plymouth, UK

2019 LOOT, The Museum of Arts and Design (MAD), New York.

2019 Go with the Glow Solo Exhibition, 30 Mar-14 April, Bini Gallery, Melbourne, Australia.

2019 Shortlist of BKV Prize for Young Applied Arts, Internationale Handwerksmesse IHM, Munich.

2018 Group Exhibition, Cyprus Art Gallery, Girona, Spain.

2018 New York Jewellery Week (Represented by Charon Kransen Arts).

2018 SOFA Chicago, USA (Represented by Pistachio Contemporary Art Jewellery)

2018 Nexus: Meetings at the Edge, Ruthin Craft Centre, Denbighshire, United Kingdom.

2018 JOYA Barcelona Art Jewellery Fair, Guest Artist, Spain.

Awards

2022 Postgraduate Pedagogies Vol. 2, Cover Design Competition, second prize.

2020 Gold Award, Fashion Led Conceptual Jewellery, the Goldsmiths' Craft & Design Council.

2019 Shortlist of BKV Prize for Young Applied Arts, Internationale Handwerksmesse
IHM, Munich Jewellery Week.

Appendix 2: Interview questions

Interview questions for audience participants

1. Can you describe your first impression of the work?
2. Could you use a few words to simply describe your feelings about being in that space?
3. How do you perceive your role within the installation? Do you see yourself as part of the artwork, or do you consider yourself a viewer or an observer?
4. How would you describe the sensory interactions between the objects and your body during the activity? Could you provide some details?
5. Were there any moments or experiences that interested you the most? What was the most attractive or engaging part of this activity for you?
6. To what extent do you believe your behaviours were influenced by other audience members?
7. How did the dark nature of the space impact how your body interacted with the objects?
8. Did the installation change your perception of how jewellery, as a body adornment, can be worn and engaged with?
9. Is it essential to physically interact with the work in order to fully understand it? If so, why?
10. After taking part in this activity, how would you describe it? Was it a new experience for you?
11. Have you come across any other installations or experiences elsewhere in your life? If you have, could you provide some details about those experiences?
12. Have you ever attended any jewellery exhibitions before?
13. Were you allowed to touch and try on any jewellery?
14. Could you explain a bit more about why you believe it's important to touch and try on the jewellery pieces in exhibitions?

Interview questions for performance artists

1. What was your first impression of this installation? Was it a new kind of experience for you? (Have you ever used these types of materials in your work?)
2. Have you ever worn any types of jewellery or body adornment in your performance? If you have, how would you describe the interaction between jewellery and the body during your performance?
3. When performing in such a dark atmosphere with a limited light source, did you feel your body interact with the object differently?
4. Do you think the light in this installation visually and physically enhanced your sensory experiences while performing? Could you provide some details?
5. When you perform this piece of work, would you describe it as 'wearing' the work?
6. Would you like to present your performance by engaging this type of installation, or would you prefer not to? Why?
7. If you imagine your performance of this piece of work with the audience, what kind of audience reaction would you be expecting?
8. Do you think there are any limitations to integrating this form of installation into your performance?
9. Would you prefer to perform this installation in a different space rather than a theatre? What kinds of occasions or environments would you like to perform it in?
10. Through your interactive experiences with the installation, do you believe your dance movements were influenced by how the installation was designed and presented, or do you think your body's movements can reshape this piece of work?

Appendix 3: Ethics documentations



Participant Information Sheets

(Participant information sheet for audience participation as an example)

Date	No.
Study title	Exploring the potential of UV-reactive materials as body adornment through performance art
Aims of the study	<p>This practice-based research project aims to explore the application of light-reactive materials in body adornments and expand the methodological approach of performance art studies to the field of contemporary jewellery. Through collaborative engagement with performance artists, the creative process of making, wearing and viewing light-reactive materials is transformed into performative experiences. Co-creation and co-reflection are central to the collaborative projects, which not only facilitate the emergence of open-ended art forms but also contribute to rich iterations of creative practice. Within this context, light plays an instrumental role in further transforming the viewing and wearing of artefacts into an immersive and theatrical experience, inviting all participants to reconsider their roles.</p>

<p>Research questions</p>	<ol style="list-style-type: none"> 1. What are the specific interactions between body, light and space that are facilitated by light-reactive materials worn on the body? 2. How can performance methodologies be used to explore and analyse these interactions? 3. How does the collaborative nature of performance impact on the process of making, wearing and viewing jewellery?
<p>Invitation to participate</p>	<p>You are being invited to take part in this research project. Before you decide to do so, it is important that you understand why the research is being conducted and what it will involve. Please take the time to read the following information carefully. Feel free to ask anything that is not clear or if you would like more information. Take the necessary time to decide whether or not you wish to take part.</p>
<p>Why you have been invited?</p>	<p>You have been invited as you are working in dance or performance area. Your involvement will help to explore the performing potentials of jewellery by engaging light and body movement in this research.</p>
<p>Statement about voluntary participation</p>	<p>Your participation is entirely voluntary. You have the right to withdraw at any time during this project without providing reason and that your data will be destroyed immediately if you wish.</p>
<p>What will happen next if you take part?</p>	<p>You will be invited to an art workshop, which may last approximately 30-40 minutes (but no more than 1 hour). During the workshop, you will be encouraged to interact with the art</p>

	<p>installation or artefacts. The installation will be set up in a dimly lit environment with LED lights in advance. The entire process will be recorded through filming and photography, and your interaction with the artwork will be observed. After the recording is complete, you will have the opportunity to review any video or photographic data.</p>
<p>Potential risks of participation</p>	<p>Participating in this research is not expected to pose any disadvantages or discomfort to you. Any potential physical or psychological harm or distress involved will be no different from what you might encounter in your everyday life. During the research, you will be invited to enter an installation space with a dimly lit and a relatively enclosed space, illuminated by LED lights. If you have any concerns regarding the lighting conditions or environment, please do not hesitate to inform the researcher. If you feel uncomfortable at any point, you have the option to withdraw from the research activity at any time, either before, during, or after the workshop.</p>
<p>Confidentiality arrangements</p>	<p>Due to this project include photographs and video captures for data collection, your name will be anonymous, and any personal information will not be linked to any images or videos.</p>
<p>Data protection</p>	<p>The collected data would be handled confidentially at all stages of the study and will be securely stored on a secure BCU server. Consent forms and participant information sheets will be stored separately from the data and stored at a secure location at BCU. The collected data will only be available to the researcher and the PhD supervision team to get a better understanding of the research activities. All the data will not be shown to or used by any other third parties of individuals or organisations without receiving agreement from the participants.</p>

	<p>If you raise any concerns about how your personal data is used, please contact BCU Data Protection Officer on informationmanagement@bcu.ac.uk or +44 (0)121 331-5288 or Data Protection Officer, Information Management Team, Birmingham City University, University House, 15 Bartholomew Row, Birmingham, B5 5JU.</p> <p>You can also complain directly to the Information Commissioner at Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF, further information available at www.ico.org.uk</p>
Participants' rights	You have the right to informed consent, the right to withdraw from the study at any stage (without prejudice), the right to anonymity and data protection.
Details of supervision team who has been responsible for reviewing the study	<p>Professor Stephen Bottomley: stephen.bottomley@bcu.ac.uk</p> <p>Dr Sain Hindle: sian.hindle@bcu.ac.uk</p> <p>Professor Aleksandar Dundjerovic: aleksandar.dundjerovic@bcu.ac.uk</p>
Details of Supervisors/senior academics	<p>Professor Stephen Bottomley: stephen.bottomley@bcu.ac.uk</p> <p>Dr Sain Hindle: sian.hindle@bcu.ac.uk</p> <p>Professor Aleksandar Dundjerovic: aleksandar.dundjerovic@bcu.ac.uk</p>
Complaint	<p>If you would like to make a complaint, please contact</p> <p>DoctoralResearchCollege@bcu.ac.uk or BCU_Ethics@bcu.ac.uk</p>
Contact details	<p>If you have any further questions or inquiries, please contact wanshu.li@mail.bcu.ac.uk</p>



Consent Form Template

Date

No.

Study title	Exploring the potential of UV-reactive materials as body adornment through performance art
Name of researcher	Wanshu Li
Study number	s13155684
Summary of the project	<p>This practice-based research project aims to explore the application of light-reactive materials as body adornments and expand the methodological approach of performance art studies to the field of contemporary jewellery through collaboration with performance artists. Through collaborative engagement with performance artist, the creative process of making, wearing and viewing of light-reactive jewellery is transformed into performatives experiences. This transformative process not only facilitates the emergence of open-ended art forms but also and fosters a dynamic interplay between the body, light and space. Within this context, light plays an instrumental role in further transforming the viewing and wearing artefacts and space into an immersive and theatrical experience which invites the audience to reconsider their roles, transforming from passive observers to active participants within this dynamic setting.</p>
An invitation to participate	<p>You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please feel free to ask anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.</p>

Statement about voluntary participation	Your participation is entirely voluntary. You have the right to withdraw at any time during this project without providing reason and that your data will be destroyed immediately if you wish.
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*Please initial the box

1. I confirm that I have read the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, and the collected data will be destroyed.
3. I agreed be photographed, filmed or interviewed during the research activities.
4. I understand that I have the right to informed consent, the right to withdraw from the study at any stage (without prejudice), the right to anonymity and data protection.
5. Collected data such as image/videos/quotes will be anonymously used in reports and papers and publications.
6. I agree to take part in the above study.

Name of Participant Date Signature

Name of Person taking consent Date Signature

Statement of Identified Ethical Risks

This research will consider any ethical issues related to the research, following the ethical guidelines of Birmingham City University regarding research procedures and data gathering. The practice-based research aims to explore the application of light-reactive materials in body adornments and expand the methodological approach of performance art studies to the field of contemporary jewellery. Apart from studio practice, the research methods also involve a series of audience participation workshops and collaborative performance workshops with performance artists. This research will involve observational activities, interviews, and the recording of workshops via video and photography. All data will be collected and analysed from these sources, including video recordings, images, and interviews.

A mixture of blue and violet colours of light generated by Light Emitting Diode (LED) lighting devices was used to initiate the 'fluorescence' phenomenon in the light-reactive materials, resulting in a characteristic glowing effect perceived as bright, vibrant, or 'neon' colours. The blue or violet coloured light used in the creative workshops and performances does not pose health risks. All participants will be informed in advance regarding the specific lighting conditions, materials, and facilities involved in the workshop. If participants have any concerns about the creative workshops or feel uncomfortable at any point, they can withdraw from the research activity at any time, whether before, during, or after. Additionally, a warning sign regarding filming and the use of lights will be placed at the entrance of the workshop or performance space to remind the participants.

Permission will be required from all participants before conducting workshops, exhibitions, interviews and observations. Participants approval will also be necessary before using their information, and it will be imperative to protect individuals' privacy. All participants will be informed in advance about the research purpose and how the collected data will be used for this project. Each participant will have the right to stop being involved in the project at any time if they wish to do so. The collected data and information will be handled confidentially and securely and will not be shared with any other individuals or organisations without receiving explicit agreement from the participants. Moreover, intellectual property rights will be addressed through clear agreements between the collaborators. Agreements will be made between the collaborators by confirming the co-authorship and the shared use of the creative work that emerges from the collaborative projects. All artists involved in the collaborative work will be credited for their contributions to the artwork.

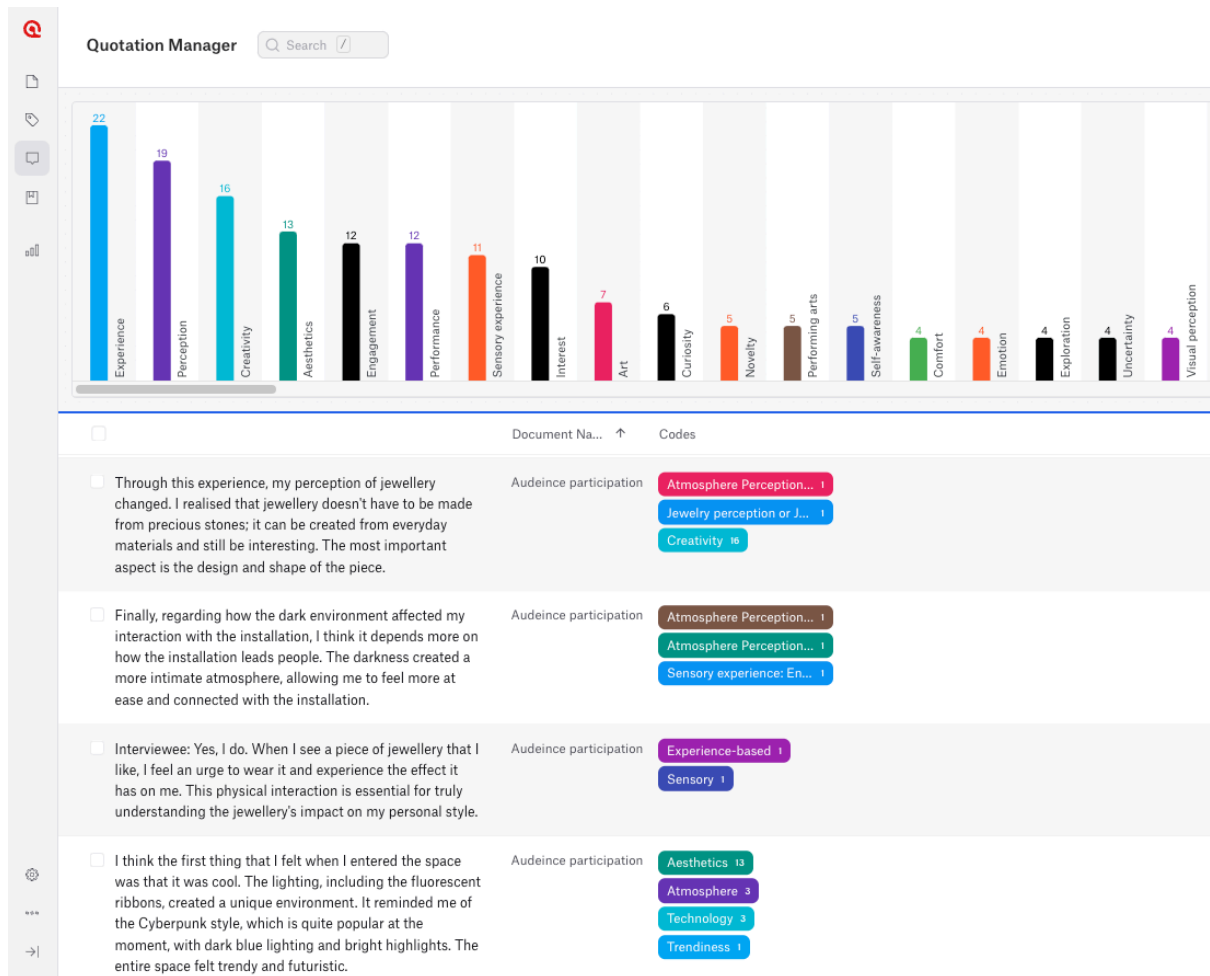
Appendix 4: Ethical approval

Ethical Review of Research

Name of researcher	Wanshu Li
Title of Research	Exploring the potential of UV-reactive materials as body adornment through performance art
School	Jewellery
Unit of Assessment	UoA34 Art and Design
UoA review team	Dr Anne Boulwood
Summary of Ethical Concerns identified at self-assessment	<p>Research project involves agreed informed consent interviews, observational activities, focus groups, questionnaires with adult participants.</p> <p>The ethical issues are:</p> <ul style="list-style-type: none"> - Participant informed consent - Issues of confidentiality and anonymity - Data management and storage
Any proposed mitigation or risk controls	<ul style="list-style-type: none"> - Participant information sheet and consent form, including use of data, audio recording, publication, measures for ensuring confidentiality/anonymity (if appropriate) and right to withdraw. - Data, including audio recordings, transcripts of interviews, and questionnaire responses, will be encrypted and stored on a secure hard drive, and accessed only by the researcher. - Recordings, interviews & questionnaires will be safely stored on an approved BCU secure server.

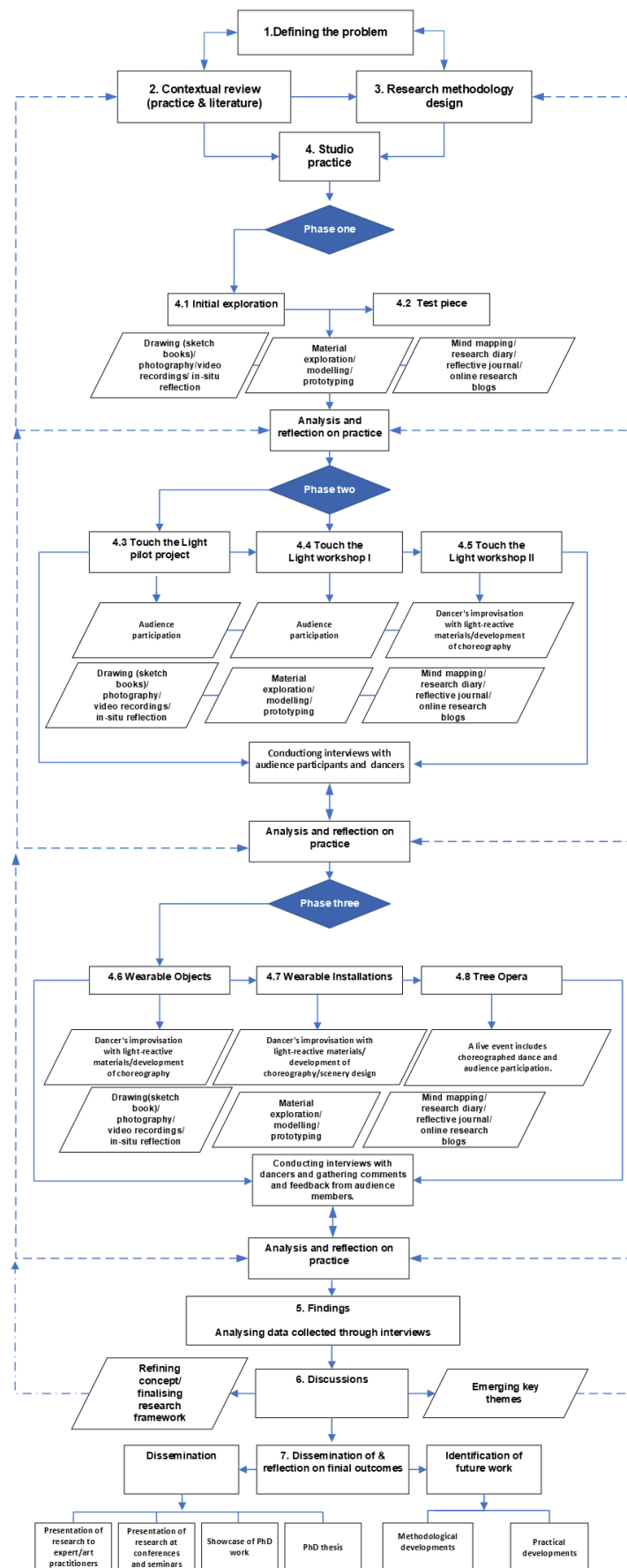
	<ul style="list-style-type: none"> - The PGR student is not making a film nor documentary, audience experience is not the main focus, it is however one of the parameters of how the PGR student wants to mediate her outcomes. - The process is controlled by a participant information sheet, consent form and anonymisation where requested and required for confidentiality. - The records will be processed as a commentary using only relevant formative assessment of data.
Decision (delete as appropriate)	<p>The research is deemed medium-risk, and is approved to progress as indicated by the researcher, with any mitigation already indicated within the proposal</p> <p>The research is deemed medium-risk and is approved to progress subject to the revisions/stipulated controls indicated below</p> <p>The research is deemed high-risk and will be referred back to the researcher who may request a decision at Faculty Academic Ethics Committee</p>
Revisions/stipulated controls to be adopted by the researcher	
Rationale for the decision	
Authorised on behalf of the UoA Director of Research	
Date	

Appendix 5: Theme analysis using ATLAS.ti software



This bar chart is generated through theme analysis using ATLAS.ti software.

Appendix 6: Diagram of research process



Appendix 7: Studio practice video link

A rich documentation of the studio practice, including films, video clips, photography, and design ideas, can be accessed through the following link:

<https://www.wanshuliresearch.com>

The documentation includes the following workshops and performances:

- *Touch the Light* pilot project
- *Touch the Light Workshop I*
- *Touch the Light Workshop II*
- *Wearable Objects*
- *Wearable Installations*
- *Tree Opera*