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Anthropomorphized artificial intelligence, attachment, and consumer behavior

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Abstract

The increasing humanization and emotional intelligence of AI applications have the potential to induce consumers' attachment to AI and to transform human-to-AI interactions into human-to-human-like interactions. In turn, consumer behavior as well as consumers' individual and social lives can be affected in various ways. Following this reasoning, I illustrate the implications and research opportunities related to consumers' (potential) attachment to humanized AI applications along the stages of the consumption process.

1 Introduction

Artificial intelligence (AI) is a transformational power (re-)shaping marketing research, strategy, and actions, and can be conceptualized as "the use of computational machinery to emulate capabilities inherent in humans, such as doing physical or mechanical tasks, thinking, and feeling" (Huang & Rust, 2021, p. 31). With the steady advancement of AI and its levels of intelligence, AI's emotional and social capabilities and competences and thus the degree of humanization are assumed to increase as well. AI applications including intelligent personal/digital assistants such as Siri or Alexa, chatbots, and service robots are already equipped with human morphology, names, and qualities such as human speech and interaction and emotional sensing capabilities (e.g., Huang & Rust, 2021; Ramadan et al., 2021; Wan & Chen, 2021).

Attributing humanlike properties and characteristics to nonhuman agents and objects is at the core of anthropomorphism (Epley et al., 2007). Anthropomorphism

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can in turn transform human-to-object interactions into human-to-human-like interactions and result in object attachment by fulfilling human needs related to comfort and pleasantness, self-identity, and self-efficacy (Wan & Chen, 2021). Such form of psychological and emotional bonding (i.e., attachment) can even take the form of companionship, (perceived) friendship, or love (e.g., Hernandez-Ortega & Ferreira, 2021; Ki et al., 2020; Ramadan et al., 2021). For instance, exploratory qualitative research revealed that people with special needs (i.e., physical disabilities) consider intelligent personal assistants (i.e., Alexa) as relied-on caregivers preserving their freedom and independence and eventually as friend or even as life companion (Ramadan et al., 2021). Moreover, positive (smart) experiences with intelligent personal assistants can lead to feelings of love, that is, felt intimacy, passion, and commitment (e.g., Hernandez-Ortega & Ferreira, 2021), while felt intimacy, enjoyability, and commitment can induce para-friendships (e.g., Ki et al., 2020). Thus, AI assistants seem to provide more than "just" utilitarian and functional benefits. Since AI assistants and devices (have) become increasingly pervasive in consumers' everyday lives, it is vital to understand how they shape consumers' personal and social lives—both positively and negatively.

In the following, I elaborate on the emerging research questions along the consumption process related to consumers' (potential) attachment to humanized AI applications (see Fig. 1). For this purpose and as a starting point, I focus on AI assistants to consumers' daily lives (e.g., Alexa). I assume that these AI devices are more likely to lead to attachment and relationship building due to consumers' regular, more intensive, more frequent, and hence (almost) relational interactions as compared to the rather transactional, infrequent, and short-term encounters with AI in service contexts (e.g., service robots).

2 Pre-purchase and purchase

The first question relates to the motives for acquiring humanized AI assistants, the needs they satisfy, and the goals they are instrumental to. Future research should shed light on whether consumers base their purchase decision including information search and evaluation of alternatives primarily on functional and utilitarian benefits
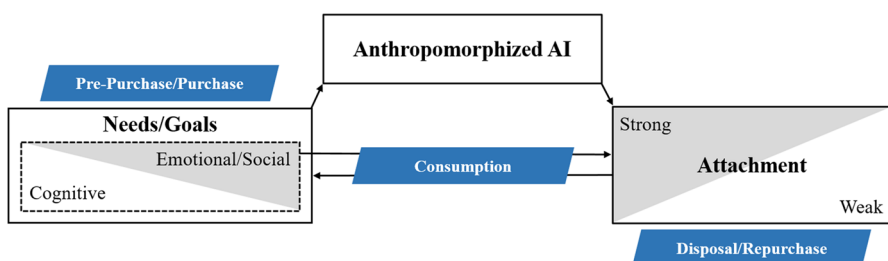

Fig. 1 Consumption process shaped by attachment to anthropomorphized AI

(i.e., cognitive need satisfaction and goal achievement) such as enhancement of cognitive abilities or also on emotional and social needs and goals—or both.

Do belongingness needs to counter social exclusion or loneliness play a role? Do some consumers purchase such humanized AI assistants to cope with relational self-discrepancies, that is, compensatory consumption drives the purchase process and decision? If so, what are the relevant product attributes in terms of consumers' perceived emotional sensing capacities for purchase decisions? If AI assistants are purchased to cope with social exclusion or loneliness, will consumers look for a "friend" or even a "relationship partner?" What would be cross-gender effects of humanized AI assistants given the predominance of female-gendered AI assistants? In light of socio-psychological in- and out-group processes and effects, it would be further interesting to consider if and how implicit or explicit sexual orientation, ethnicity, or other demographic characteristics and cues of AI devices would impact consumers differently.

Beyond the individual sphere, research questions also arise in the context of social relationships. How do relationship partners deal with potential asymmetries in attitudes toward humanized AI assistants? For instance, one partner is less open or reluctant to acquire AI applications with human-like properties due to feelings of discomfort, eeriness, or identity threat (e.g., Blut et al., 2021). Could relationship conflicts emerge if the other partner insists on the purchase?

3 Consumption

A focal question related to the use of anthropomorphized AI assistants concerns whether and to which degree consumers get emotionally attached to them, and/or feel less lonely and socially excluded, or emotionally supported. Can humanized AI assistants become a friend or companion beyond people with physical disabilities? That is, it is worthwhile to ponder if and how humanized AI devices can assist people with cognitive impairments, sightless consumers, or consumers suffering from dementia. For the latter, AI assistants could be particularly helpful if they are able to fulfill memory functions (i.e., cognitive needs). Special cases are deaf consumers given the hitherto predominantly voice-based AI assistants. Besides, consumers with autism or other psychological disorders are another exceptional consumer group, particularly, when it comes to emotional needs and goals (e.g., emotional support), since their emotions are difficult to grasp and assess.

Given the link between loneliness and materialism (e.g., Pieter, 2013), it would be further interesting to investigate if and how the use of humanized AI assistants and emotional attachment to them can reduce materialism and compensatory consumption patterns (e.g., hoarding or compulsive buying). AI assistants' simultaneous facilitation of convenient online purchases and purchase-relevant recommendations might also offset and override potential decreases in materialism.

If anthropomorphized AI assistants become friends/companions, will their recommendations be comparable to word-of-mouth and personal advice or even replace the latter? How will consumers react if they are dissatisfied with AI recommendations' outcomes? Are they going to be particularly dissatisfied/disappointed

or forgiving? In this context, another fruitful avenue of future research are spill-over effects to the brand, that is, if negative experiences and emotions transfer to the brand.

Moreover, attachment to and (substantial) reliance on anthropomorphized AI applications might lead to dehumanization (i.e., the inversion of anthropomorphism) of the consumer (e.g., Herak et al., 2020). What will be the consequences for the consumer's social relations and embeddedness? Could the decrease of (perceived) loneliness and social exclusion reverse if consumers are dehumanized by others? Dehumanization of consumers can acquire particular importance in social relationships. If one partner heavily relies on humanized AI assistants and gets dehumanized in the eyes of the other partner, will relationship conflict emerge? Apart from dehumanization, relationships could be also burdened by one partner's overreliance on AI applications, since the other partner's opinion and recommendations, among other things, are taken less into account or even ignored.

4 Disposal and repurchase

As disposing objects to which consumers are attached to requires particular effort and emotional energy (Dommer & Winterich, 2021), the disposition and repurchase process of humanized AI assistants might be challenging and extraordinary as well. Assuming (strong) bonds between consumers and humanized AI assistants, usage might be continued longer than average or extended as long as possible. If the AI applications malfunction, consumers might attempt to repair instead of repurchasing them. However, that could depend on whether consumers are attached to the physical device and/or are aware that the AI assistant's identity is digitally stored, can be recovered, and transferred to another physical device. Generally, the question arises if the physical device or the digital identity drives consumers' attachment.

Nevertheless, one has to consider the possibility that breakdowns of humanized AI assistants could elicit anxiety, mortality salience, or even mourning. Consumers might then prefer to retain or recycle the AI device instead of disposing it. Generally, the repurchase process might be characterized by limited information search and consideration of alternatives and increased brand loyalty, since consumers might aim at replacing their humanized AI assistant as soon as possible.

5 Conclusion

The increasing humanization of AI applications raises questions about emotional attachment and bonding of consumers. In other words, have anthropomorphized AI assistants the potential to become significant others in consumers' daily lives? If that is the case, various avenues for future research in respect to the individual consumers, their consumption behavior, and social relationships will emerge. As delineated above, the consequences of attachment to anthropomorphized AI can be both positive (e.g., satisfaction of belongingness needs) and negative (e.g., dehumanization) for consumer's personal and social lives. If the advantages outweigh the

disadvantages constitutes a crucial research question given the increasing pervasiveness of AI assistants and other smart objects.

Although anthropomorphized AI in transactional service provision has not yet resulted in consumers' attachment to and bonds with AI (Blut et al., 2021), the predicted feeling AI for relationalization (Huang & Rust, 2021) and/or longer, more frequent, more intensive, or reoccurring interactions with service robots might change this picture. That provides substantial opportunities (i.e., customer experience, engagement, and satisfaction), while simultaneously posing (ethical) challenges related to the avoidance of biases, intelligibility, accountability, and consumers' autonomy. Either way, more research is in demand to anticipate and assess the affective outcomes of consumers' use of and interactions with humanized, emotionally intelligent AI applications.

Declarations

Conflicts of interest The author declares no conflict of interests.

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