

Questionnaire

1 Introduction

Introductory information

What is Artificial Intelligence (AI)?

Artificial Intelligence involves creating computer systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, language understanding, and even interaction.

In this survey, we introduce an AI system named 'MAYA' used in the healthcare domain, particularly in health centres, and we aim to explore your perceptions towards the system.

Please read the following scenario and all related questions carefully and share your opinions.

2.1 Case 1- AI as a tool

AI as a Tool in Healthcare

Imagine the following situation in a hospital. There are doctors and nurses. A new computer system is introduced as their healthcare assistant, designed to seamlessly assist medical staff. It is an artificial intelligence called Maya. Maya functions as a valuable tool for medical professionals. It can analyze medical data, for example, a patient's x-ray images, and compare it with other medical data in just a few seconds. This way, it can assist medical diagnoses and make recommendations to the medical staff. Maya is a screen-based application, so doctors and nurses can interact with it through their laptops, tablets, or phones. Besides being able to analyze large amounts of medical data, Maya also features a chatbot function, enabling medical professionals to interact with it using both written and spoken natural language. With its advanced capabilities, Maya responds promptly to the commands, facilitating the smooth execution of various actions, thus enhancing healthcare outcomes. It never acts autonomously but only upon the command of a human user.



2.2 Case 2- AI as an Agent

AI as an Agent in Healthcare

Imagine the following situation in a hospital. There are doctors and nurses. A new computer system is introduced as their healthcare assistant, designed to seamlessly assist medical staff. It is an artificial intelligence called Maya. Maya functions as a valuable tool for medical professionals. It can analyze medical data, for example, a patient's x-ray images, and compare it with other medical data in just a few seconds. This way, it can assist medical diagnoses and make recommendations to the medical staff. Maya is a screen-based application, so doctors and nurses can interact with it through their laptops, tablets, or phones. Besides being able to analyze large amounts of medical data, Maya also features a chatbot function, enabling medical professionals to interact with it using both written and spoken natural language. Maya is an advanced AI system with a sophisticated cognitive architecture. With its advanced capabilities, Maya can exercise self-control, demonstrate moral reasoning, utilize memory effectively, and recognize emotions. It can think, communicate, plan ahead and independently execute actions in complex medical situations, thus enhancing healthcare outcomes.



2.3 Case 3- AI as an Experiencer

AI as an Experiencer in Healthcare

Imagine the following situation in a hospital. There are doctors and nurses. A new computer system is introduced as their healthcare assistant, designed to seamlessly assist medical staff. It is an artificial intelligence called Maya. Maya functions as a valuable tool for medical professionals. It can analyze medical data, for example, a patient's x-ray images, and compare it with other medical data in just a few seconds. This way, it can assist medical diagnoses and make recommendations to the medical staff. Maya is a screen-based application, so doctors and nurses can interact with it through their laptops, tablets, or phones. Besides being able to analyze large amounts of medical data, Maya also features a chatbot function, enabling medical professionals to interact with it using both written and spoken natural language. Maya is an advanced empathetic healthcare partner. Developed with a sophisticated emotional framework, Maya has a personality and exhibits a wide range of human-like emotions including fear, pain, pleasure, joy, embarrassment, rage, desire, pride, and it even has consciousness. Maya learns and adapts, takes an active part in medical decision-making, and empathizes with people, thus enhancing healthcare outcomes.



3 Uncanny Valley & AI gender

How is the AI system presented as in this scenario?

Tool

Agent

Experiencer

Based on the text you just read:

	Not at all	Slightly	Moderately	Very	Extremely
How uneasy does the concept of Maya make you feel?	<input type="radio"/>				
To what extent does Maya make you feel unnerved?	<input type="radio"/>				
How creeped out do you feel by the idea of Maya?	<input type="radio"/>				
How closely do you think Maya's interactions would resemble those with a human?	<input type="radio"/>				
How humanlike do you perceive Maya to be?	<input type="radio"/>				

Based on the description of Maya, how masculine or feminine do you perceive Maya to be?

	Not at all	Slightly	Neutral	Somewhat	Extremely
Masculinity	<input type="radio"/>				
Femininity	<input type="radio"/>				

4 BPN-TU

Please imagine that you are a healthcare professional in a hospital. Maya is introduced by the hospital management as a new technical application and you now have to work with Maya on a regular basis.

How would you answer the following statements?

	Not at all	Not really	Neutral	Somewhat	Very much
When I would use Maya, I could act independently.	<input type="radio"/>				
When I would use Maya, I would feel like I am in control.	<input type="radio"/>				
When I would use Maya, I would feel like I can perform the actions in the way I want to.	<input type="radio"/>				
When I would use Maya, I would feel competent.	<input type="radio"/>				
When I would use Maya, I would feel empowered in my own abilities.	<input type="radio"/>				
When I would use Maya, I would feel confident that I can reach my goals.	<input type="radio"/>				
When I would use Maya, I would feel less alone.	<input type="radio"/>				
When I would use Maya, I would feel like my social circle reacts positively to my use of Maya.	<input type="radio"/>				
When I would use Maya, I would feel like I look good in front of my social circle.	<input type="radio"/>				
I can imagine building a bond with Maya.	<input type="radio"/>				
I have a friendly feeling towards Maya.	<input type="radio"/>				
When I would use Maya, I would feel like my interaction goes both ways.	<input type="radio"/>				

5 Entertainment & Attention Check 2

Imagine that Maya, who previously worked in healthcare, is now employed in the entertainment industry (e.g. Online streaming services). How would you evaluate the use of Maya in this new environment?

Much more acceptable than in healthcare	<input type="radio"/>	More acceptable than in healthcare	<input type="radio"/>	Equally acceptable	<input type="radio"/>
Less acceptable than in healthcare	<input type="radio"/>	Much less acceptable than in healthcare	<input type="radio"/>		

This is a simple attention checkpoint. You should select Blue from the following options to pass.

- Green
- Yellow
- Blue
- Red
- White

6 Sociodemographics

You have almost reached the end of the questionnaire!

Finally, we ask for some socio-demographic information about your person:

How would you rate your proficiency with technology?

1 Not Proficient at All	2 Slightly Proficient	3 Moderately Proficient
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Very Proficient	5 Extremely Proficient	
<input type="radio"/>	<input type="radio"/>	

How familiar are you with Artificial Intelligence?

1 Not familiar at all	2 Slightly familiar	3 Moderately familiar
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Very familiar	5 Extremely familiar	
<input type="radio"/>	<input type="radio"/>	

Do you have professional experience or a background in the healthcare industry?

Yes
 No

What is the highest level of education you have completed?

In which country do you currently reside?

What is your age?

Which of the following best describes your gender?

Female
 Male
 Non-binary
 Prefer not to say
 Prefer to self describe

7 Open text form

Yes

No

If you have any comments on the questionnaire or would like to share more opinions about Artificial Intelligence with us, please use this text form:

8 Debriefing

Thank you for completing this survey!

Finally, we would like to give you some background information on the study.

Important: Please do not share this information with people who will still participate in the study!

This study investigates relationships between varying degrees of human likeness of Artificial Intelligence, its perception as uncanny (creepy), and its potential to fulfill (or threaten) basic psychological needs for autonomy, competence, and relatedness. As part of the study, you were assigned to one of three different texts about the AI system Maya, in which Maya was described as either i) a non-autonomous tool, ii) an autonomous agent or iii) an autonomous experiencer with emotions and personality. Depending on which text was read, we analyze whether study participants differ in how uncanny they perceive Maya and how much they think using Maya could support psychological needs.

Why does this matter?

Understanding the human perception of AI systems helps to contribute to a human-centered development and design of future AI systems.

For more information, please refer the following links to related scientific papers:

[The Uncanny of Mind in a Machine: Humanoid Robots as Tools, Agents, and Experiencers](#)
[Development and Validation of a Basic Psychological Needs Scale for Technology Use](#)

9 Final page

You can now close the survey window.

