# Feeling of home enhancing objects - design guidelines for the qualitative improvement of the coming back home moment as an everyday practice

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**ABSTRACT**
This paper presents an artifact-assisted research on the meaning of home for international people living in Eindhoven (NL). An experience-driven design approach has been adopted to analyze the qualities that design should integrate into the creation of the meaning of home, embedding them in a design probe. The design guidelines were obtained through the analysis of insights that emerged from an initial field research and a context-mapping directed through an ethnographic approach. The focus of the research is to find how design can improve the connection between people and their home in the moment of their daily return to it, adding to the coming back moment a set of experiences, aiming to make the user feel the idea of transition from the outside to the inside and understand the concept of objects that are waiting for you at home, transforming the coming back home in a welcoming ritual.

**Author Keywords** — *home, everyday actions, material homemaking, experience design, artefact-assisted research, interaction design, student homes, expat cultures, home belongings, home identity*

**ACM Classification Keywords**
H.5.2. Information interfaces and presentation; User Interfaces; User-centered Design

**INTRODUCTION**
The everyday life is made of networks between people, between people and objects, and between people objects and contexts. In these networks, we should find ways to create a smooth and easy interaction both for the user and for the object in order to create a connection with the context [12, 33].

A core aim of this paper is to investigate the concept of the meaning of home, analyzed in the moment of the coming back at the end of the day, seen as an everyday practice in the home environment.

The aim of the research was to engage design in the creation of a sequence for the daily transition from outside to inside the home, creating a welcoming routine which brings forth a more conscious engaging with the home.

Investigating such experiences can contribute to the creation of new insights into design strategies for the improvement of meaningful qualities supported by the use of interactive technology in the everyday life in the context of home [9,11].

An initial thorough fieldwork and context-mapping [31], with a continuous user involvement, was done to understand the meaning of home, followed by an experience-driven artifact-assisted research to explore the meaning of home and the importance of the coming back home moment, through the involvement of key values embedded in a design probe.

The aim was to use the findings to create design guidelines for the improvement of the feeling-at-home in the coming back home moment, including the user needs found during the initial research.

The research probe has been deployed for a long user test in two different homes, and the analysis of the experience that the participants had with the probe did lead to the definition of design guidelines to improve the feeling of connection with the home in the moment of our return.

The research started with a personal interest. As an Expat student when, in September, I came back in Eindhoven after the summer holidays, I have noticed that the moment when I have opened my apartment door, I felt immediately at home. The feeling that I experienced in September was different from the feeling that I had experienced when I was coming back from Italy the previous times that I went 'home' for holidays. I opened the door, I switched on the lights, I took my shoes off and I looked at my apartment that was waiting for me.

Nowadays it is increasingly common to have the idea of home as a temporary place; travel and constant moving are common; spending the day in the office or at the university is common; the relationship with the home in the everyday life is changing.

Feeling at home is closely linked with self-identity in the home [1,2,25]. The meaning of home is a feeling that is built each day, connecting with the space that we call home. But when it comes to moving to a new house, a new situation, tangible representations of our experiences are often left behind. Objects, memories, books, are things that can be found where one has left them before leaving. It is now more and more common to be used to start over again, and the relations with objects are changing. *'In the context of increased diversity, mobility and migration, as people change residence and break the connections of origin, family, and childhood, which conventionally provide a link between place and identity, it is important to understand the challenges of constructing a plausible narrative of personal history and continuity that can provide a connection to place'*[27].

The city of Eindhoven, in the South of The Netherlands, has a growing international community, people of different ages and from different backgrounds are attracted by the job positions at Philips, Bosch and High-Tech Campus, and by the educational opportunities given by the University of Technology. In this scene, different associations are giving services to help international people to integrate themselves in the Dutch community, in the new culture, by organizing workshops and events.

The aim is to give the opportunity to meet people, to let people feel at ease and to help them overcome the possible issues that they may have when moving in a new country. After some meetings with people from these associations, the question that raised was what could be the role of design to improve this situation?

The core context of this research was the home environment, the private space, instead of outside-home activities, a topic already covered by the associations. In this perspective, the research question was: 'how can design contribute being a support on building important values that

would transform a normal apartment in the home that we want to come back to in the evening?



**Figure 1. A picture took during the field research**

*'It's all about us if you look for a man you will always find a home. Home is the place of trust, the shelter from fear and uncertainty. Much more than just a simple shelter from cold and rain. Home is a physical and mental protection, it is the place of silence, everyone, all of us, we spend our lives coming back home' [13].*

## RELATED WORK
### What is home?
But, what is home? How do people describe the meaning of home? Home *'is a multilayered concept' [3], 'home is a rich, complex, nuanced, and multifaceted setting for everyday life' [11].* The meaning of home provides a sense of identity [2,17]. Home is the place where one can be who he/she is, where one feels safe, where one doesn't have to act and where one can decide his/her role [1,25].

The meaning of home, as it is used in everyday life, describes both a space of imagined belonging and a lived space structured by practices and routines. The meaning of home can be defined on a physical, a psychological and an emotional level; as a physical space, home is a *place 'where people reside, [it] is fundamental to the experience of everyday life. Studies on home explored the emergence of domesticity, as a form of self-expression and personal identity, a different word and a different space in our lives, where we can come back to' [2].* As a psychological space, the home has been described as based on routines, comfort, and familiarity, *'which constitutes a safe haven, a place to retreat to from the outside world, marking the territory between outside and inside world, private and public'[32].* This space is strictly connected with the amount of self-identity that can be found in this place, and how familiar and personal is the atmosphere. As an emotional space *'home is [..] a spatial imaginary: a set of intersecting and variable ideas and feelings, which are related to context, and which construct places, extend across spaces and scales and connect places' [2].* This space could be found

anywhere, it is not only connected with the place of the dwelling but is a space that is created in one's self when feeling safe. In his book 'Demian', Hermann Hesse defines home as not being in a specific place, but home is inside you, or nowhere else. *'Heimat ist nicht da oder dort. Heimat ist in dir drinnen, oder nirgends.'*[19].

The role of objects and artifacts in feeling at home is crucial. They define identity and they help to create the portrait that one needs to find when coming back home [32]. *'Objects surely don't talk. Or do they? Objects in that room are equally a form by which they [people] have chosen to express themselves. They have been gradually accumulated as an expression of that person or household. Surely if we can learn to listen to their things we have access to an authentic other voice'*[20]. As Daniel Miller states in his book 'The Comfort of Things', objects can provide comfort, being a memory, a connection to an episode of one's life, but also, objects can be a companion in one's life, as they are able to create an invisible connection between one and his/her home environment. *'Objects are our witnesses, companions, and accomplices in our everyday life practices. They manifest how we experience the world around us, how we think and which values we hold dear.'* [7].

When moving to a new country, many of these objects will be left in the previous home, sometimes with the promise of coming back to get them once settled, sometimes having them as a tangible representation of memories. In this research, the focus has been put onto the definition of what objects people identify with and why they decide to bring them with them when moving. Understanding the connections that people build with objects could provide handles on how to design for the material experience of home.



**Figure 2. A picture took by a participant during a contextual interview.** *'Objects and rituals that make me feel at home'*

## Home and technology

Home is also a place for technology: *'when the technology of the home was more like a tool to augment human muscle power – a place for the washing machine, the fridge, the boiler – the home was a private, bounded space. Now technology is breaking down those boundaries. When parents worry about where their children are going and to whom they're talking on social media, they're acknowledging that people can be at home, in their bedrooms, and yet somewhere else simultaneously'* [35]. Now technology is changing the idea of home, shifting it to a feeling that can be shared with others instead of a specific place. *'Airbnb is one expression of this technological transformation of the home. A bedroom can become an income-earning asset when its role in our lives is reassigned by the click of a mouse on a digital platform'* [35]. Home is becoming a place of work for many people, the dining table can be used as an office desk during working hours and as a meeting place for family in the morning and in the evening. Public spaces like cafeterias and bars are decorated with a *'homy'* style, and the feeling of being at home is becoming a service that public spaces want to provide the customer with. An example of this could be the shared workspace in London, called Second Home. Second Home is a creative workspace that brings together diverse industries, disciplines, and types of social businesses as a place where to meet and work (https://secondhome.io/).

Technology does also help to create an easy connection with distant places, so the connection with the distant home is now more easily reached. People can talk with their families and see each other. One of the participants of my research told me that sometimes he puts Skype on and calls his mother before dinner, just to hear the sound of her cooking. One can feel closer to his or her family just receiving pictures on the phone, or looking at posts that friends share on social media. Remotely connection can also be made through some subtle and less intrusive interactions. If we look at the example of the *Good Night Lamp* [36], the project by Alexandra Deschamps-Sonsino, is a set of two connected lamps that work remotely to create a connection with someone that is not in the vicinity, using light to communicate. The two lamps are similar in shape, but if the owner of the first lamp switches it on, the other lamp will turn on. It is a product meant to share the presence through light when two people can't be together. This is a perfect example of how design and technology can create a remote connection between distant places. For this reason, the focus of this research project has been directed towards how design and technology could help us in the creation of a strong connection with the actual home where we are living in.

What is nowadays meaningful in the definition of home is the set of practices that we perform in that specific place, those practices that help us express ourselves, the *'ongoing domestic practices' [11],* as A. Desjardins, R. Wakkary, and W. Odom define them in the paper ''Investigating Genres and Perspectives in HCI Research on the Home''.

Reinventing home practices is an ongoing process of linking the present to the past and the future.

*'Recently the lived space of the home has been established as a significant space for the analysis of everyday lives'[20].* In part, as Daniel Miller has argued, *'this has become necessary as people pay increasing attention to their relationships with their own home, to its structure, its decoration, its furnishing and the arrays of objects that fill its spaces' [20].* More generally, by academics, *'the idea of home as a simple expression of self has been negated by the recognition that home is a "process" and the significance of domestic practices in making home meaningful' [9].* Such practices, Irene Cieraad argues, performed both on and in the home, *'may be related to its material structure, like decorating, renovating, and moving house, or to domestic activities like cooking and cleaning, raising children, or gardening, or to the psychological and narrated practices of remembering and dreaming'[6].* These everyday practices are evoked by Heidegger's term *'building as a dwelling',* for domestic practices transform private space, making it distinct from any other and giving the house its identity as *'home'* [17].

In the set of domestic practices one can perform every day at home, the coming back home is one of the most important for the creation of the feeling of home.

The moment of the daily return is a crucial moment in the definition of the meaning of home. It is the transition from outside to inside, and it is a routine made of simple gestures that we perform every day, sometimes with a strict order, sometimes casually.

Feeling at home is made of material experience of space [1] and of the objects that can be found there [2,32], it is made of actions and routines that are connected with our identity [25], it is made of memories and stories hidden in simple gestures [20, 25], and it is made of moments during which one can experience the home. From the analysis of the contextual inquiries done with the selected user group, one of the most important moments for the feeling of home was the daily coming back home moment; the coming back home is experienced as crucial in the feeling-at-home, as it is a transition that is fundamental for the connection with the space.

The coming back practice is experienced as a domestic routine for the majority of the people that I have met during this research experience, and some people even attach the value of a ritual to it. It could be an unconscious transition or a strict sequence; it could be different every day; shared or alone. Though, in every different situation, it is the very first moment of material connection with the home environment.

## METHODOLOGY

Starting from a broad topic, it was necessary to define the specific direction of the project during the initial research phase. Crucial for this research project has been the continuous user involvement in different phases of the research and of the design and for the final long evaluation test [30]. A qualitative research approach was necessary to understand users' needs and concerns, exploring the topic in different steps and with different methodologies, in order to find new directions where design could create new experiences.

### Fieldwork

To find which everyday practices and what qualities are connected with the idea of the feeling of home, different stages of research have been taken with a field research approach [24]. A first context-mapping [31] was done through a personal questionnaire given to a group of thirty selected people. The analysis of the data gathered led to the selection of the specific target group of international people living abroad. Expats are people who have moved abroad to find better opportunities (such as studies or job places), with the idea of a fixed amount of time abroad. They normally refer to home as the one that they have in their native country, and they are looking for a new place to call home, a new place where to find their identity, where to find themselves when they are back. When one decides to move abroad to start a new university or to start a new job, one does not know if the time of his or her stay will be fixed, like for example the duration of a Master or Ph.D. abroad, or if one will settle there for a longer time. During the interviews done with the participants, it happened that people who live abroad, talking about home, would often refer to the place where they were living before moving to the other country. This can influence the way that one makes home once abroad, giving to the place where one is living the appearance of being temporary.

### Contextual Inquiries

From the questionnaire, eight expat participants, with different occupations and different ages, have been selected for contextual inquiry [26, 28] sessions, namely a semi-structured interview [10] done at the home of the participants. The group of people selected was varied enough to cover all the different personas that are present in the user group. Namely, I have performed the home-based interviews with international students living in Eindhoven for a long period; international students living in Eindhoven

since a few months ago; international young professionals and an international intern who has moved in Eindhoven in September 2016. The purpose of the sampling was to cover a complete distribution of individuals, so all the significant sub-groups could be analyzed [22].



**Figure 3. A picture took during a contextual interview, the participant wanted to be in the picture of his favorite spot in his studio.**

The home-based interviews were performed in order to study the different users and the values of objects that we have at home and understand where the empathic connection lies between users and the home environment [3]. Moreover, the interviews gave the opportunity to directly observe and document the actual behavior of the participant in the studied context, and search for patterns of homemaking practices among international people living abroad, so to find needs underlying those patterns, having an open conversation with the participant in the studied context. Participants were provided with a camera that they could use to take pictures at any given moment during the interviews when feeling the necessity Also the interviews were audio recorded.

This is a helpful method to collect pictures of artifacts, materials, and tools that are important for the participant without interrupting the conversation, but letting him stop the flow, creating a photographic inventory for the analysis [8]. When designing to create an experience, ethnographic interviews are an excellent tool to dig deep to identify needs that are more difficult to find [4,28].

Being part of the user group, I took the pilot interview, to have my personal feedback. Autoethnography is a valuable approach to report and document self-representation of the situation studied and identify possible biases [3,8,13,14]. Moreover, changing the role from researcher to user gave me the tools to assess the structure of the interview and validate the organization of it.

The analysis [10,29] of the eight interviews was made through the transcription of the audio recording, followed by the text analysis mapped with the pictures taken by the users. The transcription of the interviews has been printed and cut into chunks. Mapping together the chunks was made manually, and it resulted in the creation of an initial clusterization of values. Notes and design ideas have been annotated on different post-its and used later for the coding phase.

The final coding phase was made starting from pre-set labels extracted from the previous clusterization, resulting in the final diagram for overall patterns.

From the analysis, it came out that the meaning of home could be defined by different moments, and the analysis of the research led to the concept of the coming back home as an everyday practice, crucial in the meaning of home. The goal now was to understand how to design for the experience of home in the moment of return back, aiming to connect the person with the home in that moment. And how design can facilitate the creation of a smooth and implicit interaction for the feeling of home for people that have moved abroad.

### Current scenario analysis

An analysis of the current scenario [4] took place to define the current situation of the routine of the coming back home moment. The analysis was made firstly asking twenty-two international people to define the actions that they were performing in their daily ritual, asking to point out the order of the actions and the objects involved in the sequence. Afterward, it was asked to four of them to self-videotape a normal return, and the videos were analyzed together with the participants. During the analysis-interview session, the participants were asked what qualities they felt were missing in this coming back home situation, and what they were looking for from a new experience of it. During the interview, I asked the participants to compare the actual coming back home actions with the actions that they were used to do in the previous home, and if they had felt some difference in the two moments.

The key values were analyzed and used as guidelines in the concept definition phase for the creation of the research probe, mapped together with the results of the contextual interviews.

Scenario analysis is a good tool to analyze situations with a 1st person perspective, and it may result into more personal, genuine, and nuanced insights from users [4].

### Cultural probe

To prototype the experience, the values extracted from the user research and the scenario analysis were translated in a low-fi probe. The probe was designed to provoke inspirational responses [16] during a week-long deployment in five different homes. The probe was namely a family of five small paper-made solids containing a LED and an inner

magnet to make them attachable to metallic surfaces (see Figure 4). The goal for the deployment was to expose the first version of the concept to user evaluation and capture inspirational responses, seeing the experience as a material experiment in the real context. Five international people were asked to experience and live for a week with the five mini-lamps, reporting the use of them through pictures that they could send to me. A small interview was made at the end of the week, and the data were analyzed to extract the experiential values. Moreover, the analysis of the interview with the pictures received from the users was used to analyze the roles that the artifact had covered during the test.

The role extracted were mapped together to create the overall pattern of the impact of the probe on the daily life of the participants.

The roles extracted:

- atmosphere creator - *"The light creates a nice and cozy atmosphere, sometimes I don't switch the lights on for few seconds and I just enjoy the subtle light that they produce."*
- path creator - *"This illuminated path brings me to my couch, where I like to relax for some time when I am back."*
- landmark - *"I have placed them next to objects that I engage with when I am back"*
- welcoming tool - *"I open the door and I see them waiting and welcoming me."*
- reminder tool - *"How to not forget keys!"* (sent with attached picture in Figure 4b)
- space divider - *"I like to have each of them in a different room of my home, every time that I open a door, they surprise me!"*

The roles have been used to define the design and the interaction of the final probe, which will be presented in the Research Probe section.
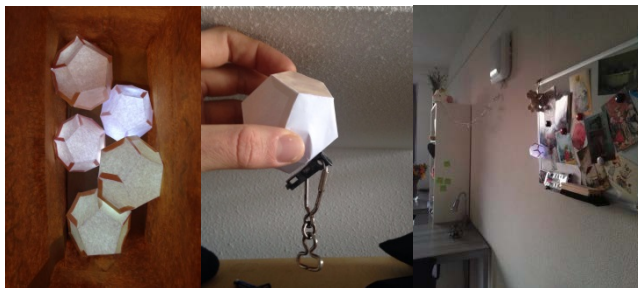


**Figure 4. The lo-fi probe, pictures sent by the participants of the deployment to shaow the use of them.**

**The final study, long-term user test**
To validate the design guidelines, the final probe was deployed for two weeks in two different international people's apartments [15,34].

The study was organized in the following way: an initial interview has been done with the participants in their house to investigate the existing scenario of their coming back routine. The same day the probe was deployed with little information about its role, in order not to influence the experience. Together with a small manual about how to charge the artifacts and some practical information about the use of the Wi-Fi, the users were given a copy of the experience diary that they were asked to fill in on a daily basis, after entering the home, and so after the interaction of the probe had happened.

During the two weeks of the deployment, the users were asked to collect pictures and thoughts about the role of the probe [8], pictures that have been analyzed together during the mid-interview (after a week from the day of the deployment), and the final interview after two weeks. During the final interview, the participants were asked to assess the overall experience of the probe, looking back at the pictures and at the diary together.

The interviews have been audio recorded to give complete freedom and to have a continuous conversation with the participant, rather than taking notes during the conversation.

The analysis of the data was done with the same strategy used for the analysis of the contextual interviews [10, 29].

The analysis of the data collected was done through the mapping of the quotes of the users from the interviews, through the comparison between the first interview and the final interview after the two weeks test and through the analysis of the pictures received and the diary. The diary has been used to investigate the use of the probe in relation to the space, asking the participants to indicate the location of them on a plan reproducing their apartment. Moreover, the diary has been used to extract contextual insights about real-time user behaviors and needs [5].

**THE RESEARCH PROBE**
For the design of the final probe, the aim was to translate the values mapped from previous research into a tangible artifact. The aim was to create an artifact that would have engaged the user in the creation of a new experience in the routine of his return.

The values that the probe had to address were:

- the feeling of presence, connected with the idea of security;
- the feeling of being awaited;
- the transition from outside to inside;
- the feeling of being guided inside the home;
- the feeling of being welcomed.

The design process led to create a more organic shape, keeping the shell as simple as possible, so to have the idea of a neutral and pure object. At this phase of research, there was no need for characterization, the users had to have the freedom to give a role and a personalization to the objects themselves.

From the analysis of the lo-fi probe deployment, it has been validated that light was a subtle way to express the concept of presence.



**Figure 5. Pictures of the probe, a plain one and the probe in the context of use.**

The interaction of the probe was designed to work only at the moment of the return. The trigger for the system to start was placed next to the door, and Wi-Fi connected to the four lamps through a based Wi-Fi enabled microprocessor (Wemos D1 Mini V2 - ESP8266-12F - CH340). An infrared motion sensor (PIR sensor) activated the system, and as soon as motion was detected from the object placed next to the door, the lamps were programmed to have a round of blink. As long as the user would pass by the lamps, the motion sensor of the lamp itself would activate the LED for an amount of time that was decided by the user. The last lamp triggered would set the timer for all the lamps, and after the amount of time previously decided, all the lamps would turn off, until the next coming back home.

The first object of the set had to be next to the entrance, and since all the components of the set were powered by a rechargeable power bank, the user could use them everywhere in the house.

To see the entire interaction, please find the video at this link https://vimeo.com/221480489.

The probe was designed to have a small dimension by fitting in a hand. Two magnets were placed at the bottom of the lamp to give the opportunity to attach them to metallic surfaces. This was a feature tested in the previous lo-fi version and had received positive feedback from the users.

The probe was a tangible translation of the values extracted from the users' studies that would have made the coming back home a moment of connection with the home.

**RESULTS**

The aim of the long-term user test was to validate if the assumptions made about the feeling of presence, the coming back home as a ritual, the slow transition from outside to inside and the idea of something that is waiting for you and welcoming you when you are back, could make the connection with your home stronger and thus improve the feeling of home.

Also, the aim was to identify the emotional connection with the artifact, in order to draw design guidelines on how design could qualitatively improve our coming back home routine.

The users were given the probe without a description of the purpose of it, and the testing was meant for them to discover the roles and the impact of the design on their daily return. The users were curious and challenged by the interaction of the probe. Initially, one of them was afraid that the probe was broken because it had only blinked once after she returned. But, because of the built-in LEDs of the electronics inside, she noticed that they were on: *'I like the small blue and red lights that are always on, they are telling you that the lamps are alive!'*. After a few days, the same participant sent a message with a picture (see Figure 6) saying: *'I opened the door, and I felt welcomed by them! It's like a delicate greeting'*.

Also, the function of the first artifact, the one that had to stay next to the door, was quickly discovered: *'Aah, the guy next to the door... It makes them communicate, it's a silent conversation that they have, and the topic is my return!'*.

The programmed order of the round of blinks was discovered by the first user: *'I have found that they have an order... And I have put them in the right order, I like that they create a sequence when I'm back'*. In fact, the way how she placed the lamps in her studio gave her the possibility to see them altogether from her entrance door (see Figure 6). But the second user, who has placed the lamps in separate rooms, took some more time to notice the sequence.

The second user gave different functions to the artifact. During the two weeks, he did not change the position of them in the space, because *'I have decided to put them in specific places, next to the spots where he would leave things like keys, where I take off my shoes and so on'*. The same participant decided to put one of the lamps next to a pile of books that he wanted to read, using the lamp as a reminder (see Figure 7a). Same as the one next to the shoe rack: *'since they are here, I remember to take off my shoes when I'm back'* (see Figure 7b).

During the first interview after a week from the deployment, both the participants referred that, knowing that the lamps were waiting for them to start; they were

experiencing their return differently, more consciously. *'When I am downstairs, and I know that I will open my apartment door soon, knowing that they are waiting for me, creates a sort of anticipation of my return for me.'* And the other: *'thank to them I am more aware of my coming back routine'*.



**Figure 6. Picture took from one the participants of the long-term study to show the use of the probe.**



**Figure 7. Pictures took from one the participants of the long-term study to show the use of the probe.**

When, during the final interview, the users were asked to define the artifact with some keywords, they referred to them as a *welcoming presence, a guidance, a companion, an anticipation, and a reminder.*

The analysis of the data gathered during the two weeks of the tests led to the creation of twelve keywords given to the set of lamps that were used by the users to describe the role of the probe in their coming back routine.

The twelve keywords (guidance, ritual, anticipation, welcome, security, personalization, atmosphere, presence, companion, reminder, communication, awaited) have been clustered together for the creation of four different guidelines that will be presented in the Discussion session.

## DISCUSSION

The keywords extracted from the analysis of the final user tests were mapped together, resulting in four design guidelines for the qualitative improvement of the feeling of home in the moment of the daily return. Moreover, the focus of the guidelines was put also in the definitions of the strategies necessaries to create a stronger connection between users and their home environment.

- <u>Design as a tool to create a welcoming atmosphere for the coming back</u> (ritual, anticipation, welcome, atmosphere, security, communication, awaited); the most experienced pattern was the welcoming atmosphere that the lamps can create through their interaction with the user, in the moment of their return. The welcoming values added a feeling of security to the routine of the users, and the interaction was experienced as a silent greeting.

- <u>Augmenting the perception of the routine of the coming back home moment</u> (guidance, anticipation, personalization, reminder); the experience of the probe has shown that the values of path and guidance through the return, have an effect on the users' awareness about their coming back routine, creating a stronger connection with the space.
  Being more aware was connected with the idea of feeling the space where the user was, and in this case, their home.

- <u>Design as a tool to create the feeling of companionship</u> (presence, companion, communication, awaited); the lamps were also experienced as being alive, as they were waiting for the user to be home. This has been connected with the idea of companionship, a value that has been experienced as positive. Knowing that one is not going to be alone once back home, this does change the experience of the return.

- <u>Design as a home-making practice</u> (guidance, ritual, security, personalization, atmosphere, reminder); design can become and trigger users in the creation of home-making practices. With this aim, crucial will be the user freedom o personalize the object, t create his own ritual around it and to become part of his environment, having, for example, specific functions (like the one as *reminder* experienced by one of the participants of the long-term study).

When designing for the creation of experiences, qualitative research is a useful approach, since it is helpful in the creation of conversation with the users selected.

A follow-up project could investigate on how to integrate the design guidelines into products, and other in real context and with real users evaluations should be done to validate them.

## CONCLUSIONS AND FUTURE WORK

In this paper, an artefact-assisted research on how design can improve the meaning of home for Expat in the moment of their daily coming back has been presented. By analyzing the context of the study and involving the users at different stages of the research, qualities of the meaning of home and values of the coming back home moment were extracted and embedded into a design probe. From the results gained, it is possible to improve the quality of the everyday life through the improvement of the experience of feeling at home and the qualities that make a place home. The analysis of the experience of the design probe in a real-life context resulted in the definition of the feeling of home as an everyday practice, creating design guidelines on how design can improve the feeling for that specific moment. Crucial are the values of presence, of a welcoming object and the value of a sequence that does drive the individual inside your home once back. Qualitative research approach has been crucial for the extraction of qualities that have been necessary to design the experience. By applying the design guidelines to the creation of new concepts and artifacts, future research and user evaluation can bring a stronger validation of the guidelines, leading to the creation of a framework to design for the experience of the feeling of home.

## ACKNOWLEDGMENTS

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