
The Tuning of Materials: A Designer's Journey

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Abstract

A growing number of scholars have started to look at materials as part of the unfolding of social and cultural practices. Yet, to date, relatively little is known about how to purposefully design for a particular practice in which materials, with their unique qualities, act as co-performers. This paper presents the journey of a designer who includes the explorations on the performative qualities of materials in design ideation. This journey aimed to explore how the material and the performance can 'lead the way' in the potential unfolding of a social practice such as 'tuning a radio'.

Authors Keywords

Materials experience; design; performative qualities of materials; connected everyday.

ACM Classification Keywords

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

Introduction

Reversing the emphasis from researching people and their individual relationships with material artifacts to materials experience, which takes the properties and experiential qualities of materials as conditions for ongoing encounters and performances and ultimately the development of practice, is a paradigmatic shift for designers [1]. It requires designers to envision and create a situation in which a desired practice is likely to unfold; and even



Original concept: At the Technical University of Delft the lives and practices of expats were researched by the Faculty of Industrial Design Engineering to uncover opportunities for new interactions with everyday products. We have translated the research findings into a series of conceptual products where the ghost of the land of origin seeps through in day-to-day use. The Geist radio is one of these connected product concepts that helps expat families develop and maintain a sense of connectedness and belonging. By adjusting the knob of the Radio, a family can navigate a bespoke spectrum of radio channels ranging from their native country to the place where they currently reside. If a family adjusts the knob on a frequency of their hometown, for example, the Radio will transmit local radio streams. The mundane performance of turning the dial to transverse the space in between 'homes' physically manifests and bridges the chasm that defines the social and cultural experience of being an expat.

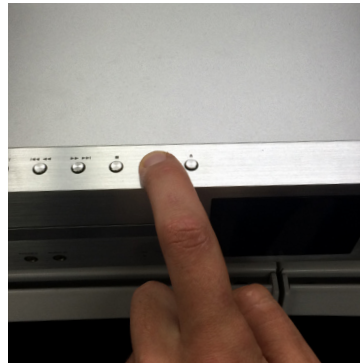
Design brief: We commissioned to a trained interaction designer external to the original design team to re-design the Geist radio by focusing on the performative qualities of the materials that will embody the design. What if this radio is made of rubber? How would we interact with it? How can such material carry the design intention? We asked the designer to select a material(s) which evoked a way of tuning between channels that was unique to an expat's everyday routines. Next to the design brief, we provided the designer with the [anonymized] framework, which we introduced in [1]. The designer kept a design diary to document his design journey, thoroughly showing his action steps and decisions making process.

more importantly, a situation in which people are equipped and empowered to assimilate the design into their ongoing performances. In other words, it requires considering materials as 'co-performers' of practice together with people [2].

'Materials experience' is a phrase that acknowledges the experience people have with and through materials [3]. It acknowledges the aesthetic aspects of experience as much as its performative character. Accordingly, the notion of materials experience suggests that designers should qualify the material not only for what it is, but also for what it does [4], what it expresses to us, what it elicits from us, what it makes us do. To facilitate this understanding, in an earlier publication [1], we introduced the four levels of materials experience in which materials are experienced: sensorial, interpretive, affective and performative. While the first three levels have been explored to a great extent [3, 4, 5, 6, 7], relatively too little has been done in understanding the role of materials in shaping our ways of doing.

HCI researchers have started to investigate how to capitalize on the social life of material artifacts and the role of material properties [e.g., 8, 9, 10] in the context of a variety of practices, from coordinative practices to home practices and creative processes of making. This corpus of HCI research is primarily informed by ethnographic work, and increasingly grounded in material studies and studies in material cultures. But as pointed out in [11], the situated engagement with materials and forms of interaction that are not necessarily familiar has been a largely unexplored topic in the HCI research field.

This paper visualizes step by step and briefly discusses our first attempt of understanding how a trained interaction designer might go about re-conceptualizing the social practice of 'tuning a radio,' and his material explorations.



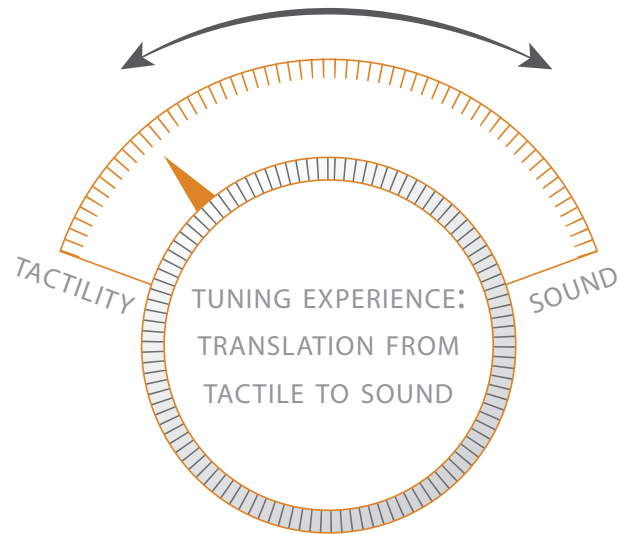
Understanding tuning a radio

The designer started with a product benchmarking by collecting radios that differ in their ways of tuning. In order to experience different ways of tuning, the designer preferred to visit shops rather than searching radio designs in the Internet. The process of tuning a radio in search of a right channel has an iterative character involving searching, finding, listening, again searching, etc.





According to the designer, for expats, missing home is a mix of melancholic longing for something far away and pleasant sense of connectedness. He interprets the tuning of the Geist Radio accordingly: "The tuning will implicate hope (in search of a channel) and disappointment (when the desired channel is missed/ cannot be caught). These iterations of acts and affects will happen each time one searches for the next radio station, till a pleasant sense of connectedness is elicited when a satisfying channel is caught". The designer defined this overall tuning experience of the Geist Radio as 'sad-isfaction'.



sad-isfaction

The quality of being content with melancholia

Material explorations

Then, the designer asked himself: What kind of material qualities would facilitate this way of tuning in and out of a sense of melancholia? Or the other way around; if different types of materials would facilitate the tuning for 'sad-isdiction', how would the quality of the performance change? The designer explored the performative qualities of some everyday materials to answer these two questions.

Plastic hair donut



Plastic shattered ball



Hard plastic bowl

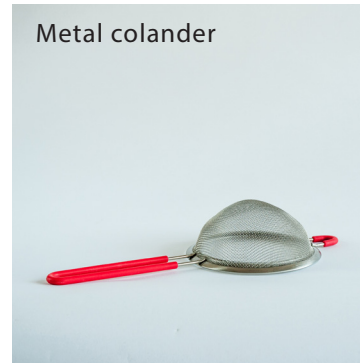


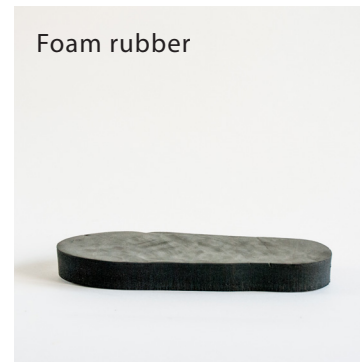
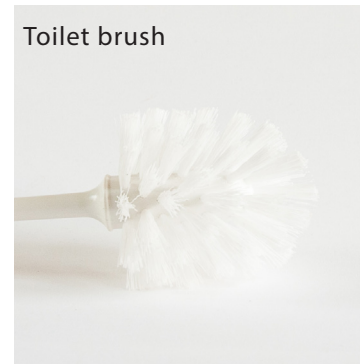
Cloth sponge

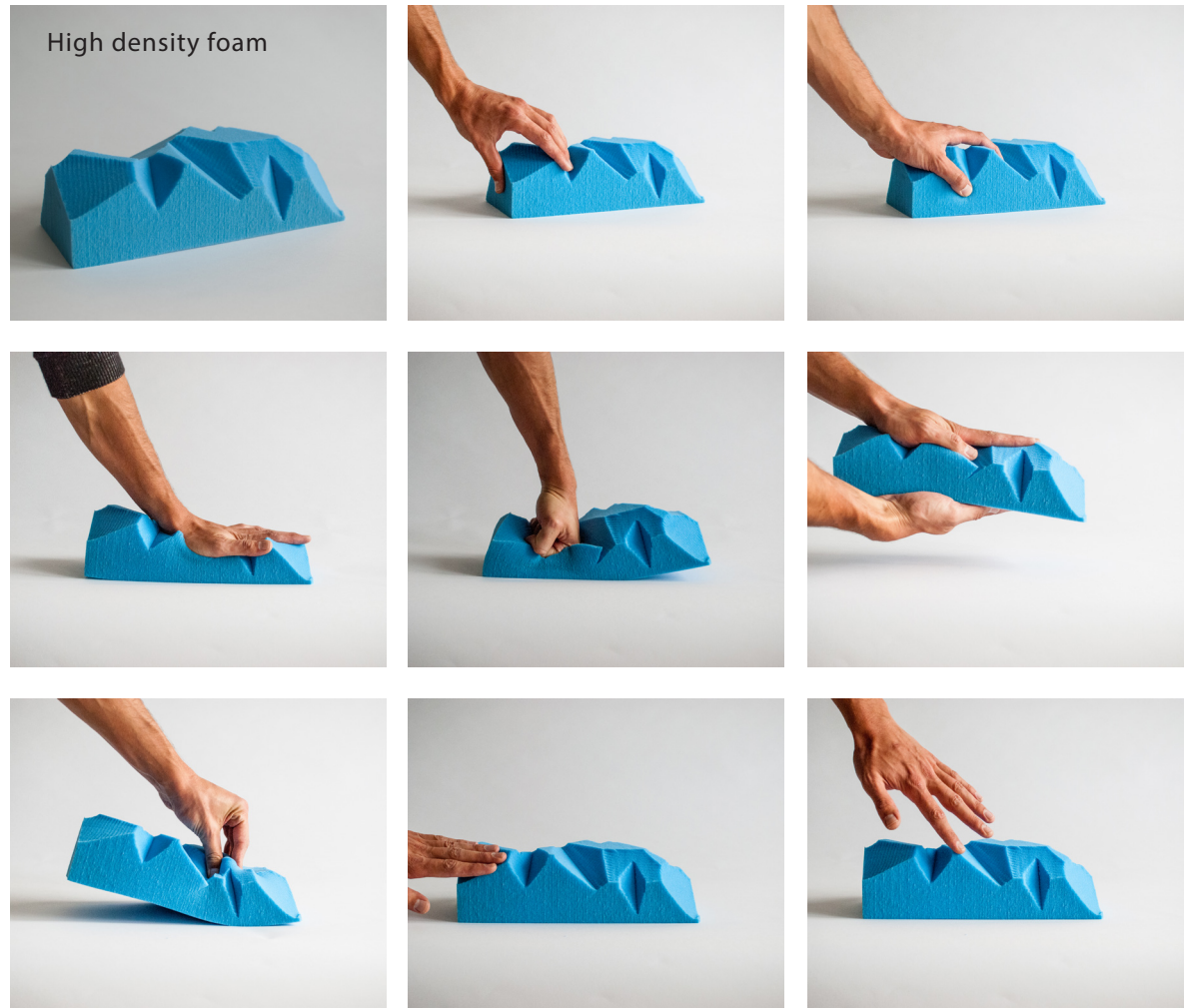


Silicon hair balloon



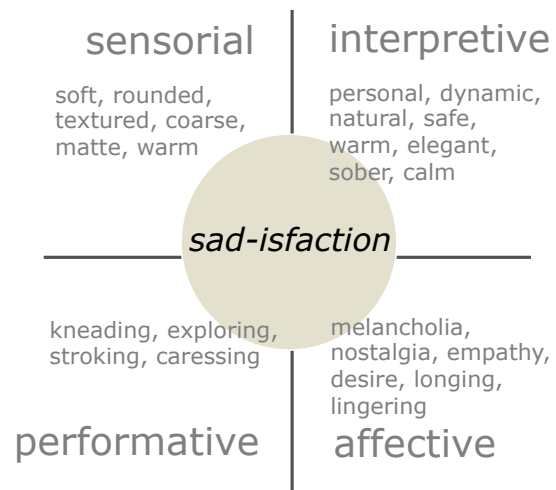






Materials experience vision

The designer summarised various findings under a cohesive whole as 'Materials Experience Vision' to guide his decisions through the process of design. The Materials Experience Vision expresses how a designer envisions a material's role in creating/contributing to functional superiority and a unique user experience when embodied in a product [12]. It may accommodate various statements that could be interpretative (e.g., the material will express naturalness), affective (e.g., the material will surprise people), or performative (e.g., the material will require delicate use), in relation to the aimed ultimate experience (i.e. sad-isfaction).



Vision statement:

"The everyday tuning of the radio enables the expat to constantly bridge the gap between homes. Lingering to past experiences, she tunes the radio until she found sad-isfaction in the right radio channel. The material with its unique sensorial qualities should trigger people to caress gently, and explore the material surface; this should feel natural and calm as well as elicit desire, longing and lingering"



Product concepts

Three product concepts focusing on three different ways of tuning were created.

In the first concept, pressing and kneading the 'foam'-like material manifest the tuning. In this configuration there is not a very clear distinction between what is home and what is abroad, the channels are mixed and the foam is the window into the radio landscape from which the right channel has to be found through interacting with the material. The focus of this concept is to explore the relationships between the soft quality of foam and the lingering and searching character of melancholy by kneading and pressing.





The act of kneading is explored in the second concept too, yet this time guided by a specific direction (through its knob like shape). The knob could even be taken off and carried along through the house, so tuning can be done on different places depending on various activities that take place through the house.



The focus of the last concept is to explore the quality of hairs, and the tuning in between two places by letting the position of the hand determine the place in between homes. The character of the practice is searching, exploring, dreaming from melancholia.



The last concept was selected because of its ability to tune from one place into the other (left to right). Wandering in between the hairs or tapping and caressing them provides different ways of tuning for a clear reception. Also, the hairs resemble on the one hand the experience of hearing the noise of the radio, and on the other hand support melancholic interactions with a lingering, explorative character.

Conclusions

This paper describes a designer's journey in search of the performative qualities of materials for tuning, within the given context of a radio for expats. In doing so, the paper discusses the design process of taking into consideration 'the performative' in material selection and embodiment. Yet, it does not discuss the quality of the final designs.

In the attempt to anchor the performative qualities of tuning in an experience he could empathize with, the designer begins his journey by positing the practice of tuning in relation to expats. What may 'tuning' mean for an expat? The designer's actions steps can be summarized as below:

- Understanding the performance/practice (i.e. tuning): The designer understands and empathizes with what 'tuning' means for expats.
- Material explorations: The designer explores what material qualities would facilitate different ways of tuning.
- Materials experience vision: The designer articulates what the design intention for the ultimate materials experience is; and envisions how the quality of the performance in relation to the material properties/qualities would be.
- Concept creation and prototyping: The designer makes the transition from design intention to material/ product design.

Informal discussions with the designer showed that while each step has its own specific challenges, the most challenging action was to identify and bridge the performative qualities to the given practice. It appeared evident that when users and practice (expats and tuning, in this case) are fixed in the design brief and the choice of material is subordinate, performative qualities can be explored and identified only after traversing first the interpretive level (tuning as 'satisfaction'). While results show the given practice has 'opened up' by adding performative considerations of material qualities (i.e. pressing, caressing,

lingering etc. not just functionally turning a dial), we are left with an itching question. What if the initial design brief had unconventionally bracketed the user? Or what if we provided the designer with a particular material to design a new way of tuning? How would process and outcomes have been different? Elaborating on the effects of such different beginnings (i.e. performance only, material + performance, etc.) on the design process and outcomes, and facilitating the design process by tools and methods, for instance Material Driven Design [12], is our endeavor for future work.

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