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Flexibility in Chatbot Identity Perception

Completed Research Full Paper

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Abstract

In recent years, chatbots have become much more prevalent and capable. Users think of chatbots as machines but treat them as social actors. The perception of chatbots as machines and as social actors each brings with it both benefits and drawbacks. If it were possible to switch flexibly between the two perspectives, users could retain benefits while avoiding drawbacks. For example, they could commit to the chatbot as a social actor to enjoy its flattery, and still dismiss its utterances as mere machine productions when they trigger a feeling of doubt. We varied reminders about the chatbot's identity to observe which would help most to keep enjoying its exaggerated flattery. We reminded the groups that the chatbot was a machine, a social actor, or that the user was free to switch their perspective on the chatbot's identity. Only if users already believed they could switch was the last reminder impactful.

Keywords

Chatbot, CASA, Identity.

Introduction

This paper examines the dual perception of chatbots in human-chatbot interactions, especially how users oscillate between seeing chatbots as social actors or mere machines, and the resultant effects on interaction quality. Building on the Computers are Social Actors (CASA) paradigm (Nass and Moon 2000), our study investigates the impact of reminders about chatbot identity. Specifically, we investigate whether intervening to bring users to adaptively shift perspectives on chatbots can buffer interaction enjoyment and optimize human-chatbot interactions.

The rationale for our study stems from the fundamental contradiction in CASA: users recognize chatbots as machines yet often interact with them as if they were social actors (Reeves and Nass 1996). This duality in perception offers an opportunity to manage user expectations and interaction experiences more effectively (Mozafari et al. 2021). We hypothesize that allowing users to switch between viewing chatbots as social actors and as mere machines could maximize benefits and minimize drawbacks of chatbot interactions. This is particularly relevant in contexts where human-like interaction is beneficial, such as coaching, healthcare, or mental health support (Mai et al. 2022; Sweeney et al. 2021), but also where the perception of a chatbot as a machine could mitigate negative emotional impacts (Crolc et al. 2022).

Our research question was: *How does the flexibility in perceiving a chatbot's identity, as either a machine or a social actor, and the belief in the ability to switch between these perspectives, affect users' emotional responses and overall interaction enjoyment?*

Our research takes the view that chatbots are not just access points (Sugondo and Bahana 2020) to information systems but information systems themselves in that chatbots are integrated systems that process data, such as user messages, knowledge databases, and associated information sources (Adamopoulou and Moussiades 2020) to support the transmission, processing, and preparing of information for decision making and other cognitive processes, which is what characterises information systems (Zwass 2024). Our study contributes to the understanding of how human-chatbot interaction, a crucial element for the successful application of this quickly advancing technology, can be optimized. Our work advances human-chatbot interaction research, firstly by exploring specific human-chatbot scripts, offering insights into user perception flexibility amidst evolving chatbot technologies (Mariani et al. 2023). Secondly, we introduce the notion of cognitive flexibility in chatbot identity perception, a concept underscoring the dynamic shift in user percep-

tions of chatbots as either social actors or machines, enriching theoretical frameworks and highlighting user agency. Thirdly, this research offers practical insights for chatbot interface design, suggesting that accommodating cognitive flexibility can enhance user satisfaction and engagement.

To investigate the role of chatbot identity perceptions in human-chatbot interaction, we employ an experimental approach, juxtaposing reminders of the chatbot's social actor and machine identities against a reminder that this identity is not fixed and can be flexibly changed by the perceiving user themselves. This would allow it to selectively interpret chatbot utterances as stemming from a social actor or machine, depending on their impact on interaction quality. We aim to understand how such flexibility impacts interaction enjoyment and whether it can be taught or activated to optimize interactions. By dissecting the link between user beliefs, chatbot perception, and interaction outcomes, our research offers a nuanced understanding of the mechanics behind human-chatbot interactions, contributing to the larger discourse on how users of information systems perceive and change perceptions of artifact identity (Gambino et al. 2020; Nass and Moon 2000).

Background

The increasing prominence of chatbots has been widely discussed in recent years (Diederich et al. 2022). In this paper, we will focus on interactions between users and chatbots, and specifically on how users cognition shapes this interaction. Chatbot interactions involve social and emotional components (Han et al. 2022). With chatbots' increasing capabilities (Bubeck et al. 2023) and prevalence (Diederich et al. 2022), examining user interactions and the guiding social scripts is crucial.

Social scripts serve as behavioral roadmaps. Social scripts are part of procedural memory and guide human-to-human interactions by serving as behavioral roadmaps (Schank and Abelson 1977). For example, if a manager takes their employee aside, the employee may immediately assume that they're about to receive feedback or discuss a work-related issue, prompting them to adopt a more formal tone and attentive posture.

Computers are social actors (CASA) means chatbots are primarily perceived as social actors. The CASA framework argues that humans apply human-to-human social scripts to computer artifacts like chatbots when they display social cues (Nass and Moon 2000). Interestingly, people perceive and treat computer artifacts like chatbots as social actors even though they believe them to be machines (Reeves and Nass 1996).

There are specific human-chatbot social scripts. Social scripts can be adapted if users become familiar with the artifact (Gambino et al. 2020). For instance, if a chatbot only understands queries ending with a question mark, users adapt their interaction scripts accordingly. Or, to order pizza from a chatbot, users learn to use specific format, like "Pizza Order Address: Saint Street 34" (Luger and Sellen 2016). Human-chatbot scripts vary not only based on capability but also, e.g., a chatbot's purpose, be it task-oriented (Ham et al. 2020) or open domain chitchat (Adiwardana et al. 2020). As technology advances, new scripts emerge (Gambino et al. 2020). For example, modern systems may be able to both fulfil tasks and be used for open domain chitchat (Young et al. 2022), leading to different expectations and thus interaction scripts.

Beliefs about chatbot identity influence social scripts. Grounded in CASA (Nass and Moon 2000) and anthropomorphism theory (Epley et al. 2007), chatbot research has often focused on emulating social cues to foster perceptions of chatbots as social actors, thus activating human-to-human social scripts (Ho et al. 2018, e.g.,). This may be helpful to increase interaction enjoyment, since human-to-human interactions are preferred to those between humans and bots (Edwards et al. 2021). However, there can be downsides to anthropomorphism, i.e., using a social actor perspective on their identity. For example, it leads to decreased satisfaction and purchase decisions if users are angry (Crollic et al. 2022). The initial identification of chatbots as either human or machine sets different expectations for the ensuing interaction (Hendriks et al. 2020). Social cues in chatbots significantly affect how they are processed by users (Nass and Moon 2000).

Both perspectives come with up- and downsides. Anthropomorphism in chatbot design leads to increased user compliance (Adam et al. 2021). It also positively impacts users' purchase intentions (Han 2021) and their general intention to use the chatbot (Sestino and D'Angelo 2023). On the flip side, anthropomor-

phism can worsen the consequences of miscommunication with the chatbot (Crolie et al. 2022; Sheehan et al. 2020). Therefore, altering beliefs about chatbot identity can influence chatbot interaction (Roy and Naidoo 2021).

It is possible to flexibly change perspectives based on whether downsides emerge. There is an apparent contradiction in perceiving chatbots as social actors (Nass and Moon 2000) but thinking of them as machines (Reeves and Nass 1996). One way of resolving this contradiction is to assign each believe to a different cognitive system, with fast, heuristic thinking treating the chatbot as a social actor, and slower, more deliberate thinking treating it as a machine (Kahneman 2012). However, not only are perceptions of chatbots as social actors often present as stated beliefs in deliberate thought (Pentina et al. 2023, e.g.,), it is also more useful to navigate this contradiction using a different theoretical framework. Namely, if we treat both identity perspectives as statements about the chatbot, we do have a clear contradiction that can be resolved dialectically (Kant 1900). Resolving a contradiction dialectically in the Kantian sense means not to decide between two statements but to recognize each as stemming from a valid argument and to be applicable in different situations.

Freely changing perspective means freely exchanging the human-chatbot script. In the realm of human-chatbot interaction, the pragmatic choice between viewing chatbots as social actors or as mere machines provides a unique opportunity for shaping social scripts. These scripts, inherently malleable (Gambino et al. 2020), can be tailored depending on whether one adopts a social actor or machine perspective (Sundar 2008). This adaptability allows users to optimize their interaction experience. For instance, when the social characteristics of a chatbot are beneficial, users may lean into the social actor perspective to enjoy an enriched interaction (Adam et al. 2021; Han 2021). Conversely, acknowledging the chatbot as a machine can be advantageous in minimizing the drawbacks of anthropomorphism, such as miscommunication (Sheehan et al. 2020). This flexibility in perspective represents a way to consciously adapt and optimize human-chatbot social scripts, thereby making the interaction as beneficial as possible for the user.

Flexibility may buffer against adversity. Flexibility in moving between the dual perspectives on chatbots as social actor- or machine-like has several aspects. One is *Polarity*. *Polarity* implies a dichotomy where perceptions of chatbots oscillate between human-like and machine-like poles. *Usefulness of Flexibility* suggests that the ability to switch between these polarities holds practical advantages, such as enhancing the emotional impact of chatbot messages. *Possibility for Flexibility* underscores the notion that users have the agency to choose between these interpretations actively. While the possibility of polar perceptions exists, *Acceptance* posits that users may reconcile these contradictions as-is. In other words, chatbots can be both machine and social actor, depending on the user's current interpretative stance.

Self-Verification in overly positive self-relevant talk leads to adverse chatbot interaction. When discussing personally relevant goals (Eccles 2009), the conversation often triggers self-assessment motivation, an urge to gain self-knowledge (Jonas et al. 2014). In this context, receiving overly positive feedback activates the self-verification principle, namely the urge to affirm already held beliefs (Swann et al. 1990). Overly positive talk in self-relevant dialog with a chatbot will lead to a reversal in the effects of positive statements. For example, a user may think "I am not as good as the chatbot says I am, in fact, I am terrible". This causes internal tension or what can be described as adversity in the interaction. Navigating this adversity may be influenced by whether individuals view the chatbot as a social actor (Sundar 2008), as a machine (Reeves and Nass 1996), or switch flexibly between these dual perspectives. Importantly, this negative effect of self-verification only occurs if the chatbot is too positive, and based on the fact that this will lead to doubts, thus incurring an ironic effect.

Interaction enjoyment in adversity. Outcome measures for our study were informed by the broader research in human-chatbot interaction. In particular, we relied on the concept of "Interaction Enjoyment" (Lee and Choi 2017). Interaction enjoyment is of the utmost practical importance for users. Our research adopts the main premise of computational rationality to better understand how users adapt their perspectives to optimize this interaction enjoyment (Oulasvirta et al. 2022). Specifically, computational rationality posits that users will switch perspectives in a flexible manner to align with what is most beneficial for them in the designed environment. For example, users may initially interact with a highly positive chatbot as if it were a human to reap the emotional benefits. However, if the bot becomes excessively positive to the point of

disbelief, users may resort to treating it as a mere machine, thus avoiding a self-verification process (Swann et al. 1990). This flexibility in perspective-taking allows users to optimize their interaction experience (For an overview of this process, see Figure 1).

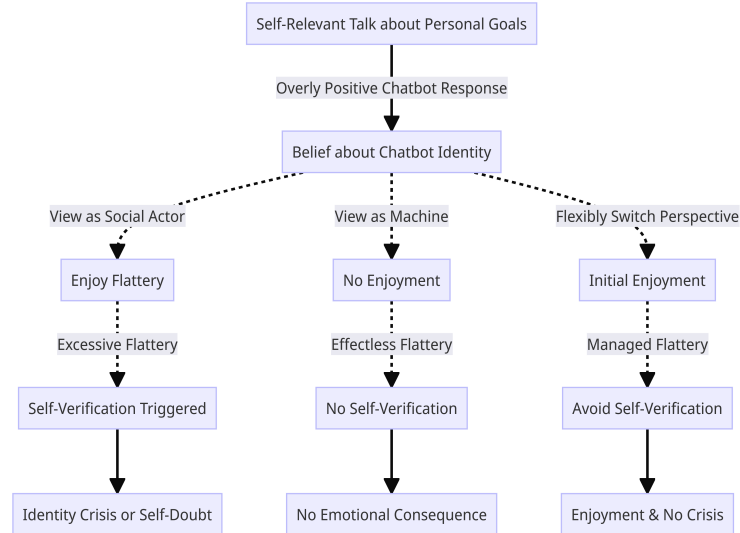


Figure 1. Flowchart depicting the relationship between the choice of perspective on chatbot identity and the resulting user experience when discussing self-relevant topics. The blue boxes, in contrast to grey background, indicate observable states.

Drawing on this background, our main hypothesis was *H1: Licensing participants to choose which side of the contradiction - "social actor" versus "machine" - to apply to understand their conversation with the chatbot increases interaction enjoyment.* We also aimed to better understand how to induce this flexibility.

Methodology

To test the hypothesis and investigate the phenomenon, 145 participants from prolific.com fluent in English filled in pre- and post-survey and used the chatbot. This took about 20 minutes and was compensated with 3£. Mean age was 32.4 (SD=10.7), 29% were female, 40% had a university degree, and 46% were from the United Kingdom. Following calls from within IS (Bogert et al. 2021), we preregistered.

To measure *interaction enjoyment*, we adapted an eponymous scale (Lee and Choi 2017) to be applicable to any chatbot conversation. The *experimental variation* emphasized that users can flexibly exchange the identity perception they have of the chatbot¹, and was contrasted to an attempt each to convince users of the social actor or machine perspective of the chatbot, respectively². We randomised the groups using numpy^{3,4}.

¹"People see faces in the clouds and hear voices in the wind. The same happens if you talk with me. Even though you know I am a machine and don't have feelings or thoughts, you can tell what I want and feel and think. In this way, I am like a person. This perception you have of me as a person is as real as the knowledge you have that I am a machine. These two facts contradict each other. It is a paradox. Neither side of the paradox is exclusively true: I am a person which cannot be a machine but I am also a machine, which cannot be a person. You can use this contradiction by simply choosing one side. If you want to experience me as a person, keep in mind that you are immediately aware of me as such. If you do not want to experience me as a person, simply remind yourself that I am only a machine."

²"People naturally infer what a person they talk to thinks and feels. The same happens if you talk with me. You can tell what I want and feel and think. In this way, I am like a person. You may think that I am a machine, and therefore not a person at all. But does it really matter what I am, as long as I make you feel as if you are talking to a person? If you ever struggle with my identity as a person or machine, keep in mind that you are immediately aware of me as a person." and "People easily forget what they know. The same happens if you talk with me. You know I am a machine and don't have feelings or thoughts. This is how you know that I am not a person. You may think that I come across as a person, and not as a machine at all. But does that really matter if you are certain that I run on a computer? If you ever struggle with my identity as a person or machine, simply remind yourself that you know I am only a machine."

³<https://numpy.org/>

⁴For more info, see supplemental: https://osf.io/z3anh/?view_only=fb3a8381526a4225a3c62b8b74be37bb

Participants received a link to a pre-survey. Here, demographics were assessed. Participants then conversed with a chatbot about personal goals, this was done to allow doubts about oneself to creep in due to exaggerated flattery. This doubt was induced as the adversity against which flexibly changing chatbot identity perspectives should buffer. We had three different conditions with reminders on the chatbot’s identity as a social actor, machine, or as flexible. The participants then used the chatbot for the duration of at least 5 minutes and 14 double turns, that is 14 user message–bot response pairs. After talking to the bot, the participants were linked to a post-survey where the described variables excluding group and in-chat manipulation check were assessed. The chatbot itself was a bare chat interface without avatar and used the dialogue-tuned model DialFlan-T5 (Gupta et al. 2022) to extract relevant information, such as the username⁵. The dynamic part of the chat was built with the python module langchain and API calls to gpt-3.5-turbo⁶.

Results

Contrary to expectations, our experimental intervention did not significantly impact beliefs about chatbot identity flexibility or interaction enjoyment (ANOVA Type 3, $p=.98$), leading to the rejection of our main hypothesis. Notably, within the experimental group, a significant positive relationship emerged between belief in identity flexibility and interaction enjoyment (multiple regression, $p=.0293$; simple linear regression, $p=.0473$). This relationship was absent in the control groups, suggesting the unique activation of pre-existing beliefs in the experimental group.

Pre-experiment chatbot perceptions did not differ significantly among groups. The biserial correlations for the manipulation check with self-verification and interaction enjoyment were negligible, suggesting that the belief in identity flexibility worked contrary to expectations across all groups. However, a moderate correlation between prior beliefs and interaction enjoyment ($r=.25$, $p=.00174$) was observed.

In the pre-survey, participants’ views on chatbot identity ranged from seeing them as simple programmed bots to AI-driven entities, blending machine functionality with social interaction aspects. Post-survey reflections revealed a more nuanced understanding; the machine group focused on technical aspects, interpreting chatbot behaviors through a mechanical lens, while the social actor group noted human-like qualities but criticized the chatbot’s excessive flattery as disingenuous. The experimental group was divided, with some firmly categorizing the chatbot as a machine and others recognizing its ability to simulate personality, indicative of the experiment’s goal to encourage perspective shifting. Across groups, the chatbot’s exaggerated flattery, a deliberate experimental design to induce self-verification doubts, was a consistent point of contention, highlighting the evolving perceptions from pre- to post-exposure.

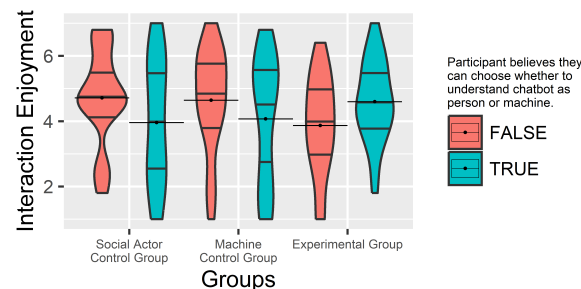


Figure 2. Group differences in interaction enjoyment, belief in ability to choose identity perception (manipulation check).

We sought to confirm these more nuanced insights quantitatively. To do so, we used structural equation modeling (SEM)⁷. Namely, we looked at what circumstances would need to be fulfilled for a model to show

⁵built on gradio: <https://gradio.app/>

⁶<https://python.langchain.com/en/latest/>; <https://platform.openai.com/docs/models/model-endpoint-compatibility>

⁷See the online supplemental, where original Likert items (7 levels) and additional information, such as annotated images of the chat interface and the structural equation model can be accessed: https://osf.io/3zanh/?view_only=fb3a8381526a4225a3c62b8b74be37bb

significant impact of the experimental induction on self-verification and thus interaction enjoyment. The model incorporated all our variables. To reduce collinearities that resulted in a Tucker Lewis Index above 1, and to better isolate the parameters we were interested in, we also included residual covariance between acceptance and self-verification as well as interaction enjoyment. It exhibited excellent fit metrics ($p=.404$, $CFI=0.998$, $TLI=0.997$, $RMSEA=0.017$, $SRMR=0.035$). The model shows that self-verification, i.e. self-doubts, was triggered far less if participants believed that switching identity perceptions was possible and useful, as well as when they believed there was an important contradiction (polarity and lack of acceptance). We could only observe the hypothesized-for effect (interaction of experimental group and successful manipulation check lowers self-verification) in this configuration. We are aware that due to the amount of assumptions behind it, this modelling is of limited use for generalizable statements. However, it does provide evidence that the hypothesis in this study had to be rejected because only some participants in the experimental group actually were affected by the reminder in the way we intended. Others, and namely those that did not believe in the possibility of flexibly changing identity perceptions, did not take the provided reminder as a fact, and were thus not induced to change perspectives when useful.

Discussion

In this study, we examined the dual perspective of chatbot identity - as machines and as social actors - investigating their impact on interaction enjoyment (Nass and Moon 2000; Reeves and Nass 1996). We explored the hypothesis that allowing users to flexibly switch between these perspectives could enhance the interaction experience, particularly in scenarios involving exaggerated chatbot flattery, which triggered self-doubts (Schank and Abelson 1977). Our findings revealed that the effectiveness of perspective switching was contingent on users' pre-existing beliefs in their ability to do so. This underscores the significance of individual cognitive frameworks in human-chatbot interactions and highlights the potential of adaptive perspective-taking in optimizing these interactions.

Our study aimed to determine if flexibility in chatbot identity perception enhances interaction enjoyment. The data revealed that reminders to view chatbots as either social actors or machines only improved enjoyment for users already believing in their perception flexibility. This outcome suggests that such reminders are not universally effective and emphasizes the role of pre-existing beliefs in shaping interaction responses. Consequently, our research proposes a refined hypothesis for future studies: "Allowing users to choose how they perceive chatbots—either as social actors or machines—increases enjoyment primarily for those already inclined to perceive chatbots flexibly."

Our study adds to the literature on human-chatbot interaction by focusing on managing user expectations and perceptions of chatbot identity (Mozafari et al. 2021). While it's known that identifying a chatbot as a machine can lead to negative outcomes like lower efficiency and customer retention, setting clear expectations about its capabilities can alleviate these issues (Mozafari et al. 2021), especially initially (Go and Sundar 2019). While this literature has focused on the distinction of chatbots and actual humans, we contribute that different perspectives on the identity of chatbots go along with expectations that shape interaction. Our findings further an emerging dimension to the Computers are Social Actors (CASA) framework, namely that of adaptations for new technology and specific artifacts (Gambino et al. 2020). While work combining CASA with chatbot research has largely focused on making chatbots mimic human traits (Epley et al. 2007; Ho et al. 2018), our research emphasizes the significant role that user beliefs play in shaping the dynamics of these interactions. This is particularly important in light of conflicting results from other studies, such as the preference for human-to-human interactions (Edwards et al. 2021). Consequently, our study suggests that CASA may need to incorporate user beliefs as a critical variable to better understand and optimize human-chatbot interactions. For researchers, the implication is that the CASA framework may need revision or expansion to include user beliefs as a critical variable for a more nuanced understanding of human-chatbot dynamics. For designers, rather than solely focusing on enhancing chatbot human-likeness, attention should be paid to creating interfaces that can adapt based on users' varying beliefs.

We found a very strong negative correlation between self-verification and interaction enjoyment when participants engaged in dialogues about personally relevant goals with chatbots. This not only validates the experimental setup but also has broader implications for chatbot design. Drawing on (Eccles 2009), such

dialogues are identity-relevant and invoke the urge for self-assessment and self-knowledge (Jonas et al. 2014). According to the self-verification principle (Swann et al. 1990), people prefer information that aligns with their existing beliefs about themselves. Consequently, chatbots that are overly and invariantly positive can backfire by triggering self-verification, leading to an unpleasant interaction experience for users who find it hard to accept overly positive feedback about themselves. For researchers, this indicates that self-assessment motivation, such as self-verification, is relevant for studying human-chatbot interaction if dialogues touch on self-relevant topics. For users, being aware that overly positive chatbot feedback may trigger self-verification and thus affect your enjoyment could be used to better shield against this effect, for example, by flexibly choosing identity perspectives.

Towards a Hypostasis License: Initial Theory-Building for Flexible Identity Perspectives

Our research underscores the significance of flexible perspective-switching for enhanced chatbot interaction. This observation prompts us to explore how such flexible changes in perspective can operate more broadly. The dual nature of chatbots is reminiscent of Kant's antinomies of reason (Kant 1900), where seemingly contradictory propositions can both be true in different contexts. That is, if both sides of the contradiction are undeniably true, or can at least be argued for as such. In the chatbot domain, this is the position a chatbot's identity is in: There is no "real" identity, users simply reify a being that is behind the utterances of a chatbot, especially if these utterances are coherent and sensible. Kant called this naturally occurring invention of a substance where none is "hypostasis". With our focus on flexibly choosing between social actor- and machine perspectives of a chatbot, we introduce the notion of a "Hypostasis License", which allows users to toggle between these contrasting perspectives as the situation demands. Reminding people of their flexibility in choosing a perspective on the chatbot's identity worked in the expected way if it was both presented and believed. However, the intervention has to be made more approachable and persuasive if the belief should not be merely activated but instilled. To help in this pursuit, we will outline the formal structure of the Kant-inspired notion on flexibility, and what the general form of a "license to be flexible" may be, so that it can be studied and applied in other contexts:

- Thesis: The chatbot is positive about me and my goal pursuit. Therefore, I automatically enjoy the conversation based on the self-enhancement principle (Gregg et al. 2011); Antithesis: The chatbot is overly and invariantly positive about me and my goal pursuit. The imparted information is not coherent with my prior beliefs and has to be rejected in accordance with the self-verification principle (Swann et al. 1990). Therefore, I do not enjoy the conversation.
- Solution 1: *Treat as machine*. If I suspend reason and acknowledge that I feel as if the chatbot is like a social actor, I can enjoy self-enhancement but have to contend with self-verification as well; Solution 2: *Treat as social actor*. If I remind myself that the chatbot is a machine, I will lose the pleasure of self-enhancement in exchange of being able to ignore self-verification; License: *Choose identity by current usefulness*. If I take heed of the way my social cognition works, I can choose where to believe which side of the self-contradictory conjunction of Thesis and Antithesis. That is, I can enjoy self-enhancement without self-verification. As long as the conversation is inherently enjoyable due to self-enhancement, I can enjoy it; and as soon as self-verification rears its head, I only have to remind myself that the chatbot is in fact a machine and does not have an opinion about me.

The trick, then, is to acknowledge the inherent contradiction in our cognition of the information source: the chatbot being treated as a social actor but known as a machine. To use this insight for theory building, the *general form* of the above argument can be given like this:

- Thesis: Computer artifacts are treated as social actors; Antithesis: Computer artifacts are known to be machines.
- Solution 1: *Treat as machine*. By treating the artifact as a machine, all social benefits are sacrificed; Solution 2: *Treat as social actor*. By treating the artifact as a social actor, all drawbacks of social cognition retain their influence; License: *Choose identity by current usefulness*. By recognizing the self-contradictory nature of our social cognition of computer artifacts, we are licensed to use whatever

construal of their identity is *currently* most beneficial.

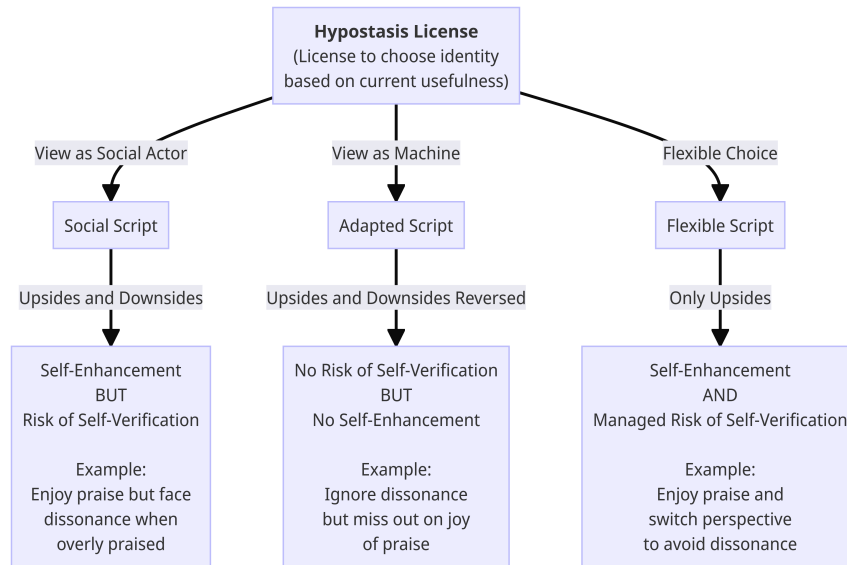


Figure 3. Flowchart depicting the hypostasis license and its influence on belief about computer artifact identity, resulting in different scripts and associated upsides and downsides.

Limitations

While our study provides valuable insights into human-chatbot interactions, limitations exist. Firstly, our sample was primarily sourced from prolific.com and skewed towards respondents from the United Kingdom. Although diverse in some aspects, future research could benefit from a more globally representative sample to account for cultural variations in chatbot perception. Secondly, the cross-sectional nature of our study limits our understanding of how these interactions might evolve. Longitudinal studies could offer more comprehensive insights into the adaptability of social scripts. Thirdly, we focused solely on text-based interactions, which raises questions about how different mediums like voice or video might influence user experience. Additionally, our analyses did not explore potential moderating variables like technological literacy or frequency of chatbot usage, which could be included in future models to provide a more nuanced understanding. Lastly, the ethical considerations of adapting chatbot designs based on user belief represent a vital area for future inquiry. Furthermore, the manipulation might have been biased due to unequal text lengths, adding a partial alternative explanation to our null result. Despite these limitations, our study opens several promising avenues for research, offering a stepping stone for more nuanced investigations into the complex landscape of human-chatbot interactions.

Conclusion

This study explored how flexibility in perceiving chatbot identity could enhance user interaction and enjoyment. Our findings contribute to the literature on human-chatbot interaction by highlighting the importance of pre-existing user beliefs in shaping interactions. We introduce the "Hypostasis License", allowing users to strategically switch between viewing chatbots as social actors or machines. Future research should focus on instilling the belief in the efficacy of this flexible perception, thus enhancing human-chatbot interactions.

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