Designing for Mindfulness in the COVID-19 Work-from-Home Period

Bin (Tina) Zhu

KTH Royal Institute of
Technology
Stockholm, Sweden
binz@kth.se

Abstract

This position paper introduced my work on designing technologies to support mindfulness through physical interactive artifacts. I presented the project HU, a physical device based on vapor, light and sound designed for supporting breathing mindfulness. The design is expected to encourage healthy behaviors e.g. mindful breathing during the COVID-19 work-from-home period.

Author Keywords

mindfulness; healthy behavior; COVID-19; interaction design; breath, physical artifacts.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Mindfulness has been gaining increasing interest for its potential benefit as a wellbeing practice to improve quality of life [1,2,3,4]. In this position paper, I introduced my work on designing technologies to support mindfulness for the COVID-19 work-from-home period through physical interactive artifacts. The artifacts are expected to encourage healthy behaviors e.g. mindful breathing during the COVID-19 work-from-home period.

Background

Traditional health and wellbeing apps enable users to reflect on their past, judge their current conditions, and plan for the future by taking health-strategic actions. The emergence of a mindfulness movement in interaction design calls for a different approach that focuses on the present, with an accepting and non-judgmental attitude [5]. Mindfulness invites people to accept and/or rejoice in the present. The emphasis of mindfulness is on the presently lived moment rather than on how current performance in one's life situation can be quantified with respect to past performance and an envisioned future.

Nowadays, mindfulness practices are not limited to religious rituals and specific techniques, e.g. sitting meditation, but open to inviting alternative ways. I attempted to open the design space of interactive technology supporting mindfulness. While there are many mindfulness related apps and various forms of mediated mindfulness exercises, not much effort has been made towards 1) physical product designs, bypassing the predominately glass screen- and verbally-oriented apps we have seen so far 2) encouraging people being with the physical interactive artifacts mindfully. Based on this gap, my work was intended to investigate how technologies, in particular physical interactive artifacts can support mindfulness practices, and what physical interactive artifacts offer beyond what we can already do without technology.

Method

I used methodological approaches named Research through Design in general in the design project HU. My work was based on 1) the gap of mediated mindfulness exercises towards physical product designs (glass screen- and verbally-oriented apps are predominated) 2) personal experience of mindfulness trainings and practices 3) design practices through experimenting with bio-data and physical interactive artifacts.

Design

This project focuses on designing physical interactive artifacts for MBSR (Mindfulness based Stress Reduction), in particular, mindful breathing. HU is a physical device based on vapor, light and sound designed for supporting breathing mindfulness (figure 1). The expulsion of vapor is based on one's breath pattern. HU was designed and developed for individual use to practice mindfulness at home or private space.

Figure 1. The prototype of HU

The design prototype was inspired by the ancient Chinese incense furnace (figure 2). In Chinese, HU means breathing out. I named this installation HU as it is for supporting mindful breathing (something which many Chinese have engaged with for centuries using the incense furnace). There is no screen on this device. I experimented different modalities such as vapor, sound and light to mirror one's respiration. To create a mindful interaction, the representation of the present breath was carefully selected and designed. The sense of fleeting, temporality and beauty of breathing in the present moment was communicated by the rhythm of vapor, sound and light.

Figure 2. Design inspired by organic shape from nature and the ancient Chinese incense furnace

In the user study, it is found that rhythmically tuned vapor synchronized with the user's breath frequency can easily anchor the attention on breathing. The interaction with a physical artifact emitting the vapor held their interests and attention. The participants in our user trials thought HU imitated their breath since the vapor has a similar sensual form to the airflow. Rhythmic vapor could be related to breath more easily

in this particular context of practicing mindful breathing. Based on the abovementioned findings from our experiments, vapor was ultimately used as a design material to represent respiratory data in the prototype of the HU project.

During the process of using HU, participants reported their experience with HU in their breath mediation on a daily basis that HU supported mindful breathing by anchoring the focus on the visible interaction. Some people not only observed the vapor but also blew and even interacted with the device using their hands. One of the participants in our user study is a mindfulness coach. He held HU in his palms when breathing together with the device. He pointed out that this holding action maintained his attention to breathing and he said: "this holding is so powerful. It's like the lives because breathing is vital to life." The experience increased his engagement of using HU as the daily mindfulness practice.

Reflection
From the process of Research through Design, I concluded three levels in designing technologies for mindfulness through physical interactive artifacts. The first level relates people to technologies as their context. People built a friendly relationship with the physical interactive artifact where man and technologies live in harmony instead of showing the face of detached, acquisitive or aggressive. The second level refers to technologies as the objects for entertainment and appreciation. People treat the physical interactive artifacts as aesthetic objects or beautiful natural sceneries. The third level regards people resonate with the physical interactive artifacts

with the sense of immergence and wholeness. People let the self and the technology blend into one.

I hope this position paper could open the discussion on designing technologies for a healthy lifestyle during this worldwide work-from-home period due to COVID-19.

References

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