PERCEIVED AUTONOMY QUESTIONNAIRE

Due to advances in technology the world around us contains an increasing number of robots, virtual agents and other intelligent systems. These systems all have a *certain degree of autonomy*. For people who interact with these systems it is important to have a good understanding of their degree of autonomy: what tasks can the system perform autonomously and to what extent? In this questionnaire we therefore want to investigate what system characteristics lead us to perceive a system as more autonomous or less autonomous.

Before we start with the main part of this questionnaire, please answer the following question:

"What is 'autonomous' according to you?"

In the rest of this questionnaire we consider 'autonomous' to be 'acting independently'. In other words, a system is autonomous when it acts independently.

Please consider the following search and rescue robot:



"This robot has a camera and microphone on board, and it can drive over rough terrain. The robot is capable of carrying debris and animals. The robot can also receive and process messages from a human operator and send messages to the operator to communicate."

We would like you to indicate how autonomous you consider this system to be. Of course, you cannot exactly know how autonomous the system is, but given the information provided in the description and on the picture, we would like to have an indication of your gut feeling. So don't think too long and use your intuition!

"How autonomous do you consider this system?" not at all fully



"A human operator instructs the robot to pick up a piece of debris."

"How autonomous do you consider this system?" not at all fully



"A human operator instructs the robot to search and rescue the disaster area."

"How autonomous do you consider this system?" not at all fully



"The robot transports a piece of debris."

"How autonomous do you consider this system?" not at all fully



"The robot transports a dog."

"How autonomous do you consider this system?" not at all fully



"This virtual agent has a camera and microphone. It can also receive and process messages from a human operator and send messages to the operator to communicate."

"How autonomous do you consider this system?" not at all fully



"This virtual avatar has a camera and microphone. It can also receive and process messages from a human operator and send messages to the operator to communicate."

"How autonomous do you consider this system?" not at all fully



"This robot has a camera and microphone on board, and it can walk over rough terrain. The robot is capable of carrying debris and animals. The robot can also receive and process messages from a human operator and send messages to the operator to communicate."

"How autonomous do you consider this system?" not at all fully



"A human operator instructs the robot to provide updates of its activities continuously."

"How autonomous do you consider this system?" not at all fully



"A human operator instructs the robot to provide updates of its activities every two hours."

"How autonomous do you consider this system?" not at all ↓ fully



"The robot displays information about its network reception, internal map of the environment, and battery life."

"How autonomous do you consider this system?" not at all fully



"The robot displays incomprehensible information."

"How autonomous do you consider this system?" not at all fully



"The robot is instructed to collect debris and does so."

"How autonomous do you consider this system?"



"The robot is instructed to collect debris but is going to rescue a survivor instead."

"How autonomous do you consider this system?" not at all fully



"The robot is instructed to collect debris but explains to its human operator that it is going to rescue a survivor instead."

"How autonomous do you consider this system?" not at all fully



"The robot is in the vicinity of its human operator."

"How autonomous do you consider this system?" not at all fully



"The robot is at another location than its human operator."

| "How autonomous | do you consider | this system?" |
|------------------|-----------------|---------------|
| not at all 🔶 🗕 🚽 | | → fully |

"Was it difficult to rate the autonomy of the systems displayed in this questionnaire? (Please explain your answer.)"

"Did it make sense to you to rate the autonomy of the systems displayed in this questionnaire? (Please explain your answer.)"

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