

Sheila & Tex: an experienceable showroom involving home AI assistants to provoke discussion about a radical future with SHTs.

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ABSTRACT

Smart home technologies (SHTs) are being placed in homes more and more often. These technologies are made in such a way that they are expected to increasingly take over everyday tasks in the home. However, the life of a smart home inhabitant is dynamic and involves everyday crises of routine causing sensed data by SHTs to be noisy or misinterpreted. Previous research on SHTs and a dynamic life show perspectives on possible futures involving SHTs. However, there are no studies showing radical futures and existing studies do not involve participants. In this paper we present an experienceable showroom about a radical future scenario involving learning SHTs. Eight participants were placed in this radical future scenario after which a semi-structured interview took place. A thematic analysis shows potential opportunities and limitations of the human-ai interaction and confirms the enormous challenge in privacy of big data. Moreover, this study shows the

value of an experienceable showroom approach in areas that are not yet completely feasible, especially in highly complex topics, where simply imagining might not reach the core issues and opportunities.

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Authors Keywords

Smart home Technologies; Artificial intelligence; Privacy; Big Data; Showroom method; experienceable showroom;



INTRODUCTION

Smart home technologies (SHTs) are emerging technologies that are finding their way into people's homes more often [19]. These technologies are made in such a way that they gather data to learn the routine of their inhabitants in order to adjust their actions to the inhabitants' preferences and increasingly take over everyday tasks in the home.

However, an inhabitant's life is dynamic and can have many unexpected events. These events include spontaneous user decisions or exceptional events. These exceptional events in turn can be events like extreme weather, pets, devices that are broken or internet failure [27]. These events are considered as everyday crises of routine, as described by Reckwitz [18]. Several studies have done research towards these crises of routine [23, 27]. These crises of routine can cause the sensed data to be ambiguous, noisy and sparse [15]. However, these studies do not necessarily focus on what happens when SHTs misinterpret data, nor do they have a focus on the consequences. Moreover, they lack involvement of participants. Participants who are possibly going to be the future users of SHTs. It is important to know how participants respond to a certain future situation in order to appropriately design for this future, and to prevent issues with data misinterpretation and most importantly the consequences.

In this study we took a showroom approach in which we aimed to "go beyond knowledge, and ask novel, uncomfortable, but relevant questions, rather than providing comforting answers" and thereby took a detour from established practices [29]. We designed a radical future scenario in which many SHTs are involved and are managed and controlled by a Home AI assistant. In this scenario the AI assistant misinterprets data coming in from SHTs, which has major consequences for the participant experiencing the scenario. After participants experienced the scenario, a semi-structured interview took place. Results show perspectives and opinions on privacy, power and usefulness of a home AI assistant. Moreover, it showed how an experienceable

showroom approach to research can spark discussion and imagination in participants.

Our study has a twofold contribution: both thematic and methodological. Firstly, as a thematic contribution, we highlight potential opportunities and limitations of the human-ai interaction and confirm the enormous challenge in privacy of big data. Secondly, as a methodological contribution, we highlight the value of an experienceable showroom approach in areas that are not yet completely feasible, especially in highly complex topics, where simply imagining might not reach the core issues and opportunities.

The pictorial will continue with related work on SHTs and AI. Next, the process of making the radical future experienceable scenario will be described and supported with visuals. Followed by the findings of the semi-constructed interview and the discussion on the meaning of these findings in relation to other research on SHTs and AI. Moreover, we also discuss the methodological contribution of conducting a showroom approach within this field of interest.



RELATED WORKS

In this section we will cover related works in smart home technologies, AI (home) assistants, and relevant related showroom approaches in literature.

Smart home technologies and a dynamic life

Multiple studies have revealed problems and opportunities with SHTs and a dynamic life (in the future). In a speculative analysis of the practice of roomba riding, Strengers [22] brought forward that designers should not only consider the human social practices associated with new and emerging AI. But by considering other practices, for example for non-humans, it will lead in a more positive turn to new opportunities. Opportunities in how technologies can become rebranded, as in her study, as pet entertainment devices. This study shows opportunities for designing for a more positive future including SHT's. However, this study misses out on what could go wrong when pets are performing the practice of Roomba Riding. Moreover, it shows the current practices that are associated with robot vacuum cleaners, and does not go into possible, or even radical, futures.

Two studies have focused more on providing a skeptical view of how SHTs will deal with a dynamic life in the future. In work from Strengers et al. [23] the researchers introduced the concept of Social Practice Imaginaries, which seeks "to envision possible future scenarios grounded in emerging trends from the present". A part of the role of this concept is to mobilize uncertain futures to challenge the position that technological innovation will drive beneficial change in a particular sector.

Based on this work, Viaene et al. [27] created a set of diverse plausible imaginaries in the future for three social practices from a designer's interpretation of Strengers et al. [23] their concept. For each of the three practices (waking up, doing groceries, and heating/cooling the home) they created two imaginary futures in which one is perfectly supported by SHTs and one imaginary future involving everyday crises of routine. By doing so, they enable designers and design researchers to bring forth

diverse critical reflections, and by imagining plausible futures they show how these same designers can vision beyond what is currently available on the market [27].

These studies show that imagining possible futures can lead to insights that are beneficial in developing technological innovations. However, these studies do lack a consideration of two factors. Firstly, the researchers' perspectives on a possible future are in our opinion very realistic. They miss out on more critical reflections when they do not consider imagining more radical futures. Many aspects in an imagined radical future would indeed not be realistic, but there can be aspects included that can actually be realistic. These aspects are therefore important to enlighten and to be critical towards. Our study involves a radical future scenario to highlight these aspects.

Secondly, these studies are only imagining possible futures. They do not experiment with possible futures, thus they do not involve participants that can give critical reflections and insights on innovative technologies. That is why we have chosen to involve participants in an experienceable showroom setting. We deliberately concealed information about the radical future scenario from the participants before participating. This allows them to experience the radical future scenario in a showroom setting without being biased, such that they create their own opinion without influence from the researchers.

Showroom Approach

The showroom method, as described by Koskinen et al. [12], relies on debate rather than statistical data and analysis. Instead "it questions the way in which people see and experience the material world and elicits change through debate". But instead of asking novel, uncomfortable, but relevant questions, we take a different detour from established practices [29]. We let participants experience a radical, uncomfortable future scenario that provokes debate.

Our showroom is made in such a way that participants can be resourceful as described by Kuijter et al. [13]:

"using the materials (including other people) available in the situation as resources to solve problems or challenges arising from nonstandard situations, i.e. (everyday) situations that are not part of common practice and for which there are neither commonly agreed nor widely 'tested' ways of proceeding".

Participants for instance have the possibility to hack the AI assistant with the use of the materials in the room. However, this assistant is in turn able to respond and adapt to these changes and therefore can be considered as "a system that has been designed for change, could be able to adapt to new needs as life and circumstances change" [13]. It is also aware of how the SHT's in the home are used, more importantly how they are misused [13].

This in turn leads to an experienceable showroom in which participants can interact with the AI and misuse SHT's to 'escape' the situation in which they are put. Not many other studies have explored doing research by using an experienceable showroom method. However, the pilot study by Kihara et al. [10] shows promising results of how an experienceable showroom, in this case persuasive games, can generate awareness about complex sociotechnical issues because "they render the issues more accessible, legible, and relatable". However, in their work they focused on awareness. In our experienceable showroom we try to extend this such that it evokes debate in participants, by doing a semi-structured interview after the experience. Moreover, their research focuses on AI-enhanced surveillance in a smart city. Even though we incorporate AI as well, the context in which AI will be used is different and therefore important to investigate.

AI assistants & big data

In pop culture, AI assistants have sometimes been put forward as being helpful and beneficial. A well-known example is R2D2 from the Star Wars movies. However, pop culture mostly shows the negative or even radical side of AI (assistants), considering there is a common

theme called AI-takeovers in science fiction [29].

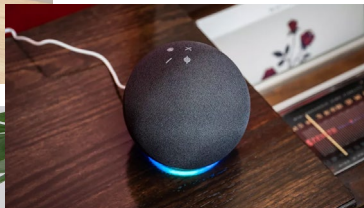
Besides this radical portrayal of AI assistants, there has been actual research towards AI assistants in terms of security & privacy. Abdi et al. [1] have done research towards user's perspectives on security and privacy concerning these AI assistants and their complex ecosystem by doing semi-structured interviews. They found that users have different perceptions of where data is being stored, processed, and shared. The consequence is that these users do not (know how to) correctly protect their data in a world where data is becoming more and more important. In our showroom we try to create awareness and spark discussion about a radical future AI home assistant collecting and using personal data.

Moreover, in this radical scenario, we try to combine this data collection with another topic that has been relevant in the past two years: COVID-19. Several studies have shown ways and discussed examples of how big data can be applied to manage the spread of the COVID-19 disease [4, 30]. Zwitter and Gstrein [31] for instance mention that the use of location data can be helpful to control the disease. This shows that governments have access to a particular kind of data. In our radical experience we tried to spark debate about governments, stakeholders or third parties collecting or being able to use your data, which in our case can have radical consequences.

To conclude, studies that have researched the problem of SHTs and a dynamic life lack a radical perspective and do not include participants. Therefore, we decided to create a radical experienceable future scenario in which participants can interact with the overarching system. This radical system has in turn been developed while keeping important related topics in mind: the use of AI and AI home assistants, their privacy and security issues, and the collection and use of big data.

METHODS

We, the designers of this radical future experience, are Industrial Design master students. This entails that we have previous experience with design research. As designers we often think about the challenges of tomorrow, not only the technical innovation but the influence on individuals and society. In the next section it is described how we approach this topic and how we created the radical future experience to research the experience of mistakes made by a Home AI.



Technological Influences

Home assistants are moving into our houses, especially voice controlled apps like Google home, Alexa and Siri. The number of smart voice assistants is forecast to double in the coming few years [25]. These developments can lead to privacy issues [7] which sparked our interest.

The software behind commonly used social media, is already based on a high level of personalisation [20]. We often find ourselves wound up in the platforms, and believe that this type of content will also become highly integrated in the home environment.

Societal influences

During COVID the limitation of personal freedom got to many of us. The integration of big data limited personal freedom in the Netherlands. The sudden acceptance of vaccine passports in society, removed our own freedom to act and choose. This discussion on personal freedom and societal greater good, interested us to use as a topic of our radical future experience.



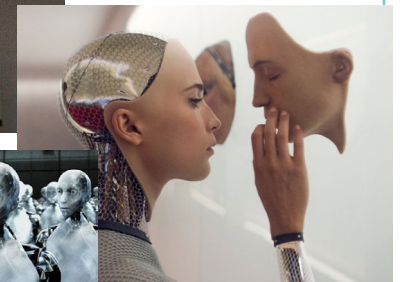
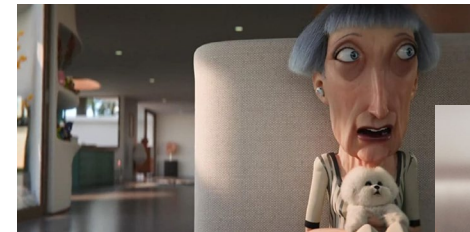
Showroom Approach

External Influences

Cultural Influences

SHTs are very prevalent in today's pop culture, movies depicting characters and programs. A few specifically inspired us to develop the current experienceable showroom. The episode Automated Customer Service in the series Love, Death & Robots depicts a SHT which recognizes a pet dog as a threat, and consequently in a series of events decides to try and eliminate the homeowner. This short film highlights a very interesting notion of learning systems and what if an error occurs in a smart home [21].

Notions of AI controlling humans has also been very prevalent in movies, this interest for AI assistants which do not only follow up on commands but develop to an equal of humans, fascinates us. And it inspires us to think in a future with unimaginable technologies.



Participant Pilot Study

The initial pilot study plot, see figure XX, was translated into an experience showroom, in order to rapidly involve participants in our process. We did this by making a Minimum Viable Product, a slideshow controlled by a designer which created a limited interaction with the participant. One of the designers sat in the room and controlled the AI manually at the voice command of the participants.

Four participants participated in the pilot study, interacted with our system, and were interviewed after the experience. We were mostly interested in the experience of the room, and the understanding of the storyline. Moreover we involved the participants, and invited them to provide points of improvement.

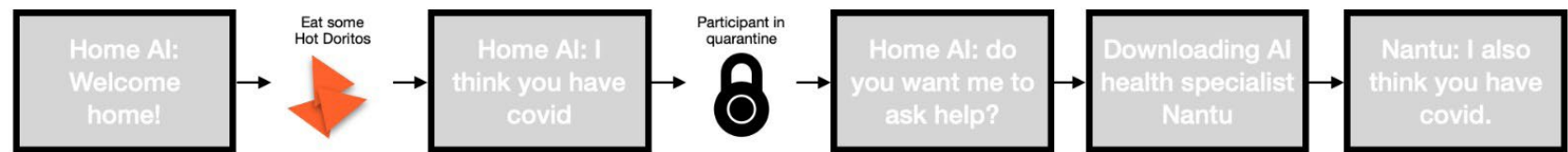
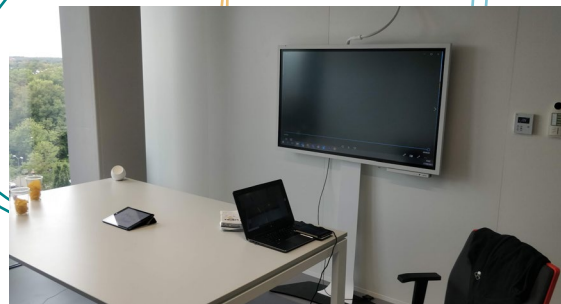


Figure 1: Initial pilot study plot

Evaluation of the Pilot Study

The main learning points from the pilot study were evaluated by the designers. The reactions of the participants highlighted that there were a few parts very concerning about our setup. The experience did not feel like home, as the room and interaction was very clinical. Participants mentioned a feeling of being in a hospital. The AI assistant was augmented by a linear storyline and did not leave any flexible options for user input. Participants mentioned they wanted to control the situation. An increase in interaction possibilities was necessary for the assistant to fulfill the role of “assistant”. Lastly, none of the participants understood the actual plot of the misdiagnosis caused by the home AI. The false positive was very important for the plot, as it highlights the complex issues our dynamic life can have on an AI assistant, and was a key point of the discussion we wanted to spark.



Participant Input

Adaptation

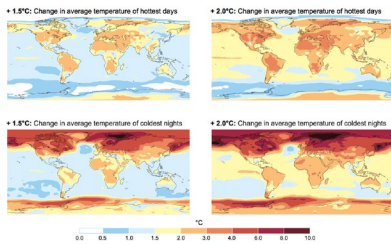
The increase of user input in the scenario became the key focus to improve the experience. The function of an SHT is to improve the daily life of the inhabitant of the smart home by adapting to the behavior of the participant. However, more so in our vision on SHT’s we believe that a big role could also be in providing these options, and rather than reacting to the behavior and reactions of the inhabitants anticipate their behavior and wishes .

Secondly, the importance of the participants really experiencing the story became more important. We improved this by including the explanation in a news feed at the end of the experience, summarising what had happened leading up to the home-quarantine of the participant.

Role of Trying

During the process, the designers iteratively tried and moulded the storyline and experience. In order to facilitate the experience often small try-outs of different elements were discussed. Especially, in preparation for the final experience showroom it became evident that in order to present an involving experience, the details are of great importance. Details that you will only uncover by doing it yourself.

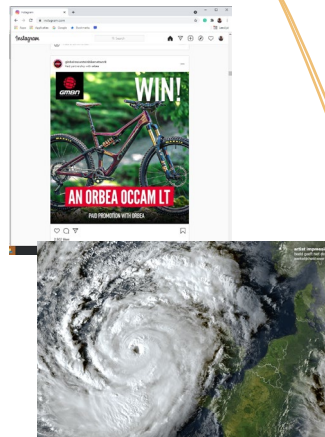
Learning through making was a big part in this process. Certain interactions with the AI, such as accounting for questions we cannot program the SHTs to answer in detail, or when it was unclear what the participant had said an answer had to be accounted for to make the interaction seamless.



Background on the Elements of the AI Assistant

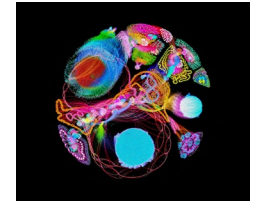
A lot of elements of the AI assistant were based on existing practises and real life events as well as commonly known predicted future events. For instance the spicy chip is based on the concept of digital advertisement. The assistant suggests a new chip flavour that “the AI is sure you’ll like”. However, conceptually this is a paid advertisement of the chip manufacturer.

Moreover, halfway through the experience the participants are asked if they are willing to share personal data with an additional AI, this type of permission is often presented as something you just do, however this does often include very personal data. Comparative to the giant terms and conditions you are often presented with when signing up for something. The assumption to safekeep of your data is something we wanted to highlight. In some of the news sections the effects of climate change are involved. A comment of a “deep fake” personalised DJ for music, and personalised compilations are there to showcase the potential of future recommendation entertainment. The voice of the assistants are all generated by an AI, as well as their visual representations.



Designers becoming the AI

In order to facilitate the experience showroom, we as designers had to become the AI ourselves. We were the ones creating the conversations, generating visuals and choosing what to show the participants. Which made it evident that human computer interaction is not straightforward to mimic. Determining the responses and providing convincing and coherent responses was a challenge the designers interpreted together.



Creating the AI Experience

The final storyline of the experience showroom was eventually non-linear, see figure XY. The resulting assistant behavior would follow certain patterns that would lead back to a main storyline, however some of the pathways did not come back to the main ending. This resulted in a complex collection of storylines which were paired with slides containing audio and visuals of our AI assistant.

The actual slides would be controlled by one of the designers, and streamed to the participants room, in this room a laptop would be set up which was streaming audio and video back to the designer. This interaction gave the participant the sense that the AI assistant was really responding to their questions and needs. The AI assistant provided the participants with ample choices to make during the experience. The content of the slides was all made by collecting video data and sound from a whole variety of sources. As well as synthesising new material to strengthen the sense of a future world.

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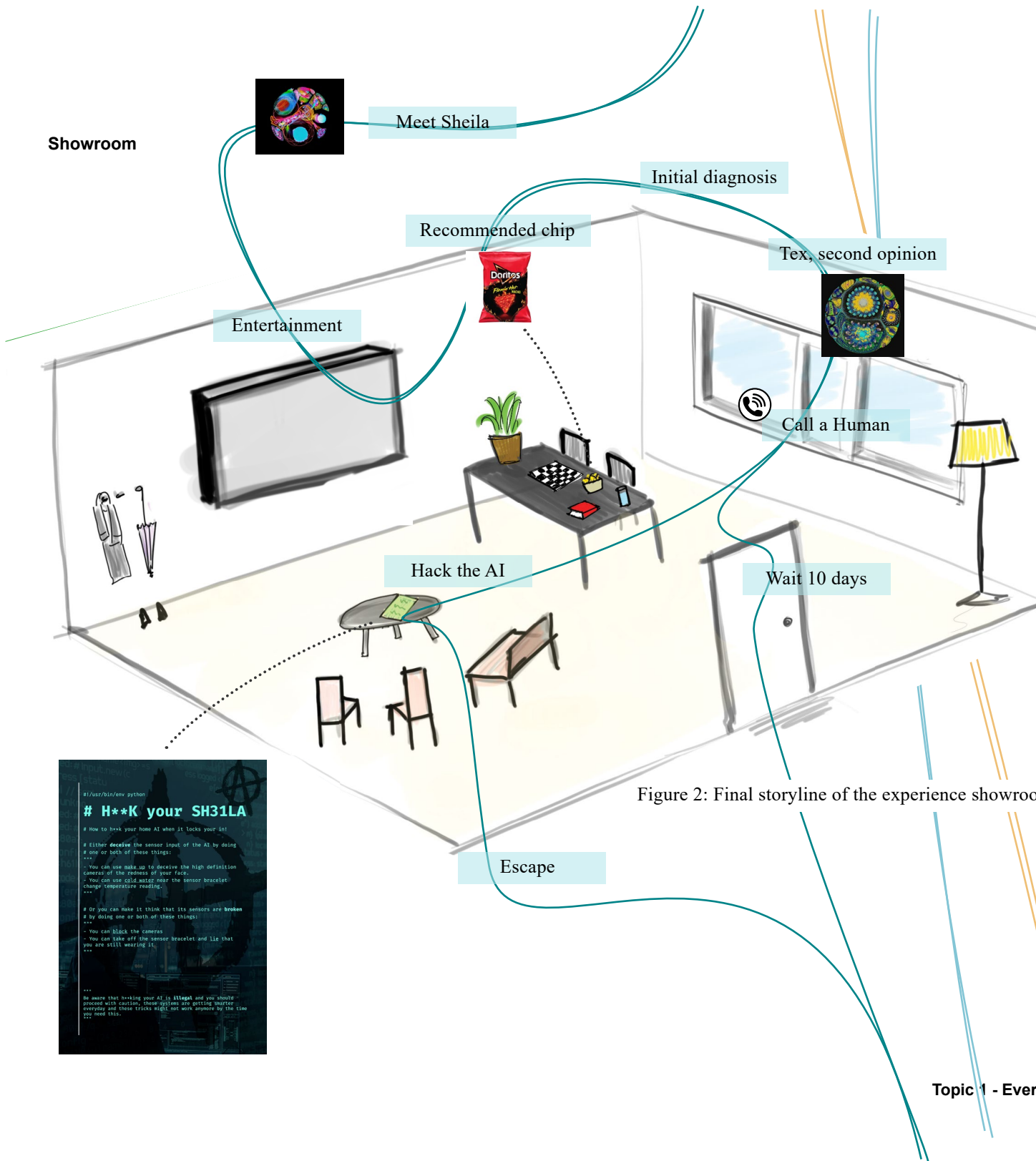


Figure 2: Final storyline of the experience showroom

Final Test Setup

The final experience was set up as a simple living room with a central screen on which the home AI, Sheila, was visualised. The researchers were able to control the interaction remotely while observing the participants actions by streaming live camera and microphone footage. This allowed the researchers to identify actions or phenomena to ask about later during the interview.

Interview Method

Each participant (n=8) was in the room for 10 to 20 minutes depending on the path they took, see figure XY, after which they were asked to participate in a short interview (10 to 15 minutes). All participants were design students, evenly divided bachelor and master students. The interview was semi-structured with enough room to ask about interesting actions or opinions started during the experience or the interview.

During the interview the participants were asked to discuss their experiences and initial thoughts of the showroom experience itself. They were asked to share their opinions about living with a smart home AI like this, if an application like this would be imaginable in the future, how much power a smart home AI should have and how to handle mistakes made by a smart home AI. The interviews were recorded and transcribed for thematic analysis.

FINDINGS

From the thematic analysis of the interview conducted after the experience (n=8) a multitude of themes related to the showroom setup could be identified as well as themes related to the topic. Starting with the themes identified related to the experience of the showroom setup. Besides that the insights from this methodology will be noted about the process itself, the kind of imaginations were sparked in the participants and the kind of insights that were gained from a showroom approach.

Interview Findings:

Showroom: The Contrast

Many participants stepped into the room with the future scenario setup with limited information given by the designers to not spoil too much. To some this contrast was surprising and too quickly (n=3), others found the room to be furnished cosy and easy to adapt to because of the assisting AI that was able to comfort the participants (n=3).

Showroom: Immersion into the Scenario

The participants who were able to adapt quickly had different kinds of perceptions of the room. Participant 2 mentioned specifically that because they had smart devices themselves, they perceived the experience more like a more advanced google home [8] or amazon echo [17]. While other participants perceived the experience more as an escape room (P8), a scenario from the TV show Black Mirror (P1) or as if they were in the room with someone to keep them company (P4).

The designers decided to keep the participants in the dark about the backstory of how the AI came to be in their homes. This was confusing for some of the participants “during the experience I was constantly wondering, why does this AI have the power over me? Did I give it the permission to do this? It was not very transparent.” (P2). This confusion also initiated participants to test out the system and interaction more.

Showroom: Boundaries

Important to mention is that the participants who decided to hack the AI system against the law all mentioned they would not do the same if this was a real life scenario, indicating they went over their normal boundaries (n=3).

Topic: Personal Data

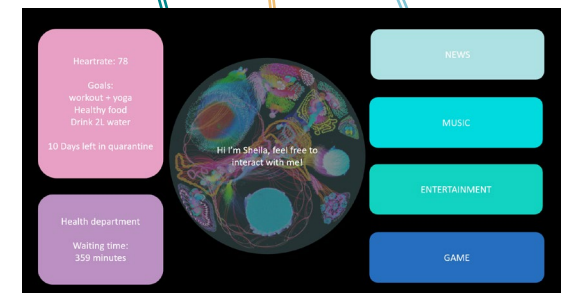
The connection between the smart home system and health data was confronting for some of the participants (n=2) while others did not mind sharing their data if it would only be shared with governmental instances or official health care facilitators to help them further (n=2). Participant 2 specifically mentioned that because of the request for access “I was confronted with the fact that it was gathering data about me, data I did not want to share.”

Topic: Diagnosis by SHTs

The scenario the participants went through consisted of the home AI diagnosing the participant with COVID, while most participants disagreed (n=7), participant 4 was convinced of the fact that they were in fact infected. The other participants were surprised “an AI should not be able to lock you in before a human has been involved in the decision” (P2). Noting that “A doctor can bring the message with more subtlety, more like advice. Instead of just putting you into quarantine” (P5). Participant 3, notes specifically that “If I feel bad, I usually don’t need a machine or AI to tell me that I am ill. I don’t think it will add anything to my life”.

Topic: Responsibility of mistakes made by SHTs

The inspiration of this showroom was the misinterpretation of data and the consequences that could follow. It was interesting to hear a very diverse opinion on the responsibility of mistakes like the one from our scenario. One participant was of the opinion that it was the fault of the AI (n=1), some participants blamed the developers of the AI (n=3), others blamed the government who must have given the AI the power to lock people in (n=3) and participant 4 through it was nobody’s fault.



Topic: Autonomy

Most of the participants found that the user should have the power to lock users into their homes when diagnosed by a home AI (n=4). “In the end I think it is my own opinion or perception that is most important. There should be some control and autonomy for the user” (P4). Having this control is part of human autonomy that these participants found to be very important. Other participants thought it was the responsibility of the government to protect and educate their inhabitants from restrictions like this, while “In some cases the need for the implementation overrules the methods” (P1). Additionally participant 4 prefers to give the power to “Someone I would trust to determine this situation would be my General Practitioner”.

Most of the participants mentioned that their autonomy would be more important than the greater good if that would mean a home AI could lock them in (n=7). However, participant 1 mentioned “I think it does have its advantages, you could potentially contain an epidemic more easily, but I don’t think the discussion is about the advantages and disadvantages. It is purely about people’s opinions”. Addressing that this restriction of autonomy is dependent on the situation, cultural values and personal opinions.

Topic: Home AI Implementation

Many participants were skeptical about getting a home AI that could lock them into their homes themselves. However, they did like the other features the AI provided to be some kind of companion (n=5), “it was nice that when you are in a huge panic, there is something to help you in the situation, like a person, to make you feel more comfortable” (P4). While participant 8 mentioned they prefer a home AI to just automate simple tasks. Participant 6 noted “Compared to my own smart home, this home AI felt more like an active interaction. Similar to a personal assistant it asked me what music to play, I can imagine a home AI like that”.

Methodological Findings

Research Through Design in Showroom

The insights gained from the interviews conducted after the experience are merely part of the knowledge gained from the design process. Physically designing for a future scenario has resulted in deep insight into the possibilities and limitations of home AI and SHTs as we know it today. The development and background research led the designers to appropriate and integrate relevant theory to create a coherent story. There were multiple occasions where we had to design a future interaction or aspect we did not think about beforehand, shedding light on parts of the design that were unknown at the start of the research.

Sparkling Imagination in Participants

Most participants interpreted the scenarios differently, all reacting to what was happening in their own way, this variety of interpretations, reactions and reflections is qualitatively very valuable for future design in this field. As smart home technologies and AI assistants will also have to be able to deal with different kinds of people, not just different types of crises.

It was remarkable how fast most of the participants were able to adjust to the situation and interaction. There were still some hiccups or errors in the system, most of the participants seemed to look past it as they understood this was not a real AI system.

The different types of behaviours or reactions of the participants were extreme or unrealistic. Instead of imagining they were situated in a radical future world, most of them viewed the experience as a game or puzzle. Some participants started testing the system and pushing its boundaries to see what it could do. Despite this extreme behaviour compared to a real life scenario, the participants were all very immersed in the situation.

Showroom approach to Research

Experience showroom approach to research has proven to spark discussion and imagination in our participants. Participants were encouraged to think about social dilemmas and develop their opinions on their own relation with augmentative digital devices. The participants showed different perspectives on AI, and highlighted the sensitive nature of big data, and power of government. During the interviews we were able to discuss the different aspects in great detail, gaining insights into the reasoning behind opinions and answers formulated.

The physicality of the room and the AI provided a notable advantage to the emotions and thus discussions with participants. The ability to really imagine being in a world such as the one we created, offered the participants with a snippet of themselves being in a world like that. Compared to seeing a video, hearing a story or trying out a design fiction artifact this experience encompassed all their attention, allowing greater immersion. Moreover, the room felt like a potential home environment and thus facilitated the sense of how it would be to truly have such a home AI in the future.

DISCUSSION

The knowledge and insights that were gained from this research can be split into a thematic contribution and a methodological contribution. The constructive design research showroom approach to the subject would be very insightful on its own and therefore we searched for unfamiliar methods that could still be tested as contributions to this field. In our case a study in which researchers designed an actual escape room inspired us to have a similar approach, a very immersive approach. The rich experience allowed the participants to immerse in the future scenario and gain a deep understanding of this future world.

However, the future world we created had very radical elements, which might have affected some of the participants to think of this scenario to be too unrealistic and interpret it as a game. The notion of taking risk within the interaction had limited the realistic behavior of participants. It was mentioned that they knew they were getting out after a little while, and if for instance they hacked the AI there would be no legal consequence if caught. When analysing the data of research like this, it should be taken into account that these findings are derived from the experience of a radical future experience rather than of a normal future situation.

The scope of participants tested were all design students. This gave a few advantages, such as the ability to understand and appropriate the interaction even if not flawless and direct. However, it also meant that the participants already had some pre-set knowledge about Artificial Intelligence, and the intrinsic interest in this future scenario we might live in. This meant that discussions might have dove deeper than expected with non-designers. Thus, an experienced showroom technique might not harness the expected results with a different test group. Both the use of design students and the provocation with a radical scenario allowed us to debate the topics to a great detail with the participants.

The realization of the radical future scenario was done with simple presentation software and streaming

platforms. We used existing technologies in an inventive way to mimic the behaviour an home AI might have in the future. Based on the immersion of the participants this was sufficient for the showroom approach we envisioned. However, it is important to stress that the use of a pilot study allowed us to adjust the experience to ensure it would be interpreted by the participants the way we wanted to. When we designed the showroom experience using creative ways to mimic an interaction, the iterative process and use of a pilot study allowed us to ensure the radical future scenario to be understood correctly.

Lastly, it was clear that the AI participants envisioned had an advising and assisting role rather than a restricting one. The diagnoses of the AI was found to be helpful but most participants would have liked more transparency about what data this was based on, we did not offer this option in our scenario. The participants value their autonomy to be able to decide what to do with the diagnosis but do appreciate the assisting functionalities an home AI can provide, such as a personalised music selection. No conclusion could be drawn on who should take responsibility when an AI makes a mistake that has consequences like this.

CONCLUSION

This paper presents an experience showroom design research approach and stresses the influence of physicality for an immersive and rich interaction with a radical future scenario. The researchers themselves show that the development of the showroom can also generate insights as they discover new aspects and details of this future along the way. The inventive use of existing technologies and software to mimic or imitate envisioned interactions with AI was sufficient to allow participants to immerse in the future world presented in the experience. The physical aspects of the showroom approach allowed the researchers to approach the dynamic life of inhabitants and the everyday crises a SHTs might have to deal with, and gain insights from the method.

Additionally, the experience of the participants and interview conducted afterwards harnessed insights in the perspectives and opinions on privacy, power and usefulness of future SHTs. The radical future presented enabled the participants to not just reflect on the usability but also the underlying values related to home AI systems. The thematic analysis found the topic related themes to be personal data, diagnosis by SHTs, responsibility of mistakes, autonomy and home AI implementation were topic related. The methodological themes are the contrast, immersion into the scenario and boundaries. These outcomes of the discussion that the experience sparked, can be applied by other designers as key points to consider when designing or continuing interaction research with more authoritarian AI assistants.

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APPENDIX

Yorn Thijssen

Yorn Thijssen is an Industrial Designer Master student at the Eindhoven University of Technology. He graduated from the same university last year with an Industrial Design Bachelor degree. He focuses himself on ethical issues related to technologies and how he can create awareness for these issues amongst people. Therefore he is also doing a joint degree master's degree with Science Education and Communication, next to the master ID.

In the first weeks towards the research plan, and in the few weeks after, each group member contributed the same work. This work however, was divided in the several topics we were aiming for. We set ourselves homework activities that eventually contributed to the research plan and the overall development of the showroom.

At first I was skeptical about doing these activities and about the ambitions the group had. However, eventually I see how they contributed towards the final showroom and can say I am proud of this group for making these early ambitions reality.

In the final showroom I contributed to making audio and visuals for the entertainment system. Moreover, I created the end video participants would be shown at the end of the experience. All group members contributed to analysing the results in a thematic analysis. Regarding the report, I wrote the abstract, introduction and related works.