Using Crafting to Inform the Design of Wearable Prototypes for Mental Wellbeing

Karen Anne Cochrane
Carleton University
Ottawa, Canada
karencochrane@cunet.carleton.ca

Yidan Cao
The University of Sydney
Sydney, Australia
yidancao@sydney.edu.au

Jingjin Li
Cornell University
Ithaca, United States
ji3776@cornell.edu

Audrey Girouard
Carleton University
Ottawa, Canada
audrey.girouard@carleton.ca

ABSTRACT
In this work, we discuss the autoethnographic approach titled the Inside-Out Probe Toolkit, which alongside more traditionally textual data collection methods, elicits creative craft-based methods to inform the design of wearable prototypes. We showcase how creative art-based reflective practices support designing more meaningful wearable technology for researchers' mental health and well-being.

Author Keywords
etextiles, design, mental health, stress, emotional regulation, crafting, physical computing

CSS Concepts
•Human-centered computing~Human computer interaction (HCI)~HCI design and evaluation methods~*Field studies*

INTRODUCTION
Qualitative interviews have a long tradition of being used to understand the lived experience of participants in human-computer interaction (HCI). The interviews are often semi-structured open-ended questions that are carefully designed to help support user-centred design research [1]. Though when speaking about sensitive topics (for example, mental health), it can be difficult to articulate how one is feeling in words and using craft-based methodological approaches such as abstract sketching, body maps, and other artistic methods can gain more insights into the design of the prototype [5-7]. There has been a traditional tension between art and craft, with some individuals attributing art held a more positive connotation of worth compared to craft. In contrast, others argue that craft objects can be considered art if they demonstrate formal aesthetic qualities [11]. Despite ongoing debates about whether crafting is a form of art [12, 2], there is no clear distinction between the definitions of art and craft.

Furthermore, as the range of art and craft forms expands, the boundary between art and craft becomes increasingly indistinct. We looked at crafting as a creative process and a means of expression which creates ways to depict lived experiences [5]. Additionally, our crafting methods develop new insights into the form, textures, and visual elements and how this data informed the design of our HCI prototypes [5].

Crafting is distinguished by its emphasis on considering the materials used and the process of creation, which can positively affect our mental health and well-being. This approach can also lead to a deeper understanding of our everyday surroundings and experiences [9, 10, 13, 14]. The customizations of textures and aesthetics created through crafting help infuse prototypes with personal emotions, memories and meaning [8]. "...the act of making brings the maker a sense of self, of ownership" [3, p. 13]. Crafting can be a process through which individuals can express their personal stories and experiences by creating tangible objects. It can serve as a means to visualize and communicate their narrative and aid in reflection [1, 4].

In our work, we used crafting as an artistic means to support researchers in designing and developing wearable prototypes to support their mental health and well-being. Along with more traditional textual data-collection methods, the crafting methods played a significant part in our Inside-Out Probe Toolkit. By abstracting the data, we analyzed key textual and visual elements and designed multiple collages based on the results. Then we used the colleges to inform the visual elements of the prototype, including colours, textural elements, and visual designs. In the following pages, we give examples of the different crafting research methods we implemented into the toolkit, an example of one of the colleges, and finally, how the college directly affected our prototype.

Inside-Out Probe Toolkit

3D model

Stream of Consciousness Writing

Directed Questions

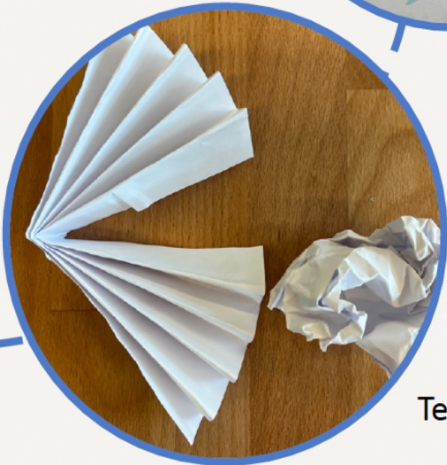**Sketches, Textures, and 3D abstract models of experience**

Drawing

Texture

Body map

Body maps

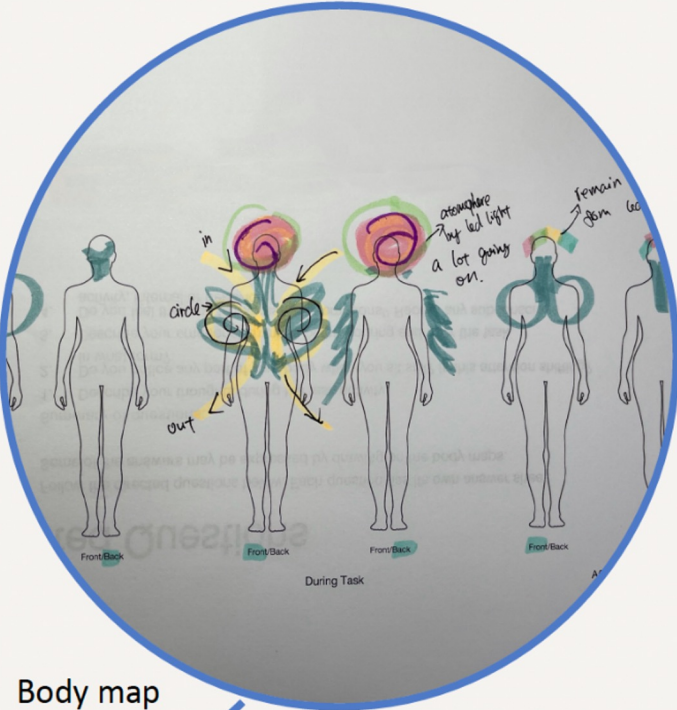**Photography**
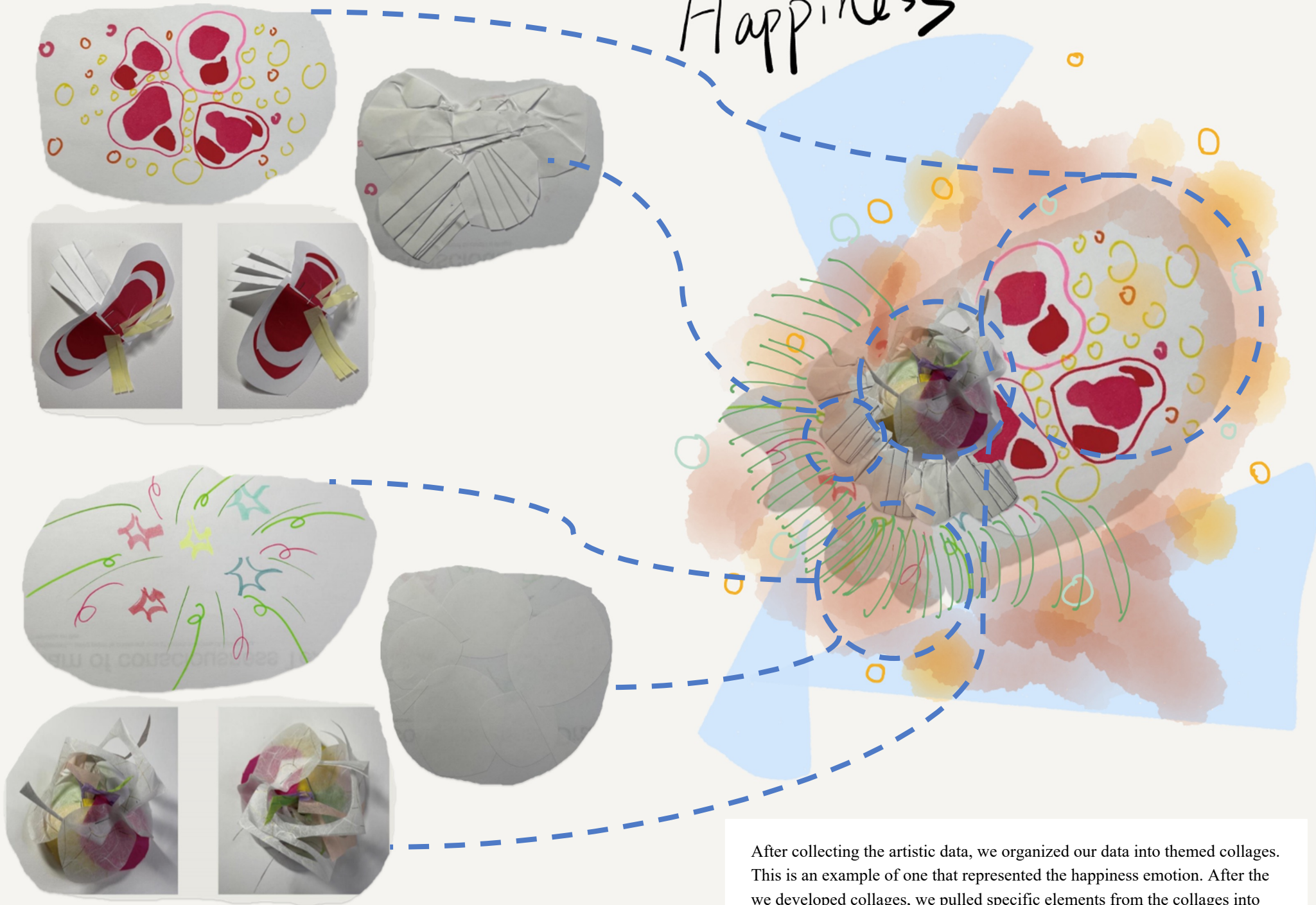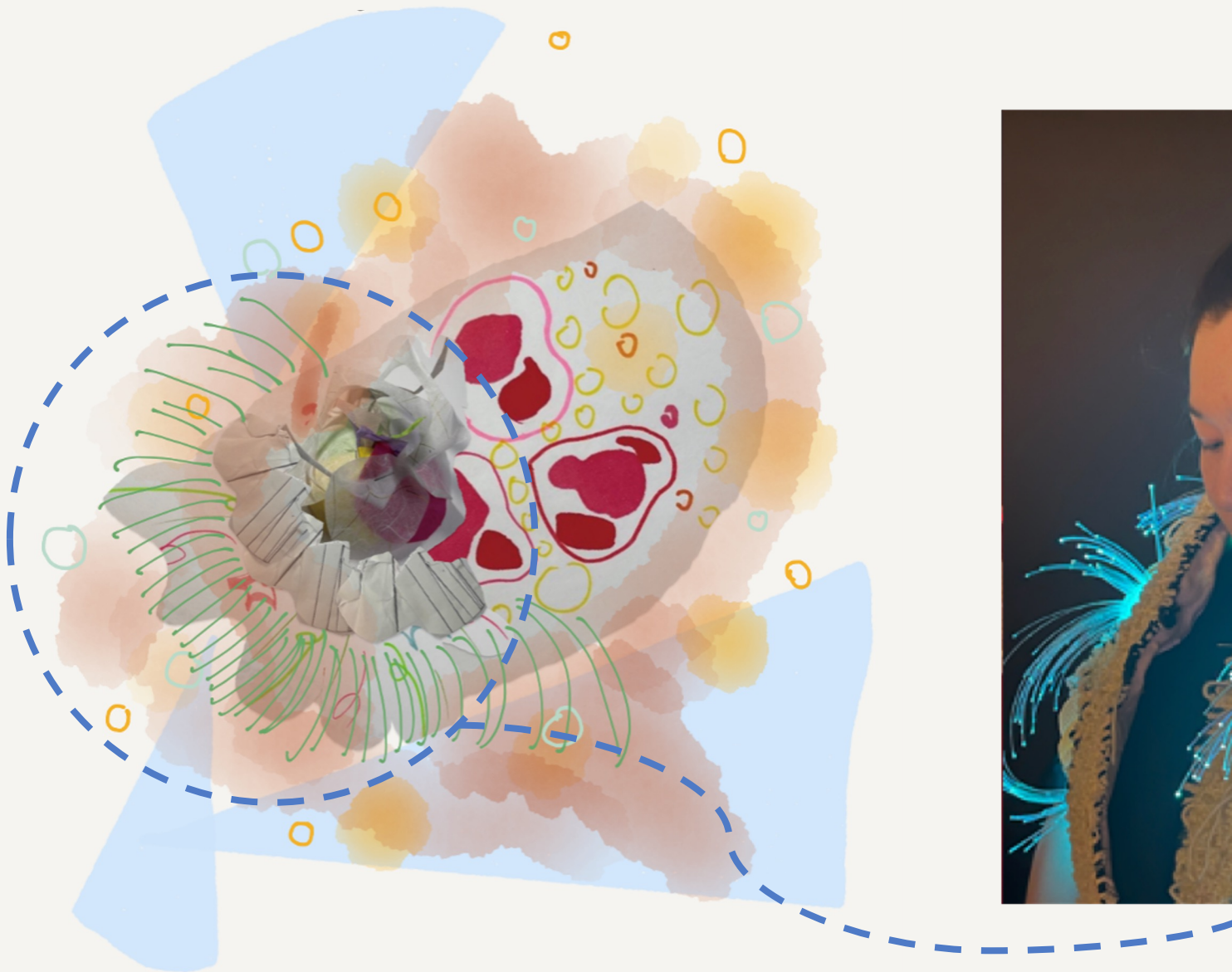

Photography

Happiness

After collecting the artistic data, we organized our data into themed collages. This is an example of one that represented the happiness emotion. After the we developed collages, we pulled specific elements from the collages into our prototypes.

Though we used multiple collages to build the prototype, we were specifically interested in implementing the flowers from the collage on the left into the prototype.

CONCLUSION

Overall, the processing of crafting helped inform specific elements in our prototype, including the colours used, the shapes, textures, and overall designs. It helped us understand ourselves creatively and meaningfully to support the autoethnographic process. We are currently in the process of iterating the Inside-Out Probe toolkit with five different researchers. This exploration into art-based methodologies will yield interesting and meaningful artifacts to support researchers' mental health and well-being. In the future, we plan to support other artists and researchers in utilizing the toolkit.

We look forward to seeing what additional data-collection methods and prototypes are developed through the process.

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