Social construction of a child interview robot

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MIX301 – Media Technology: Theory and Development

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Media and Interaction design, master

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Fall 2020

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Introduction

Children can be both easy and hard to understand. They are quick learners and are easily influenced by different factors such as other children, adults, and the environment they are in. When children are talking to adults, they often say whatever comes to their mind. But sometimes they struggle to say anything at all, especially when they are being confronted by adults, which can be intimidating. Talking to children about sensitive topics can be difficult. They might feel scared or guilty when they tell about something they have done or experienced. Since children are easily influenced by adults and their words, tone and body language, children might give information that the adults want to hear but is not necessarily true.

This course allowed use to come up with *Talkie*, a social interview robot for interacting and engaging conversations with children. Talkie is small, can move around, listen, talk, and show emotions. Talkie is developed with Artificial Intelligence, allowing it to learn, remember and adapt to the context of the conversations. Children can feel pressured when talking to adults when it comes to serious topics. Since Talkie is designed to be a toy-like robot, it enables children to feel more relaxed and let them tell their story in a safe environment.

While brainstorming the concept of Talkie as a child interview robot, we explored the potential users of it. We mainly focus on designing Talkie as a companion for children, but if Talkie would be used in the society, we could see it beneficial for social groups like journalism, psychologists, and the judiciary to use such robot. With the use of Talkie and similar robots in various fields, it can be used to collect qualitative data or valuable information from children that adults otherwise would not be able to achieve.

Throughout this essay, we will see how Talkie is technically designed and developed as a cybernetic machine using Human-Robot Interaction, and how Talkie will be used practically by different social groups in the society with Social Constructivism.

History of Social Interactive Robots

It is interesting to see how the evolution of interactive robots has progressed through the history of robotics. With the technology they had in past compared with the technology today, there were limitations on what they could to compared to what we can do now.

The history of robotics has its origins in the ancient world and the modern concept of the robots has its start in the Industrial Revolution, which allowed the use of complex mechanics. This also introduced us to implement with electricity. The combination made it possible to power machines with small compact motors which then allowed us to develop humanoid machines, and with the technology we have today, we can create from human-sized robots with the capacity for near-human thought and movement to pet-sized robots that are social, interactive and responds to our commands. (History of robots, n.d.)

This section discusses a selection of robots that made an impact in social robotics research and development, and these robots are chosen to be discussed particularly because of their attributes, which is used as inspiration for our own robot.

Cog

Cog is a robot developed by Rodney Brooks and designed at the MIT Artificial Intelligence Laboratory in 1994 where he used the actionist approach to build it. It was created to “look” like a human, in other words, it had a vision system, can turn its head, focus, and change focus, and its eyes look like human eyes. It can be a set of sensors and actuators which tries to approximate the sensory and motor dynamics of a human body (Brooks, 2002).

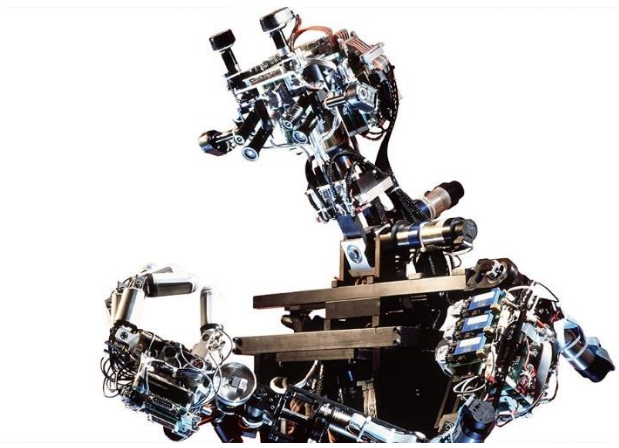

Figure 1: Cog

Brooks build the robot with a humanoid form of two reasons. The first one being that they have a relevant representation of the world because they are our own size and appear to have our own perspective on reality. The second reason is that they can supply relevant interaction patterns for people. They can be recognizable as if they were another human.

Kismet

Kismet is an emotional robot created by Cynthia Breazeal in the late 1998. What is unique with Kismet is that it has the basis for understandable intelligent behavior. It is based on the principle of *felt autonomy*. It is not as autonomous and intelligence as it seems, but evocative simulations of human behavior make humans very receptive to its behavior (Brooks, 2002).

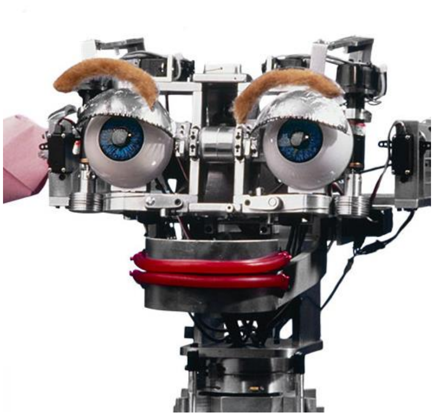

Figure 2: Kismet

Kismet could be described as a cartoon-like character. It is a robotic head with hairy eyebrows, big round eyes, and a broad metallic mouth with that sharp elf-like ears. Not only did it have human-like facial features, but it also had human-like facial expressions which is used to communicate its nine facial emotions.

Kaspar

Kaspar, created by researchers in The University of Hertfordshire, was developed for supporting research in human-robot interaction, and more specifically, companion robots (Turner, 2017). It is a humanoid robot that acts as a social companion to improve the lives of children with autism and other communication difficulties (Meet Kaspar, n.d.).

Figure 3: Kaspar

Kaspar acts as a social mediator, helping children to better interact and communicate with adults and other children. It can respond autonomously to touch, using sensors on its cheeks, arms, body, hands, and feet, to help children learn about socially acceptable tactile interaction.

Kaspar was designed to be low cost, while being minimally, but effectively, expressive and to enable research into relationships beyond the caretaker-infant dynamic that underlies interaction with Cog or Kismet (Turner, 2017).

An introduction to Talkie

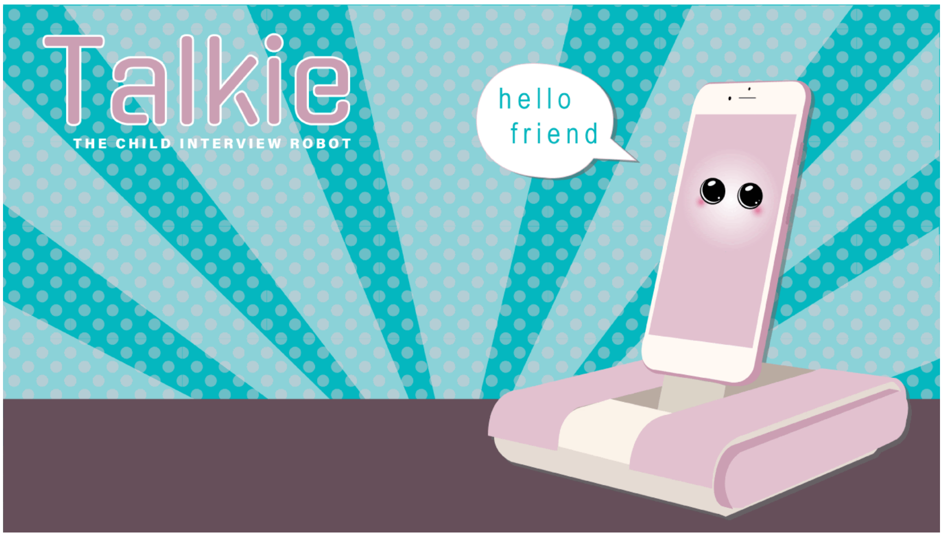

Figure 4: Talkie

Talkie is a child interview robot that also acts as a companion to the child. With its screen, Talkie can show a range of facial expression, images, and videos to entertain children. Talkie can also move around to show engagement, play with the child, follow the child, or even hide to engage in a hide-and-seek game. Talkie can sympathize with the child by showing its emotions. If the child is happy, Talkie will also express its happiness.

Talkie's name is inspired by the classical old-school communication device Walkie-Talkie. The main functionalities of Talkie are that it can "walk" and "talk". The word "Talkie" is short and simple to pronounce thus makes it easy for children to remember the name.

We enable Talkie to be used for explorative purposes such as journalism and psychology, but the overall design of Talkie is to be a companion for the children. We created Talkie with children in mind, how it will look and behave for them. Talkie's purpose falls apart if children refuse to talk to it.

Building Talkie with Human-robot Interaction

Since we are creating a prototype, any resource could be used that were available for us. We used a smartphone and a small PadBot T1 to realize Talkie. Combining these two technological components gave us a functioning robot. The next step was to decide how Talkie should look and behave like. Since we are focusing the interaction between a human and a robot, we use Human-robot Interaction to design Talkie.

Human-robot interaction is the design of interactions between humans and robots and is often referred as HRI by researchers. It is a field of study focusing on understanding, designing, and evaluating robotic systems for use by or with humans. HRI has been a topic even before any robots existed. This is because of active HRI development depends on natural language processing, a field of research which is older than robotics (Human–robot interaction, n.d.).

Remote interaction vs. Proximate interaction. Which fits more?

Interaction in HRI, by definition, requires communication between robots and humans. The interaction and communication that occurs between the two parties can be divided into two general categories: remote interaction and proximate interaction (1: Introduction | Human-Robot Interaction, 2012).

Remote interaction is the interaction between a human and a robot where both parties are not co-located and are separated spatially or temporally. For example, a doctor in Paris, France can operate a surgical robot located in Paris, Texas.

Proximate interaction means that human and robot are co-located and interact physically in the same room or environment. Social interaction includes social, emotive, and cognitive aspects of interaction. Humans and robots interact as peers or companions form for interaction is most relevant for our prototype since our robot is going to directly engage with children.

A sociable robot

For Talkie to be an interviewer, it must be sociable. According to Breazeal (2002), to make a robot "social", it must "support the human desire to treat others as distinct personalities and to be treated the same in turn".

Social robots must be believable as an illusion of life and must convey personality to the human who interacts with it. They must give attention, express emotions, and engage in playful antics in their own characteristic way (Breazeal, 2002).

There exist different reasons for what makes a robot social, and one robot can have few or many reasons for being defined as social. By extracting the desired attributes of the historical robots for what makes them social, we get speech from Kaspar, movement from Cog, and emotions from Kismet. We will use these three aspects to define our own social robot.

Speech

Some form of a communication is necessary when thinking about social. Speech is a natural component of being social. When considering speech in robot, it should be able to input and output speech, which is achieved by a Voice-user interface. A VUI makes spoken human interaction with computers possible, using speech recognition to understand spoken commands and answer questions, and typically text to speech to play a reply (Voice user interface, n.d).

Implementing VUI involves implementing text-to-speech and speech-to-text. What is very interesting is the text converted to speech. We could either have a human pronounce every single word in the dictionary and build up sentences, which might make the speech unnatural, or we can use speech synthesis. Speech synthesis is simply a form of output where a computer or other machine reads words to you out loud in a real or simulated voice played through a loudspeaker (Woodford, 2018).

Kaspar gives feedback in the form of speech. Kaspar would for example react when someone is pinching his nose or toes. He could also sing and talk to help the children develop their social skills. The voice of Kaspar could recognized as friendly and engaging, much like a young child. This approach is something we desire to have with Talkie. Kaspar was playful, and this valuable ability is something we want Talkie to have too. Being able to talk to children on their level creates a sound and engaging relationship.

Movement

The difference between humans and robots is that robots do not move with the freedom of living creatures. The movements of a robot are defined based on the tasks the robot is defined to achieve. The movement are also dependent on the structure of the robot. It can range from two-legged robots to multiple-legged robots. Some robots have no legs, either they fly or roll around (Gottlieb, 2010).

Since the designer of the robot's movement are limited to its mechanical structure, it is important for the designer to consider the way the robot's physical actions are interpreted by the people around them. The appearance of a robot sets the context for the interaction, setting expectations, triggering emotional responses, and evoking interaction affordances, while movement is critical to conveying more dynamic information about the robot.

Even though Cog's appearance is hugely different from Talkie's, we create Talkie appearance the same way Brooks created Cog. Brooks created Cog to look like a "human adult". Its appearance is suitable for interaction with adults because of its body features such as the size of its head, torso, arms, and hands. Because of its appearance, it is expected to move like a "human". Talkie is created to be small and friendly; it is suitable for children. We were limited to the machines motoric system but used this to our advantage when creating Talkie's behavior. The movements are little and subtle compared to Cog's movements, but enough to be playful to interact with the child.

Emotions

Emotional response is important in order to make good decisions in human contexts. «Robots will need something akin to emotions in order to make complex decisions» (Norman, 2004).

Emotions can be described as a strong feeling deriving from one's circumstances, mood, or relationships with others". Emotions are response to significant internal and external events.

Emotions have a conscious, experiential character. That is, there is “something it is like” to undergo an emotion. Some emotions feel good, some feel bad, and some have a mixture of both. Emotions, aside from their experiential character, are bound up with an awareness of one’s own body. Such bodily feelings are a central element of emotional experience.

Comparing emotions to speech and movements, it is not an interface but more of a reaction and a result. Even though Kismet is an emotional robot, it did not have emotions. Kismet was able to express emotions by making different facial expression which is controlled by sensory-motoric modalities.

The same way Kismet use auditory as one of the inputs, Talkie use the same mechanisms to convey emotions. Building Talkie to show emotions allows it to sympathize with the child, which allows the child to establish a relationship with Talkie. And with emotions, it gives Talkie a personality. Talkie having a personality makes it stand out from being a regular toy, it makes Talkie more meaningful.

A Cybernetic Machine

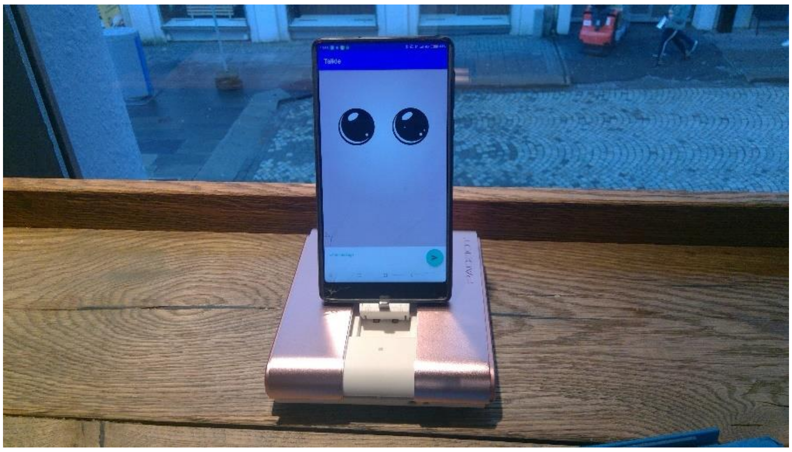

Figure 5: A high-fidelity prototype of Talkie

To make Talkie a sociable robot with proximate interaction, we will define it as a cybernetic machine. Cybernetic machines are autonomous in that they achieve their goals independently of humans. (Brooks, 2002). Humans are not required to control the actions of the robot, and there are different components that are necessary for a robot to have to make it an autonomous social cybernetic machine. For a machine to be autonomously means that it requires connecting perception to action and respond appropriately. Perception relates to sensors. Actions relates to actuators. Responding is based on feedback loops.

Sensors

"Life-imitating automata must rapport with the outer world by sense organs, such as photoelectric cells and thermometers, and must be able to record the performance or non-performance of their own tasks" (Wiener, 1988).

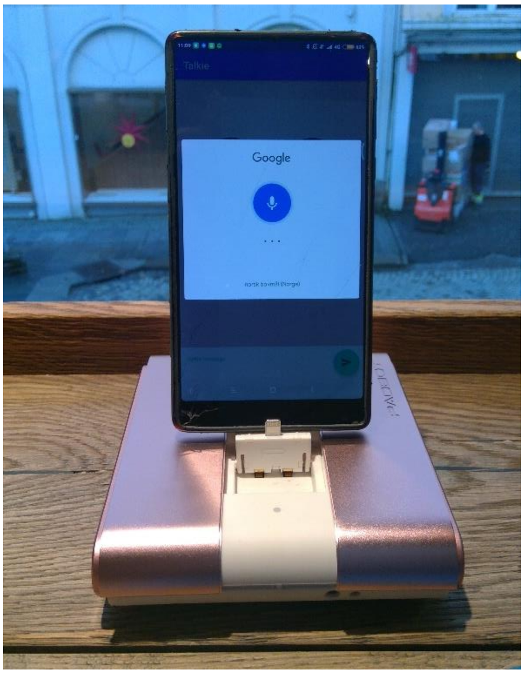

Figure 6: Talkie listening for voice input

To make Talkie social, it must be able to have an interactive conversation and respond appropriately. The first part of conversation is listening. Talkie listening to a child would be the same as using VUI as input. This is achieved by using a microphone as an input device. This also acts like the "ears" of the robot. To give input to Talkie, simply tap on its face to talk. The audio is converted to text which allows Talkie to process the input.

Actuators

"Life-imitating automata are machines to perform some definite task or tasks, and therefore must possess effector organs (analogous to arms and legs in human beings) with which such tasks can be performed." (Wiener, 1988).

Talkie has multiple actuators. The first actuator is the speaker, which is connected to speaking or responding, the second part of a conversation. With VUI, Talkie can respond to the child whether it is a question or an answer. The speakers act as the "mouth" of Talkie. Currently, the voice of Talkie is the same as the Google Translator. The goal is to allow Talkie to have a synthetic speech similar to a young child.

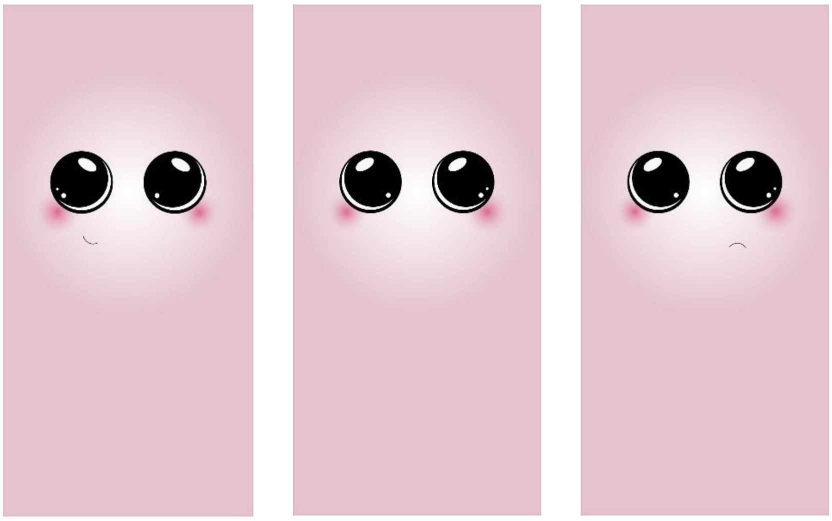

Figure 7: Talkie's three facial expressions: happy, neutral, and sad

The second actuator is the screen, the "face" of Talkie. Talkie can show different facial expressions and the expression are responsive, that is, Talkie change expressions depending on the context of the conversation. Talkie begins with a neutral expression. If the child is sad, Talkie will show a sad face, and if the child is happy, a happy face will be shown.

Figure 8: Side-view of Talkie's motoric system

The third actuator is the wheels, the "legs" of Talkie. As emotions, the movement of Talkie is situational. Talkie can move around to play with the child, for example, hide-and-seek. The movement is also connected to emotions. If Talkie is sad, it will do a subtle turn from left to right, but if happy, Talkie will do a quick spin instead.

Feedback loops

"Life-imitating automata must be able to adjust future conduct according to past performance." (Wiener, 1988, p. 33.)

After getting the input from the sensor, Talkie must be able to process it to allow the actuators give meaningful output. This is achieved by implementing Artificial Intelligence. Having AI allows Talkie to respond in real-time with unique responses for every question and answer that is given to it.

Artificial Intelligence

Intelligence is information processing. The brain and the computer share the quality of being an information processing system (Brey, 2001). Artificial learning consists of adjusting the weights of the algorithm applying rules for how to update them.

Implementing Artificial Intelligence allows us to have unique responses for every conversation Talkie has. There exists chatbots that only looks at keywords of the users input in a conversation and responds according to what it is implemented to say based on the keywords. With AI, we can make the Talkie learn the context by looking at patterns in the conversation and allow it to respond with different messages without hard-coding responses.

To make Talkie learn and understand, some components are required in the AI. The first component is Natural Language Understanding. NLU is an open-source natural processing tool for intent classification and entity extraction. We can think of NLU as the "ears" of the AI that enables it to understand what is being said. NLU takes unstructured human language, like a conversation, and extracts structured data in the forms of intent and entities. Intent can be understood as labels that are attached to each user input based on the overall goal of the user's message. For example, if we input "hello", then the intent would be "greet" because of the overall meaning of this message is a greeting. Entities are pieces of information that the AI may need in a certain context. For example, if we input "my name is Lars", the AI will see that the input has an entity "name" and it should remember the name throughout the conversation to keep interaction natural (Rasa Playground, 2020).

The second component is the core of the AI, the framework for machine learning-based, contextual decision making. The core makes prediction on how it should respond based on the state of the conversation as well as the context. The core learns the pattern from conversation.

The way we have trained Talkie is that we have written scripts, which is also conversations, and make it learn the patterns in the scripts. Talkie finds words that it can identify as intent and entities. After identifying these parts, it predicts the response. For example, if we input “Hello! My name is Lars”, the intent of this sentence is “greet” because of “Hello” and the entity is “Lars” because of name. Talkie can then predict the response. Since the intent is “greet”, the response could be “Hello Lars! How are you doing?”.

Talkie being adapted in the society with Social Constructivism

The design created under HRI is the first iteration of Talkie. It is a high-fidelity prototype that can be ran and tested, but it is created only by the requirements made internally by our group. The next iteration of Talkie would be to acquire requirements from relevant stakeholders and interested parties. As mentioned, Talkie is created to conversate with children, but for whom could Talkie be interesting for. In the beginning, we mentioned social groups like journalism, psychologists, and the judiciary as potential users of Talkie. They can use Talkie to achieve valuable information from children that adults otherwise would not be able to. These groups are widely different from each other with different goals they want to achieve, which leads to different requirements and ideas of Talkie. We will use Social Constructivism to analyze the problems within these social groups and potential designs of Talkie.

Social constructivism describes the influence of social groups, problems, and conflicts in the development of technologies – in any time period. It states that people work together to construct artifacts and focuses on an individual’s learning that takes place because of his or her interactions in a group. Social constructivism tries to clarify how social entities like social groups and institutions are constructed (Social Constructivism, n.d).

SCOT – Social Construction of Technology

One can think the more power a person or a group has, whether it is economic or social status, the more impact they have on a technological artifact. Trevor J. Pinch and Wiebe Bijker, leading adherents of SCOT, argues that the capacity of human beings to define and change the technology around them is not limited to just a handful of powerful groups like CEOs, industrialists, or even engineers. According to Pinch and Bijker (1987), all technologies that were created and chosen by us to use was because of social circumstances. They also provide a theoretical framework for explaining technological development as a social process called SCOT.

SCOT is an attempt by sociologists to understand the way a technological artifact develops. It focuses on the meaning given to it by relevant social groups. Social constructivists argue that social groups determine nearly every aspect of technology. It is people, not machines, that design, build, and give meaning to technologies and ultimately decide which ones to adopt and which ones to reject.

SCOT is not only a theory, but also a methodology: it formalizes the steps and principles to follow when one wants to analyze the causes of technological failures or successes. It is an adaptation of the Empirical Programme of Relativism (EPOR), which outlines a method of analysis to demonstrate the ways in which scientific findings are socially constructed.

The artifact and the interpretative flexibility of it

There exist multiple directions of designing an artifact. Artifact is a term used in the social sciences for anything created by humans which gives information about the culture of its creator and users (Cultural artifact, 2020). Multiple versions of the artifact were inspected when envisioning how Talkie should look and behave like. The current version of our artifact is the first design, and we designed Talkie to have fundamentals of an autonomous social robot, that is, to able to respond, listen, move around, and show emotions. Even though we have designed Talkie the way it is right now it might not be the best solution, especially when different social groups have their own interpretation of Talkie, which leads to interpretative flexibility.

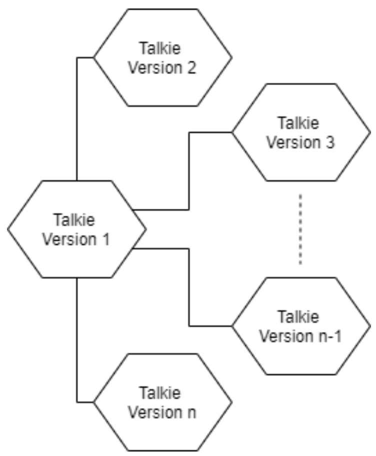

Figure 9: Interpretative flexibility of Talkie

Interpretative flexibility is a central concept of social constructivism, the first stage SCOT. Interpretative flexibility means that each technological artifact has different meanings and interpretations for various social groups. There is not just one possible way or one best way of designing an artifact (Pinch and Wiebe, 1987).

Relevant social groups of the artifact

The most basic relevant groups are the *users* and the *producers* of the technological artifact. The social groups play a critical role in defining and solving the problems that arise during the development of an artifact (Pinch and Wiebe, 1987).

We mentioned journalism, psychologists, and the judiciary as potential social groups. These groups were identified because of the goal of Talkie; being a child interview robot.

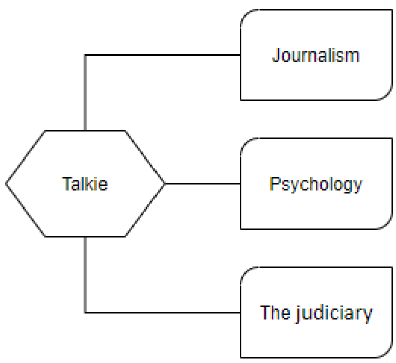

Figure 10: Social groups of artifact Talkie

Since interviews are particularly useful for getting the story behind a participant's experiences, journalists could use Talkie to interview children to pursue in-depth information around a topic, which they could use for writing news, stories, and documentaries.

Psychologists could use Talkie to help children and promote social, emotional, and cognitive development. With short daily interactions, children can improve their social and communication skills. The psychologists could analyze the data gained from Talkie to adapt or change the interaction to fit better the skills of the child. Like Kaspar designed to support children with autism in schools and homes to develop their interaction skills, Talkie could serve a similar purpose.

Another purpose for psychologists to use Talkie is for emotional support. Children might experience difficulties at home or school. Some companies have developed robots for this purpose, and of them are Expper Technologies. In 2018, they conducted a nine-week study at the Wigmore Clinic in Yerevan, Armenia, where the study demonstrated that the robot and its ability to provide mental-health care resulted in an increase of 26% more joy, and a 34% reduction of stress (Mendoza, 2020).

When it comes to sensitive topics regarding lawsuits such as physical and emotional abuse, children can be difficult to interview. They might feel scared or guilty when talking to a lawyer. That is why lawyers could use Talkie. Talkie has a friendly face and voice that allows children to establish trust and share sensitive information. This of course is an ethical dilemma itself. How do children know that the information they share is going to be exploited? If they somehow found out, would they be able to trust Talkie again? Regardless of trust, lawyers could use Talkie to gain valuable information to help victims and solve cases.

Problems regarding the artifact

It is likely that different groups have different interpretations for a given artifact. The interpretations often lead to conflicts between the criteria that are hard to resolve technologically. Because of the difference in interpretation from each group, they are likely to have problems with the respect to the artifact in question. For each problem, there can exist multiple solutions, and there can be conflict between them (Pinch and Wiebe, 1987).

Since the social groups have different interpretations, they demand different things from Talkie. How it is going to behave, speak, and act may be different between the groups. This falls back to the design of the artifact. Even though the same robot could be used for all the social groups and their problems, a more customized robot for each group would be more ideal to better fit their problems. For example, a psychologist would rather focus on developing the child's social and interaction skills than asking the child about their experience about abuse and other crimes. Having Talkie play games could also be beneficial for psychologists to help children to build a relationship with Talkie as a companion and develop social interaction. Different technical components could also be required by the social groups. For lawyers they could find it beneficial if Talkie could monitor a child in ways an interviewer cannot, using sensors to record body movement to help see if they are upset or uncomfortable. Journalists could find it useful if Talkie could show images and videos to keep the children engaged in the interview.

What is common for all the social groups is that they do not want false information from the children. In an article written by Samantha Michaels for MotherJones (2020), children are easily influenced by an interviewer's word choice, tone, and body language – all of which can lead them to provide false or biased information. Children are more talkative to familiar characters they have seen on television or played with. If we give Talkie a face that is familiar to the child in focus, the child is likely to be more open to converse because of familiarity. What kind of face Talkie should have might differ from the social groups and how they envision how Talkie would look like. Having the "correct" face would enable Talkie to get most out of the conversation with the child, which is a problem for the current design of the artifact.

Closure

Over time, as technologies are developed, the interpretative and design flexibility collapse through closure mechanisms. This is also the second stage of SCOT that introduces two closure mechanisms:

Rhetorical closure

When social groups interpret their problems as solved, the controversy ends and the need for alternative design diminishes. This often leads to *advertising*. In technology, advertising can play an important role in shaping the meaning that a social group gives to an artifact.

Children's experiences and stories are often vital evidence in cases of abuse. But even specially trained police interviewers can find it tough to stay neutral when talking to children. Police interviews follow guidelines which includes open-ended questions and maintaining neutral body-language, facial expressions, and vocal tone. But even with the guidelines, it can be difficult to keep a neutral voice and body-language. Interviewers can find it difficult to talk to children who have been abused, but robots do not. A study in 2011 conducted by Bethel, Stevenson, and Scassellati, found a positive correlation between having the children sharing the secret with an adult and the children to share the secret with a robot. This positive correlation indicated that whatever responses the children gave when prompted by the adult to share the secret they would as likely to respond in a similar manner to prompting by the robot and vice versa. What we can take from this study is that police interviewers can use Talkie or other similar robots to talk children if they find it hard to conduct the interviews. Robots will always follow the procedure, no matter the situation.

For journalists, interviewing children are very different from interviewing adults. They get affected by words the tone, type of questions, and even posture, all these can have negative impact on kids and influence the answer. Having a long interview session with a child can be tough on the child's attention, it is a good idea to offer the child a break. But breaking up the session and resuming might affect the child's engagement, they might not be interested which leads to poor results. What Talkie, as an interviewer and a toy, could offer is that it can play games with the child under the break while keeping the relationship and engagement with the interviewer.

Closure by Redefinition of the problem

This closure explains that even though something may be inconvenient, if it finds a solution to a problem, it is then accepted. Redefinition of a problem appears when we compare one problem with another.

Children are sensitive to the environment they are in. Whether they are at home with their parents and siblings or at school with friends and teachers, they all have an influence on the child. If children's emotions get overlooked, they might develop mental health issues (Firestone, 2012). It is important that the children get the emotional support they need. When all fail, child psychologists could help the child to identify the problems. Child psychologists could use Talkie as a therapist to interview the child about their situation if the child finds it difficult to open up to adults. A study in 2016 observed if children were more likely to report bullying to a robot. Some children reported about bullying to the robot, but this was only a small amount of the total number of participants in the study. What is interesting is that the participants were significantly more likely to report that fellow students were teased about their looks to the robot interviewer in comparison to the human interviewer (Bethel et al., 2016). What is interesting is that the children were able to report about bullying and tell more to the robot. Instead of Talkie being only a therapist, psychologists could use Talkie as a companion while keeping the aspect of being a therapist. It means that instead of having the child meet the psychologists to talk to Talkie, Talkie could then be with the child at home or school for emotional support.

Conclusion

Gaining inspirations by analyzing the historical social robots Kaspar, Cog, and Kismet, we created our own social robot, Talkie. Talkie's purpose is to be a child interview robot. Children can be difficult to talk to when it comes to sensitive topics such as bullying or abuse. We used the theory Human-Robot Interaction to create this high-fidelity prototype, and since Talkie should be able to conversate with children, it should have independent goals without having a human controlling Talkie. To achieve this, we created Talkie as a cybernetic machine. Building Talkie as a cybernetic machine helps us to identify the most important components to make an autonomous robot. Because of its sensors, actuators, and feedback loop, Talkie can behave as a child interview robot. But this is only one design. Talkie is meant to be used by different users in the society. Relevant users, also known as social groups, of Talkie might not find this current design as the best design. They might have their own idea of Talkie should look and behave, which leads to interpretative flexibility of the design. With interpretative flexibility, problems arise within the social groups. But these problems can be solved by closures, either rhetorical closure or closure by redefinition.

There exist many possibilities for what social robots can used for. Our desire, not only from Talkie but all similar social robots, is that they could be used in the society in the future to help and support children. We can document the children's stories and experiences, help them socially and emotionally, allow them to speak up regardless of topics without feeling intimidated.

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