

The Role of AI Robot Characteristics on user Adoption and Experience

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DESCRIPTION

As Artificial Intelligence (AI) robots become more prevalent in various industries and daily life, their capabilities and forms continue to expand. In fields like retail and manufacturing, AI robots such as Pepper or Cobot have become a common sight. In such situations, AI robots can assist (and sometimes, replace) their human users with repetitive or physically demanding tasks that can potentially bring physical tiredness and the risk of musculoskeletal disorders among users. Because AI algorithms embedded enable robots to adapt and accommodate external environments, productivity can also be enhanced while ensuring the safety of human users. Similarly, in elderly or disabled care situations, AI robots can assist with tasks like getting in and out of bed, bathing, and dressing, thus enhancing their quality of life and reducing caregiver strain.

However, such benefits can manifest only when users readily adopt and utilize AI robots. Subsequently, it is imperative that the understanding of how users perceive AI robots and form predictions about the benefits they can attain precedes consideration of cognitive and behavioral influences on users. Depending on users' interpretation of AI robots, the way they use and sometimes interact with AI robots can vary, ultimately bringing different impacts on users. This understanding can inform the design of AI robots and user experience.

To users, AI robots belong to a new category of product about which their knowledge is still limited. Subsequently, users tend to rely on their existing knowledge and experiences, or "schema" to understand the potential benefits and experiences of using an AI robot. For example, AIBO, appeared in the market, users' expectation of their "AIBO experience" was based on their existing knowledge and the experience of what real-life pets usually

provide to their owners—emotional benefits of joy and comfort from having a companion.

When such perceptions are formed, characteristics of AI robots are used as the key information cues determining which schema is to be triggered. Particularly, the resemblance to a real-life object or entity and the task that an AI robot is intended to complete are two main sources of information that guide users' understanding of the AI robot. Specifically, users are likely to expect AI robots that resemble the typical appearance of machines to serve more functional benefits (e.g., doing repetitive tasks efficiently, doing risky tasks) while those looking similar to living creatures are expected to provide more emotional benefits in addition to functional benefits. This is because based on their existing schema for machines versus living creatures, users generally consider machines to serve more utilitarian and functional tasks based on the algorithm that they operate on. On the contrary, living creatures are more likely to be associated with variability and emotional interaction because they do not necessarily operate on an established algorithm. Subsequently, users form different expectations about an AI robot and the tasks it can fulfill depending on which type of schema the AI robot's appearance triggers. It is this expectation that determines whether or not users will adopt an AI robot.

CONCLUSION

Understanding users' perspectives on AI robots is crucial to gain insights into their adoption and how they are influenced by their interactions with the robot. In order to comprehend the possible advantages and experiences of utilizing an AI robot, users frequently rely on their preexisting knowledge and experiences. This knowledge can inform the design of AI robots and user experience to ensure maximum benefits for users.

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Received: 22-Dec-2023, Manuscript No. JER-24-27374; **Editor assigned:** 26-Dec-2023, PreQC No. JER-24-27374 (PQ); **Reviewed:** 09-Jan-2024, QC No. JER-24-27374; **Revised:** 16-Jan-2024, Manuscript No. JER-24-27374 (R); **Published:** 23-Jan-2024, DOI: 10.35248/2165-7556-24.14.386

Citation: Lee E (2024) The Role of AI Robot Characteristics on user Adoption and Experience. *J Ergonomics*. 14:386.

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