**The Study**

Our study was centred around addressing several key questions.

First and foremost, we sought to understand the diverse ways in

which people express care for the potential air-purifying living

cyanobacteria artefact, and the underlying motivations behind their

chosen approaches. Furthermore, we were keen to explore the

significant role that materiality plays within this context, shedding

light on how it shapes caregiving practices.

**Participants**

Our study was conducted with eight participants

(table 1), between the ages of 27 to 68, and from fairly distributed

genders. Our selection criteria for participants included

1) that they lived within the Netherlands, and 2) that they had

previous and varied experiences of caring for other-than-human

living beings. Some of them did not take care of plants well (i.e.

claiming themselves to be a plant “killer”), while others took care

of living things as a hobby, obligation, or job. The people who took

care of living things as a hobby enjoyed taking care of plants or

gardening, while those who took care of them as an obligation had

to do so for making beer or kombucha. Lastly, some people had

jobs where they took care of living things, such as biologists who

worked in laboratories. The diverse experiences in caretaking may

increase risk of “care failure”, e.g., with participants who claimed

to fail in plant care. However, it ensured that we could observe a

wider range of motivations and creativity in caretaking for a novel

living being. We did not recruit people who had children under 12

years old, to minimise any possible damage or accidental ingestion

of the artefact. All participants undertook the study voluntarily.

**Procedure**

We first sent out invitation letters to potential

participants, in which we explained that we were interested in what

it is like for people to live with living artefacts - everyday artefacts

containing living organisms for advanced functionalities (e.g., to

purify air, to self-repair, etc.). We asked them to live with and care

for the living cyanobacteria artefact over two weeks at their homes,

and to share their daily experience and reflections with us.

The study was undertaken in three phases. First, we delivered the

artefact to participants’ homes, accompanied by instruction cards

that introduced the artefact and the study requirements (figure

13). These cards informed participants that the artefact contained

living cyanobacteria, which are capable of absorbing CO2 from

their surroundings and emitting fresh oxygen, thus potentially purifying

the air. Participants were directed to position the artefact

in locations where air purification was considered necessary and

light conditions advantageous for its well-being. Additionally, we

presented the artefact’s preferred light conditions, and its colour

changes signalling its well-being state. They were asked to take a

photo of the artefact and its surroundings whenever they observed

a colour change, and in case they relocated it or altered its form.

They were prompted every 2 or 3 days by the first author to share

texts or photos through their preferred digital platforms (e.g., WhatsApp

and email). Furthermore, they were also encouraged to assign

nicknames to the artefact, as a way to familiarise with it. Complete

instructions can be found in the appendix. Upon delivery of the

artefact, we conducted an initial interview to gain insights into

the participant’s routines and took a photo of their living rooms.

The second phase of the study involved semi-structured interviews,

lasting 30 to 60 minutes, conducted at the one-week mark of the

study. At the end of the study, we conducted a follow-up interview.

Most interviews took place at participants’ homes, with four

of them taking place over Zoom. The questions were designed to

build upon the cumulative nature of the study, with second-week

interview questions shaped by the responses gathered during the

one-week interviews. In total, the study generated approximately 6

hours of verbal interview data, along with 79 self-reported and 64

researcher-captured photos collected after each site visit.

**Interview Questions.**

Our interview inquiries focused on the

evolution of care practices. It’s worth mentioning that we deliberately

refrained from directly probing participants about the concept

of "materiality". Instead, we gleaned insights about its influence

by synthesizing evidence from their comprehensive encounters

with the artefact, thereby mitigating potential biases and ensuring

that our questions remained accessible. In formulating our

interview questions, we drew inspiration from Maria Puig de la

Bellacasa’s feminist care ethics framework, which has been increasingly

discussed in recent HCI and design venues (see, for example,

[16, 37]). De la Bellacasa emphasises the interplay between “knowing”

and “caring”, and unpacks care towards the more-than-human

worlds with three mutually dependent and challenging aspects:

labour/work, affect/affections, ethics/politics. She also highlights the

need to “make time” for care doings for other-than-human living

beings. We also incorporated the notion of mutualistic care

in biodesign [42] in the formulation of our questions. Specifically,

we focused on how care relations with living artefacts can be reciprocal

and evolving, and what role living aesthetics (i.e., how

changes in living materials are experienced by people) plays in the

establishment of mutualistic care, within this framework [42].

Accordingly, we synergized interview questions into the following

five categories (table 2): 1) Knowing and relating to the

organism: How are care actions facilitated through noticing the

living aesthetics of the artefact? 2) Affection: How does affection

evolve through care actions towards the artefact? 3) Performances

and reciprocity: How do care actions evolve? How do participants

navigate their performances between the function of the artefact

- air-purifying - and their care for the artefact? 4) Making time

for care: How does taking care of the artefact influence people’s

everyday routines? 5) Motivations of care: Why do people care for

the living artefact?

A questionnaire with text and images

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