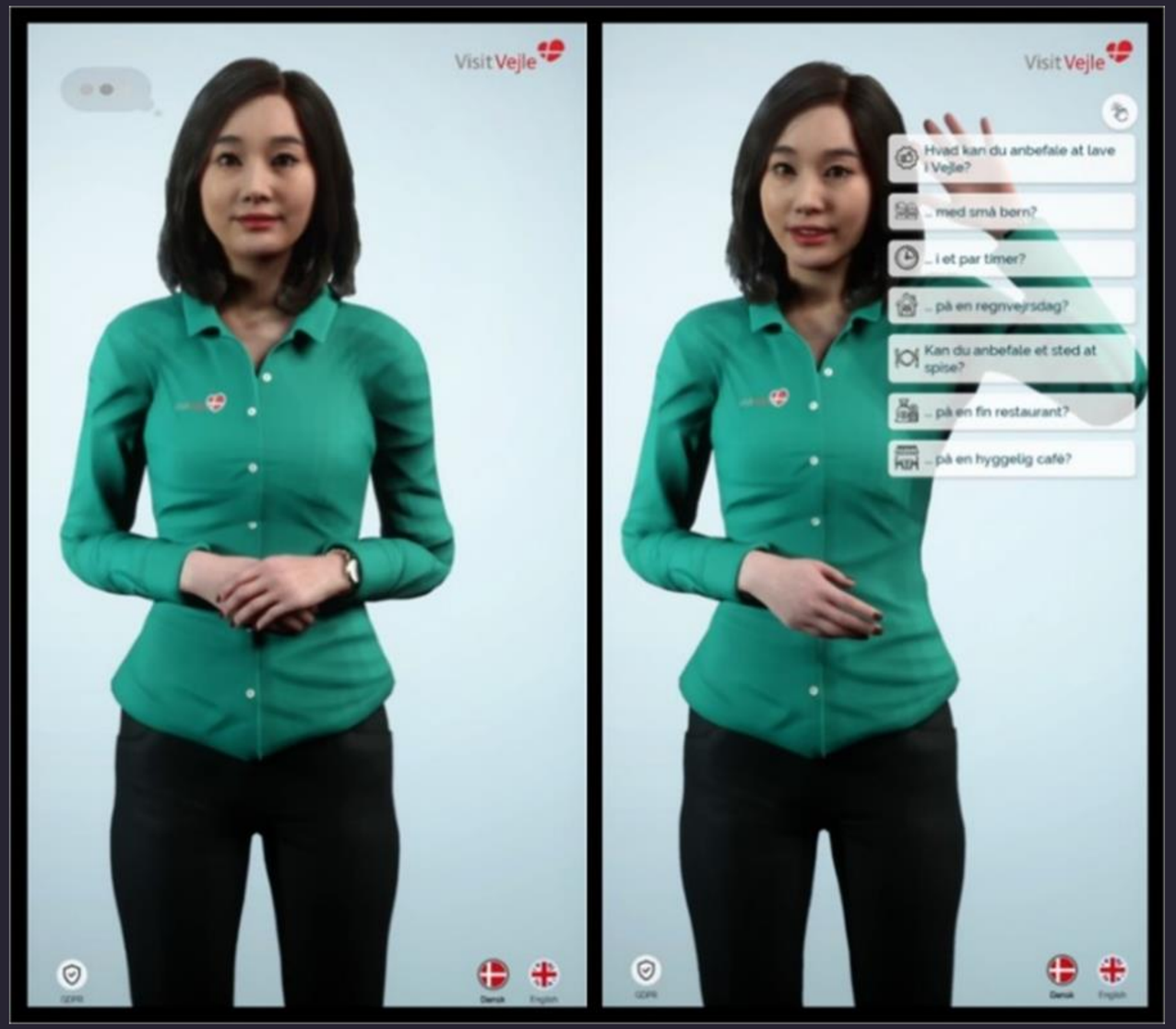
Exploring Perceptions & Reactions to Digital Humans

An empirical and phenomelogical study of Danish users' perception of and reaction to digital humans



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"IT HAS BEEN SAID, THAT AI CHATBOTS WILL NEVER REPLACE HUMAN WORKERS. NO MATTER HOW COMPLEX BOTS BECOME, HUMANS WILL ALWAYS BE BETTER AT UNDERSTANDING EMOTIONS. DESPITE THE POPULARITY THAT CHATBOTS HAVE, BOTS ARE NOT ABLE TO REPLICATE A HUMAN CONVERSATION IN A FULLY NATURAL WAY YET”

(Alaydi 2020)

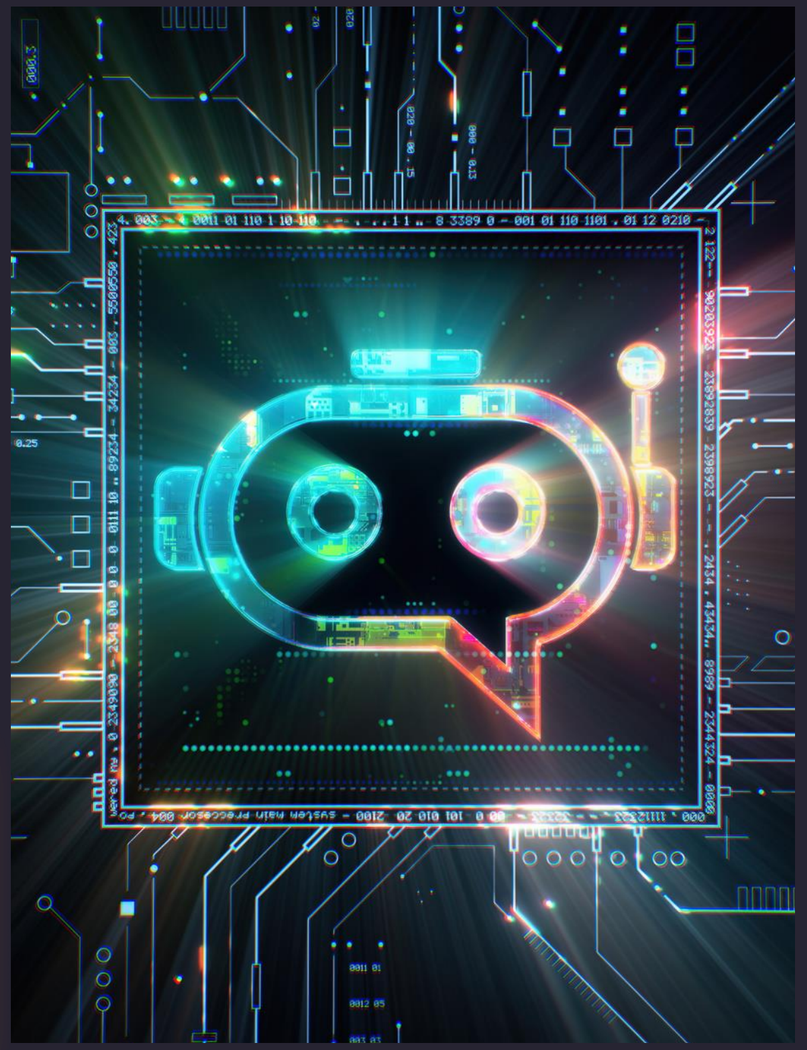
CGS (2019) conducted a survey of 1000 US respondents aged 18-65+

7% connected AI and chatbots with a bad customer experience. **Words like superficial, impersonal, and irrelevant as well as useless** were uttered by a total of 31%.

Respondents expressed that AI-based customer service, in the form of chatbots, was not as complete, helpful, knowledgeable, or empathetic as human customer service.

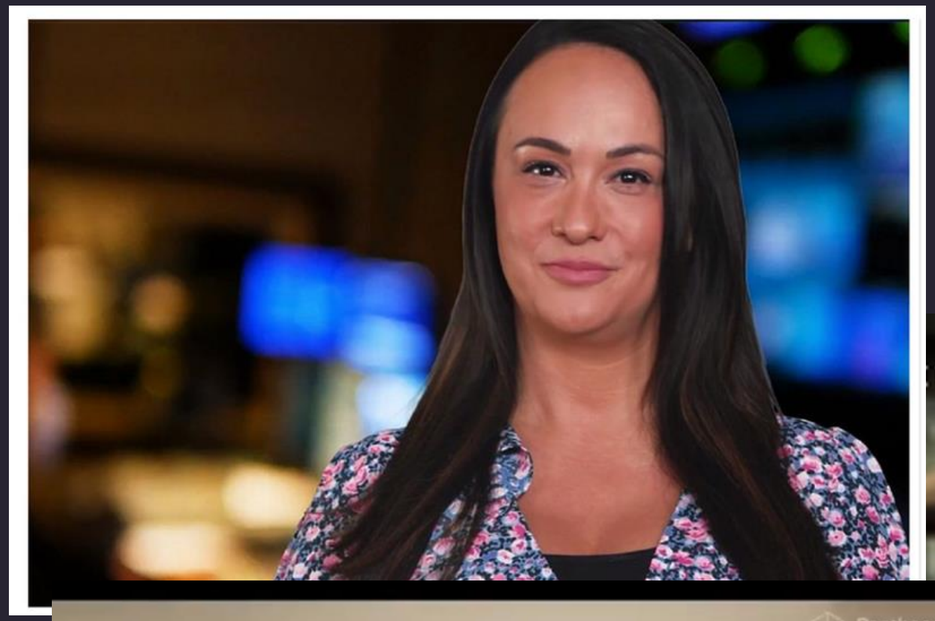
50% of the consumers surveyed stated that they believe that chatbots and virtual assistants make it harder for them to get their issues resolved. Only 4% preferred interacting with an (AI)-based system, whereas 86% preferred to interact with a human.

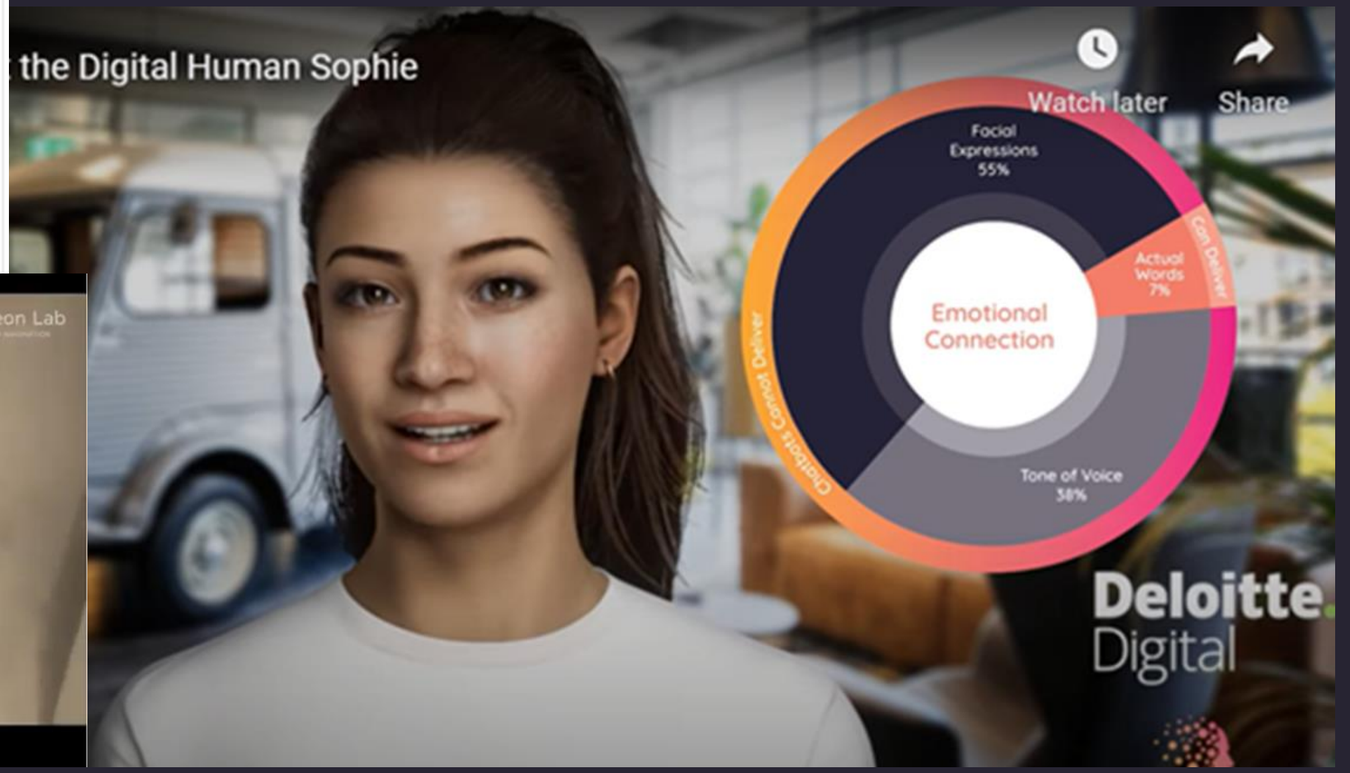
Respondents aged 34 or younger were most likely to say that chatbots and Virtual Assistants make it easier to get their issues resolved. Chatbots.org's 2018 survey supported, that Gen Z were the most likely to perceive Chatbots as effective)



Welcome to the ChatGPT era..

Meet Bridget, Sophie and ...





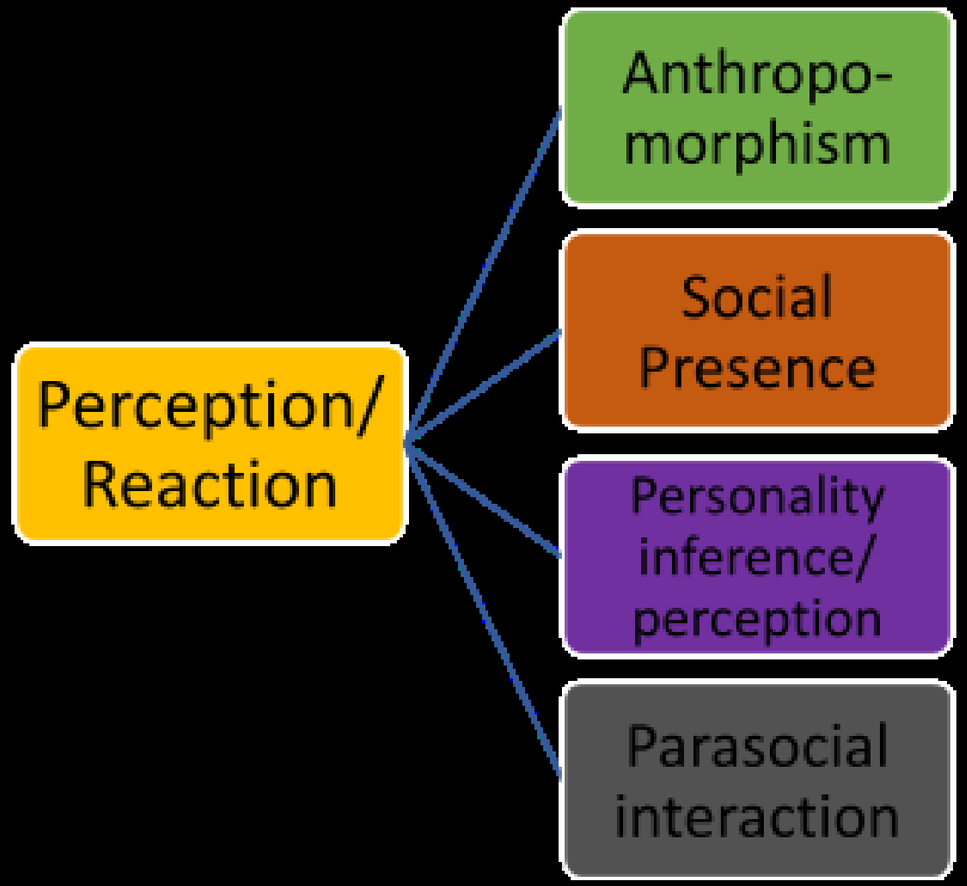
Only 7% of communication is based on text – 38% is based on voice interaction and 55% on facial expressions – Source: Deloitte Digital


But what happens in the interaction?
Check in here
krifa
NTT DATA
Aida is programed to do everything

Our purpose - an empirical study

How do digital humans with human-like resemblance (appearance and behavior) impact user perceptions and reactions?

Phenomenological study underpinned by four theories



- Anthropomorphism: Attribution of human traits, emotions, or intentions to non-human entities
- Social Presence: The perceived feeling of warmth, human contact, sociability, and sensitivity
- Personality Inference: A perception of someone's personality. Personality traits attributed to a digital human
- Parasocial Interaction: cognitive, emotional, and behavioral responses relating to parasocial responses towards digital humans

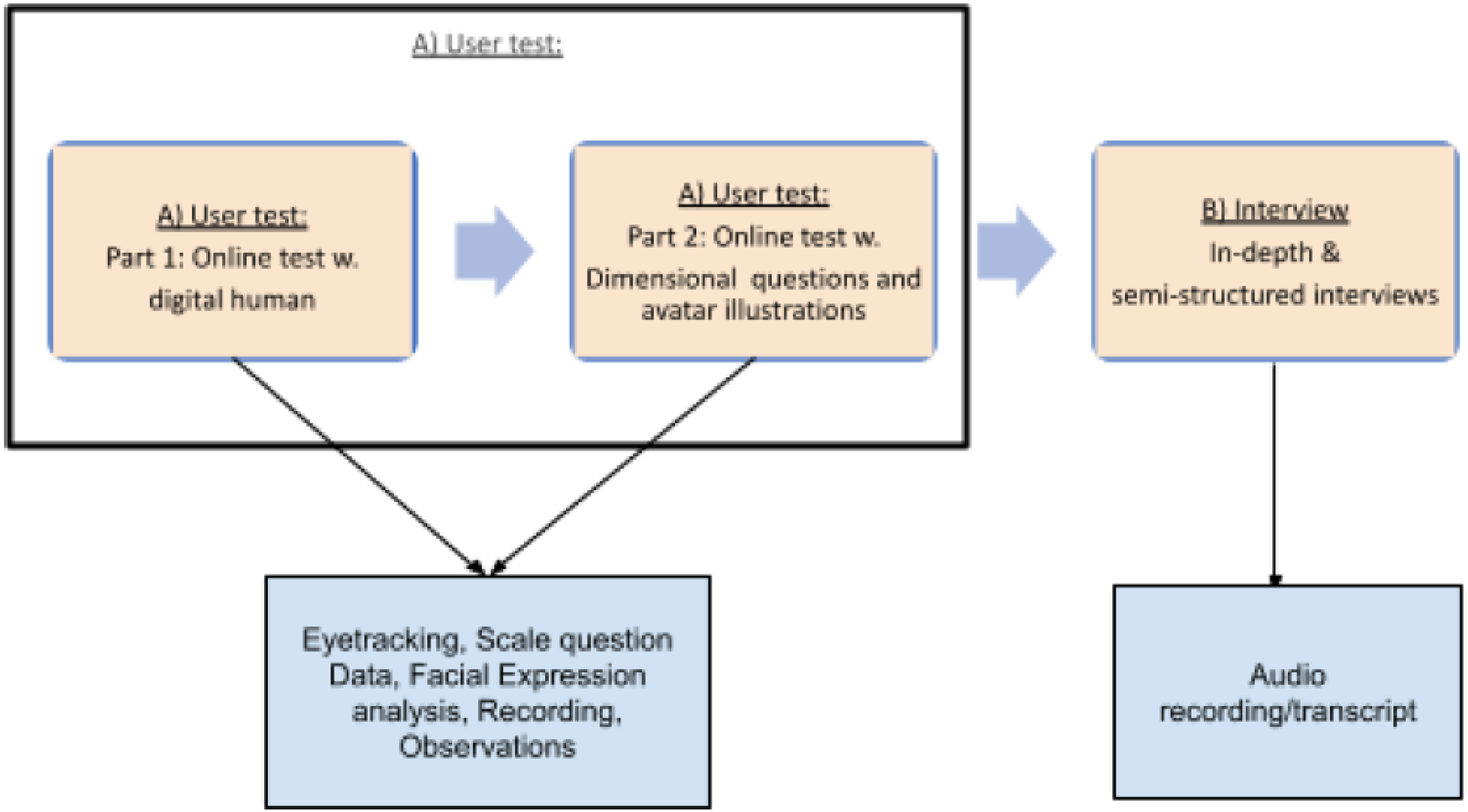
DIMENSIONS (DELIMITATION):

- Danish poulation - purposive sampling (Creswell 1998)
- 12 participants for phenomenological study (Creswell 1998)
- 2 dimensions: Age (Gen. Z versus Gen. Y) and gender

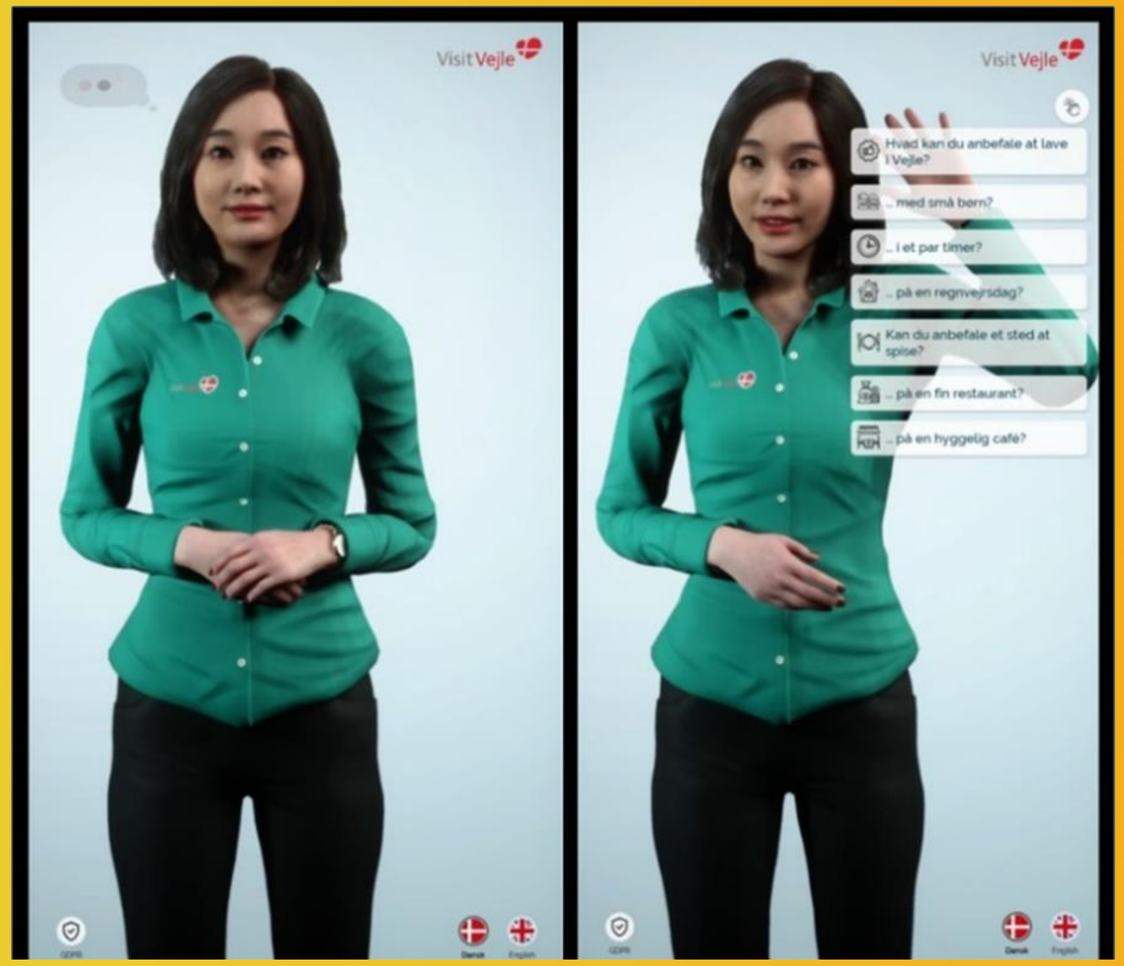
Generation Z (18-26 yrs.)	Generation Y (27-42 yrs.)
Participant 2 (P2)/Female/Student	Participant 1 (P1)/Female/Student
Participant 3 (P3)/Male/Student	Participant 5 (P5)/Female/Unemployed
Participant 4 (P4)/Female/Student	Participant 6 (P6)/Male/Employed
Participant 9 (P9)/Female/Employed	Participant 7 (P7)/Female/Student
Participant 11 (P11)/Female/Unemployed	Participant 8 (P8)/Male/Student
Participant 12 (P12)/Female/Unemployed	Participant 10 (P10)/Male/Student

Table 2: Illustration of testing population

STUDY DESIGN - EXPLORATORY - QUANTITATIVE AND QUALITATIVE DATA

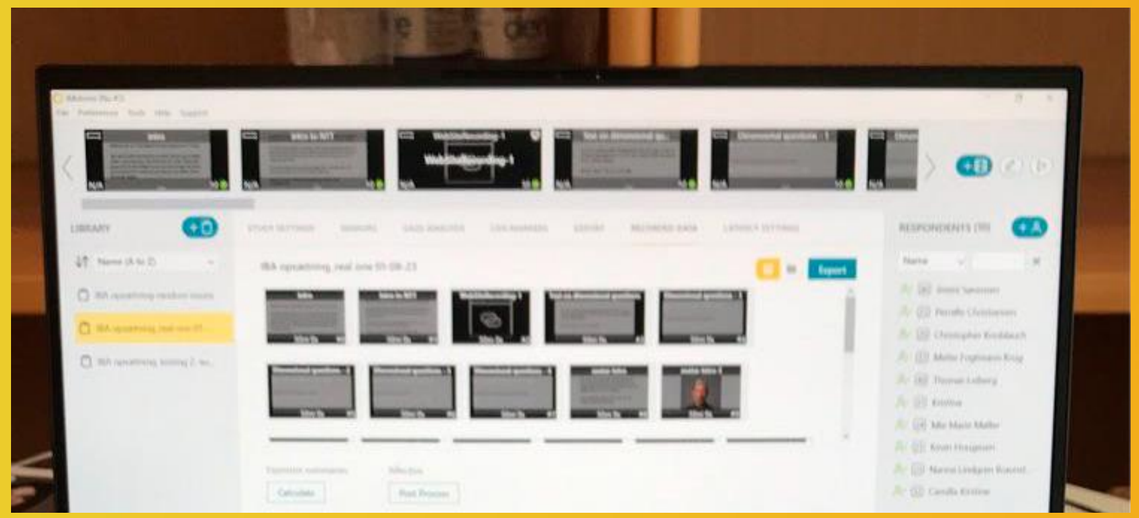


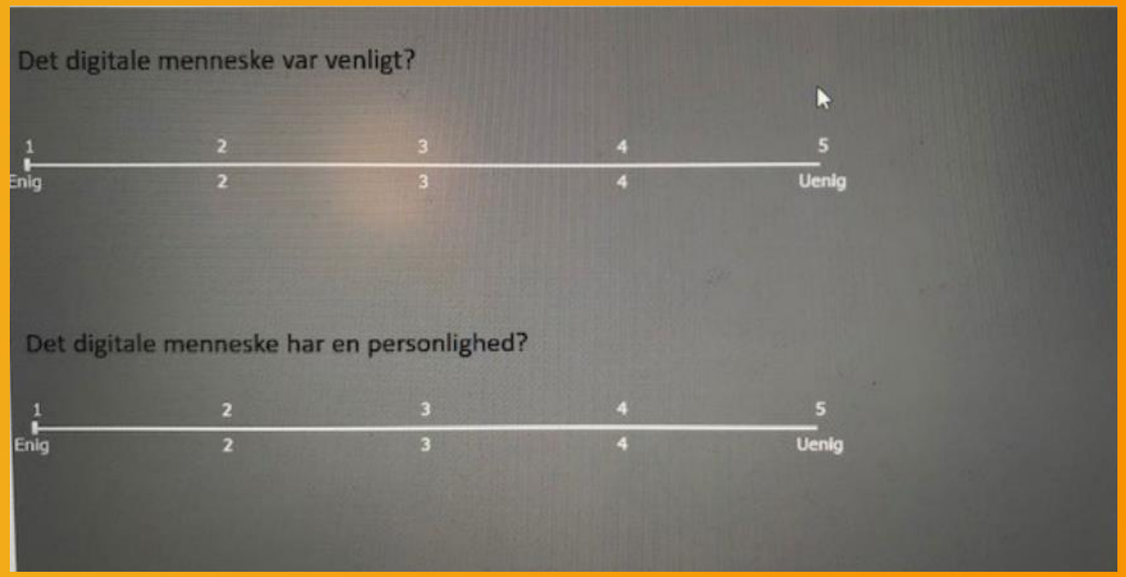
A) USER TEST - PART 1



5 minutes interaction with VisitVejle Touristguide (NTT DATA system). Non-scripted interaction - moderated, but freestyle. Interaction being recorded through Imotion software on the laptop. This gave us eyetracking (heat maps), facial analysis and recording data to use for the analysis. on top of the observations.

A) USER TEST - PART 2





Online test with Likert scale questions and avatar depictions. Both in relation to the usertest part 1 and in general in regards to avatar preferences to age/gender/professions. Recorded through Imotions and with eyetracking and facial analysis data as well as observations

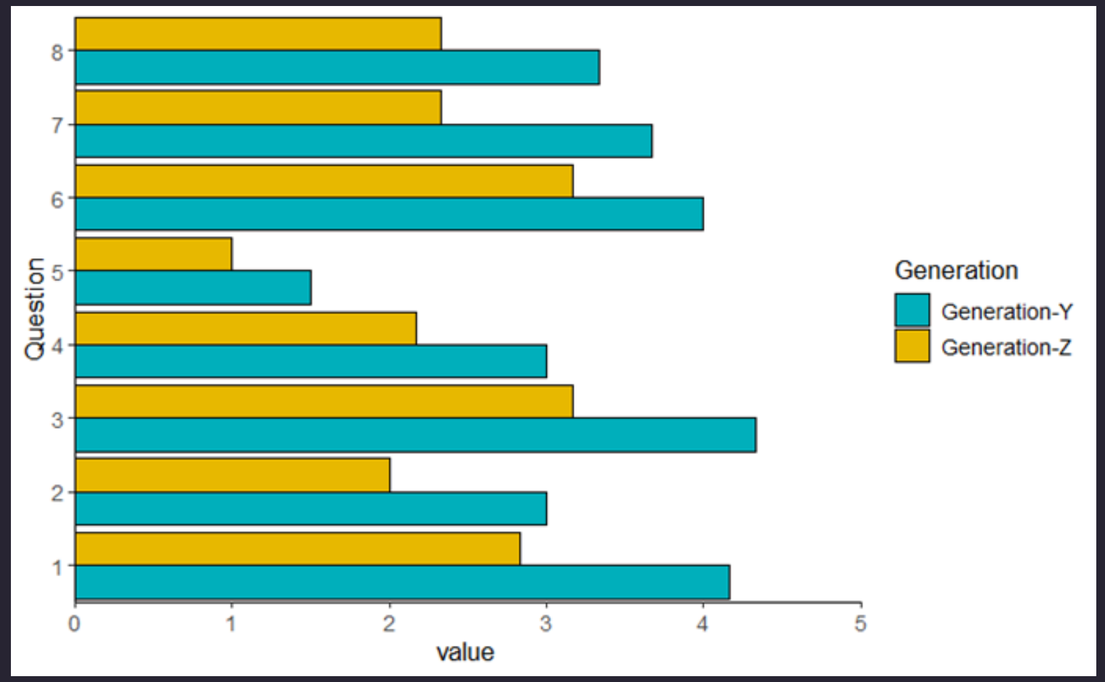
B) INTERVIEWS

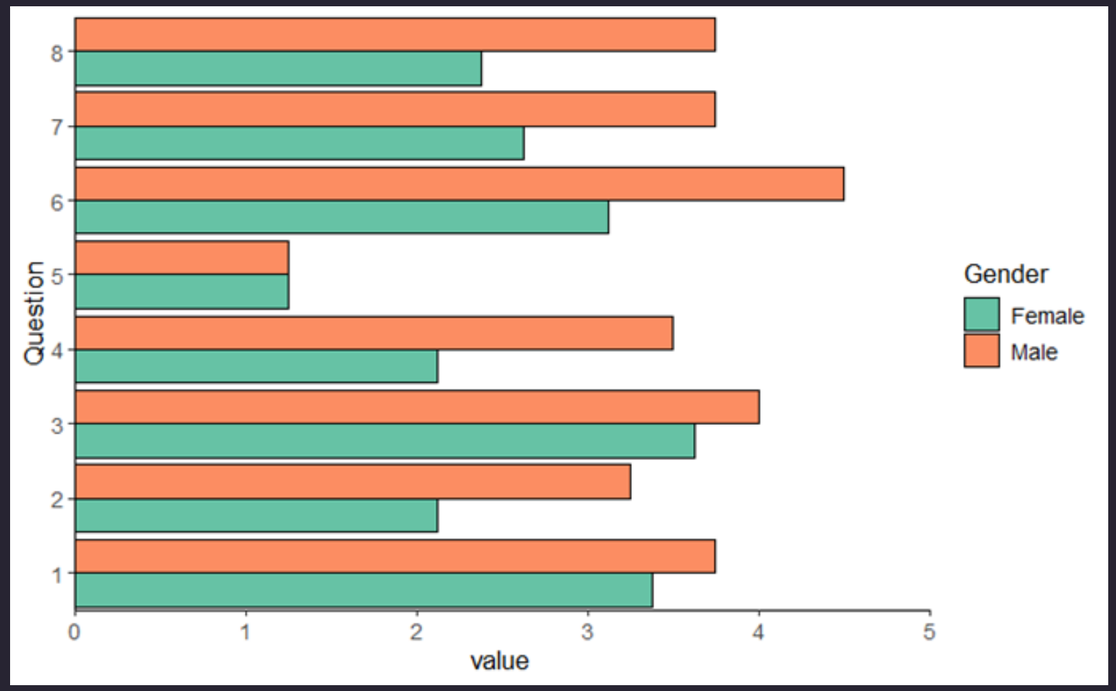
Semistructured - in depth interview based on the theoretical dimensions and tapping into the observations from the online test.

Dimension	Question #	Question
Anthropomorphism	Q1	Did the interaction feel human?
Anthropomorphism	Q2	The digital human felt like a good match for the scenario?
Social Presence	Q3	It seemed like a human social interaction?
Social Presence	Q4	Did you perceive the digital human as trustworthy?
Personality inference	Q5	The digital human was friendly?
Personality inference	Q6	The digital human had a personality?
Parasocial interaction	Q7	The meeting with the digital human felt like a social interaction?
Parasocial interaction	Q8	The body language of the digital human felt natural (humanlike)?

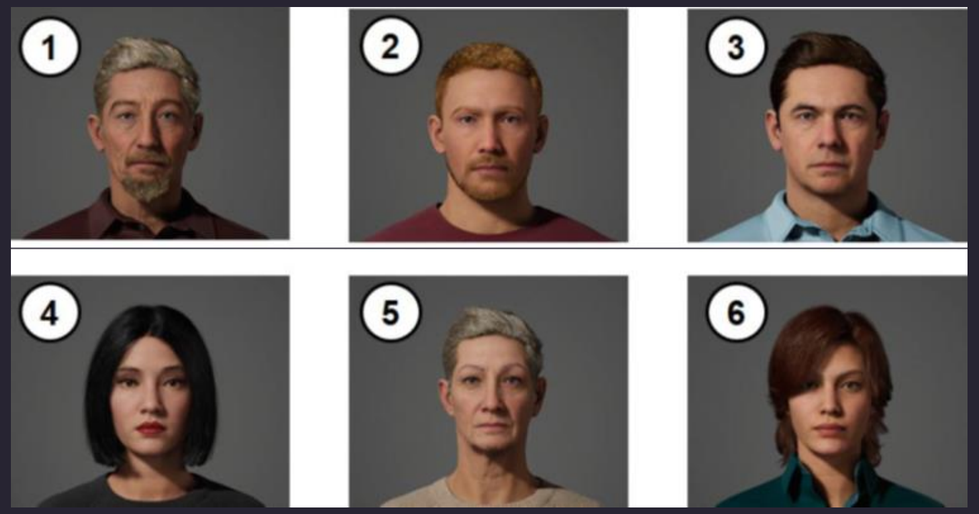
Results

Observation 1: demographic factors may play a part in affecting consumer perceptions and reactions to digital humans, with our older Generation-Y participants and male participants having more positive perceptions, and our younger Generation-Z participants and female participants being the least positive

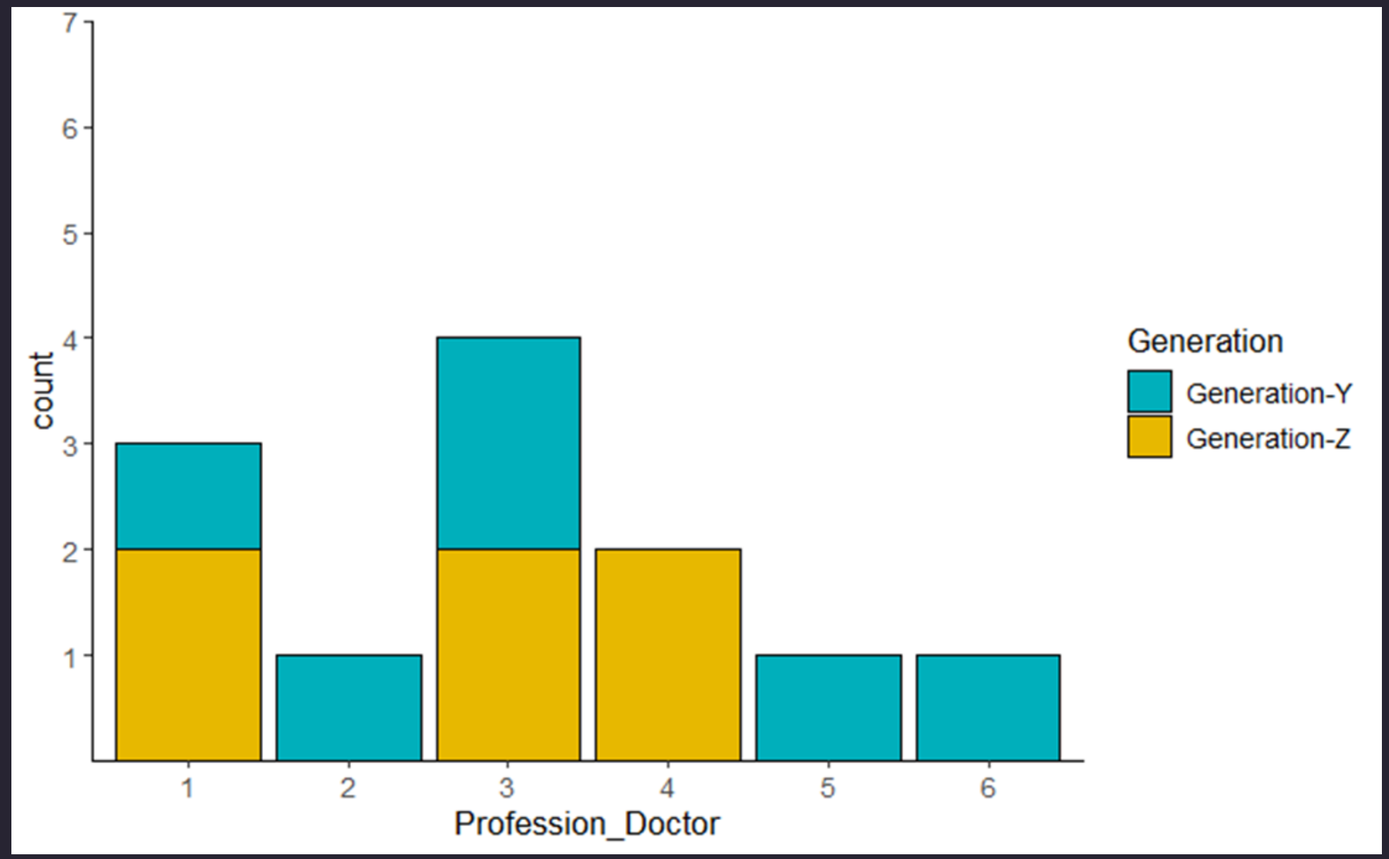




Observation 2 (Gen.): exploration of digital humans within different professions highlights the potential for prevailing stereotypes, of features such as gender and age, to impact perceptions and reactions



Choice of doctor based on generation



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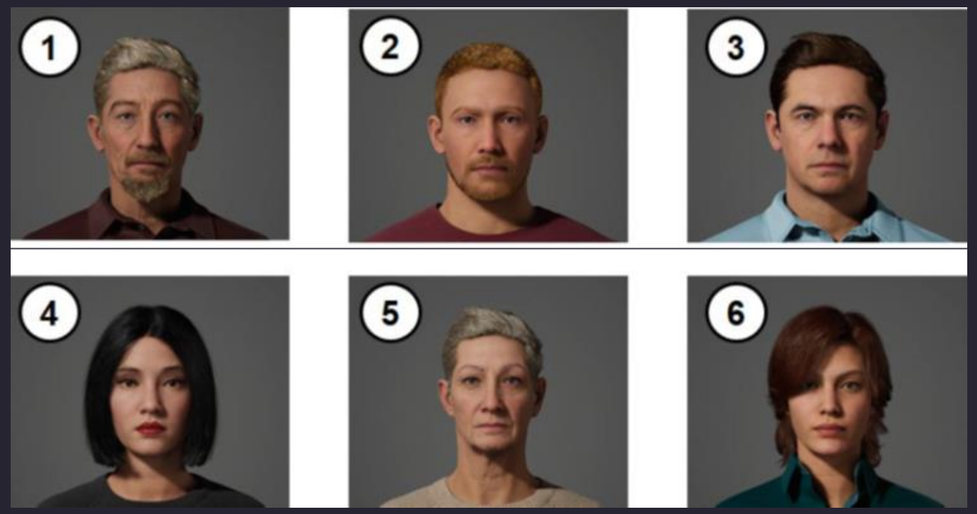
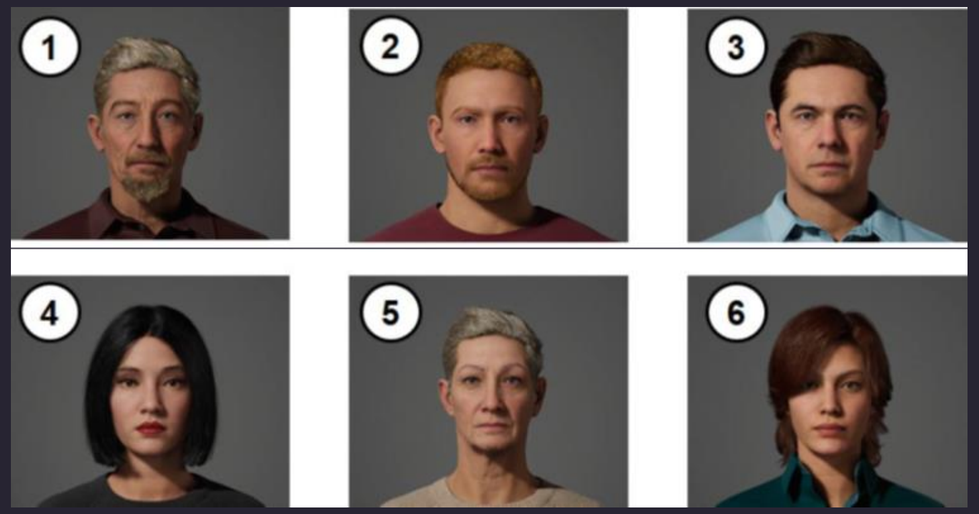
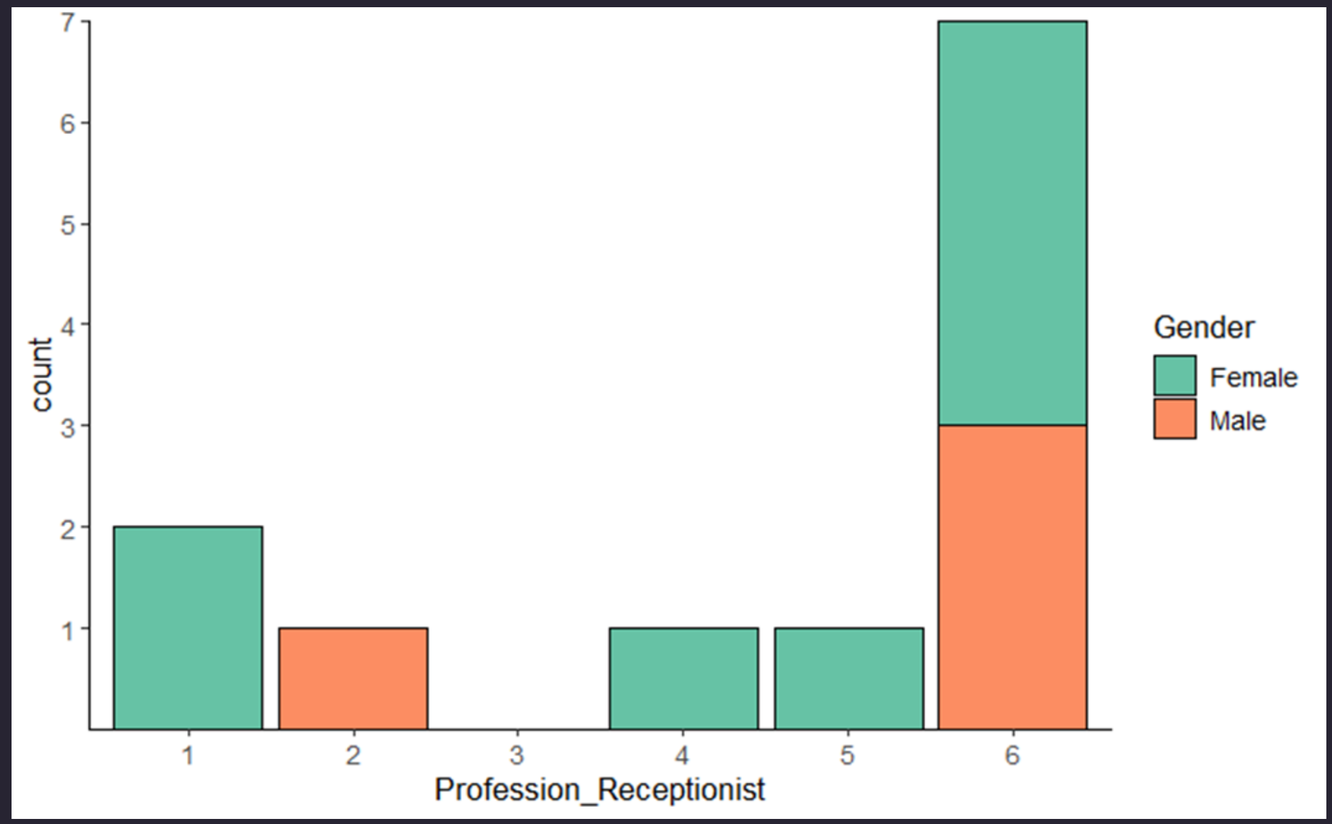


Choice of doctor for Gen. Y

Observation 2 (Gender): exploration of digital humans within different professions highlights the potential for prevailing stereotypes, of features such as gender and age, to impact perceptions and reactions



Choice of receptionist based on gender



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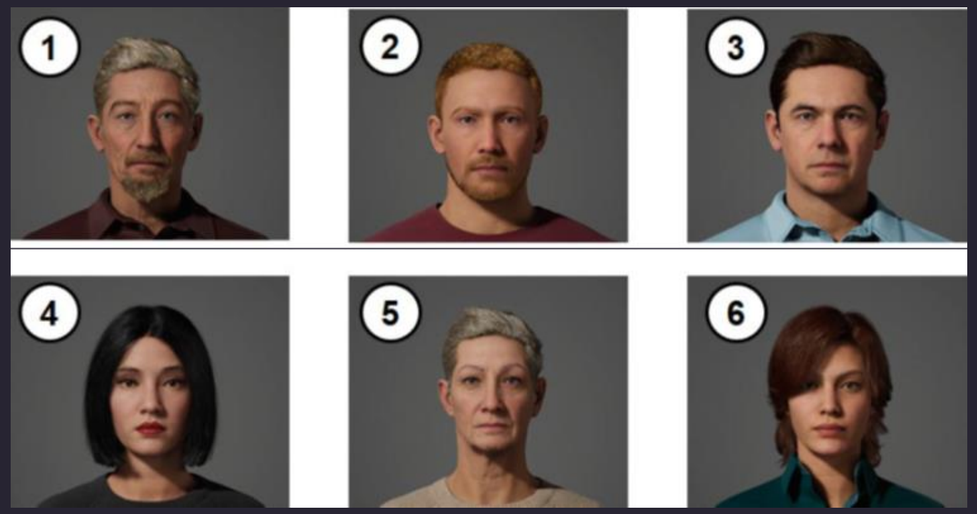

Choice of receptionist for gender – stereotypes for females

Observation 3 (Biases/beliefs): Although we observed underlying biases towards prevailing stereotypes, we also observed some very participant unique perspectives that influenced their thinking and choices. For example, responses such as that one of the avatars reminded them of his/her mother, which then impacted the reaction and choice considerations. Some particpants created narratives about the digital human and all 4 theoretical dimensions were encountered during the tests and interviews.

Implications and discussion

and perhaps further studies.....

Implications regarding looking to foresee and predict preferences users might have for different types of avatars in certain scenarios and situations

Designing to lean into stereotypes and biases. To seek to provide a user with an interaction they would expect

Alternatively, designing to try to actively push against such stereotypes and biases
To try to counter them instead of perpetuating them - try to explicitly break down and diminish such biases and stereotypes

Next level of ultra personalisation – knowing user info, such as what family members look like. Cultural implications

Questions?

Feel free to e-mail us to receive a copy of the presentation “Exploring Perceptions & Reactions to Digital Humans”. E-mail: adla@iba.dk

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