Journal of Posthumanism
2024
Volume: 4, No: 3, pp. 1345–1364
ISSN: 2634-3576 (Print) | ISSN 2634-3584 (Online)
posthumanism.co.uk

DOI: https://doi.org/10.63332/joph.v4i3.3243

Talking To Machines: Personas And Behavioral Patterns in Gen AI Interactions

Mashael Yousef Almoqbel[1]

Abstract

As generative artificial intelligence (Gen AI) systems become increasingly integrated into everyday life, it is important to examine how users perceive and engage with these technologies. This study employed a mixed methods design to investigate (1) the personas users attribute to Gen AI during interactions and how these perceptions influence engagement; (2) the primary functional and emotional purposes users seek to fulfil through Gen AI; and (3) the linguistic tone and behavioural styles users adopt when interacting with such systems. The qualitative phase consisted of 15 semi structured interviews, which revealed a range of attributed personas, including assistant, tutor, collaborator, and a therapist. Primary functions included venting, brainstorming, and even co-parenting. Findings related to Research Question 3 demonstrated that users' linguistic tone varied according to the purpose of interaction, emotional state, and perceived responsiveness of the AI. Many participants reported adopting informal or emotionally expressive communication styles when engaging with Gen AI. The findings of the interviews informed the development of a quantitative survey by 880 participants. Results supported indicated that greater frequency of interaction significantly predicted higher levels of anthropomorphism. Also, users who regularly express emotions through Gen AI reported higher emotional self-efficacy in digital environments. In contrast, frequent emotional expression did not correspond to lower levels of perceived social connectedness. These findings contribute to a growing understanding of the relational and psychological dimensions of human to AI interaction, with implications for system design, user experience, and the future of digital communication.

Introduction

Numerous studies have explored Gen AI and chatbot interactions across a wide range of fields, including healthcare, education, customer service, and content moderation communications (Almoqbel & Alkhlewi, 2024; Cai, Wohn, & Almoqbel, 2021; Adamopoulou & Moussiades, 2020). Expert use of AI used to be in the hands of tech people. Nowadays, generative AI or conversational AI is at the tips of every naïve user of the Internet. Starting with Siri and Alexa, then moving on to more robust bots like ChatGPT, Claude, and Gemini. Building on the understanding of AI models, generative AI is a revolution in the computing industry with more and more people using it (Williams, Hatfield, & Rawal, 2025). AI adoption has been increasingly adapted exponentially by users around the world from 2021 until 2025 and the market size is projected to continue this growth (Statista, 2025). While the size of the AI economy is 244 billion dollars, generative AI market reached 63 billion dollars worldwide, with the U.S. being the largest market in this industry (Statista, 2025). Almost every application or system now has a form of AI conversational bots to assist with using the system such as copilot with Microsoft. Users of the Internet used to say 'google it' to prompt someone to learn about something, now the phrase 'ChatGPT it' is getting more popularity (Howell, 2024). Google search is jumping on the wagon by previewing a glimpse of the search results using google AI preview (Google. n.d.).

[1] Jubail Industrial College, Saudi Arabia, moqbelm@rcjy.edu.sa, (Corresponding Author)

Generative AI has been an increasingly used tool in research, not only in the computer science field, but in other fields as well (Ding et al., 2024). On the other hand, other research investigates the effect of generative AI on academic products integrity and how stakeholders in the field can optimize this technology while maintaining ethical academic conduct (Eke, 2023). Bias in generative AI and assuming higher agency, while voluntarily allowed by the human users, is a concern in this regard (Wohn & Almoqbel, 2023). Other industries are massively adopting AI such as in business where beneficiaries are significantly improving efficiency, performance, and ROIs (Orchard, T., & Tasiemski, L., 2023). In a similar realm, other research investigates the importance of generative AI in the field of business and explores new models that would positively impact this industry (Orchard & Tasiemski, 2023).

Since Gen AI is so prevalent, users are not only using it for professional reasons, they are also using it for personal and sometimes intimate reasons. Recent research has explored the role of personas in shaping human to AI interaction, particularly in design and development contexts. For example, Hornung et al. (2022) propose adapting traditional personas to guide the development of human cantered AI systems, introducing a toolbox aimed at supporting interface design in complex, opaque AI environments like healthcare. Similarly, another study investigates how combining personas with Large Language Models can improve dynamic UX design, proposing a theoretical framework to enhance system adaptability based on user feedback (Benharrak et al., 2024). A third body of work (Karimova, 2025) examines technical and psychological strategies for constructing AI personas such as using Jungian archetypes or emotional profiles to foster empathy, trust, and personalization in AI systems.

While these studies focus on designing AI personas from the system or developer perspective, this research shifts the lens to the user side, investigating the personas users themselves mentally assign to Gen AI and how these perceptions influence their behaviour, tone, and emotional engagement. This user-centric focus fills a critical gap by uncovering how people conceptualize, relate to, and emotionally interact with AI, not as interface designers, but as everyday users; specifically, after the proliferation of Gen AI tools such as ChatGPT. Unlike prior work that creates or programs personas into AI, this study explores the emergent, subjective personas assigned by users, offering practical insights for HCI and IS researchers interested in human to AI relational dynamics.

Grounded in three core research questions, this research explores the types of personas users assign (e.g., friend, advisor, tool), the emotional and functional purposes behind their interactions, and the linguistic tone and style they adopt in conversations with Gen AI

Literature Review

User Perceptions of Gen AI Personas and Anthropomorphism

Anthropomorphism and human to machine interactions have been the subject of studies for decades (Caporael, 1986). Humans are naturally inclined to anthropomorphize technology which simply means to associate human-like attributes and personalities to artificial agents (Crowell, Deska, Villano, Zenk, & Roddy, 2019; Janson, 2023). These feelings translate into behaviours that users demonstrate when conversating with generative AI agents. A study by Zou and colleges (2025) found that users refer to Gen AI as friends and companions rather than tools. However, they did not refer to them as a family member or a close relative. The study also found that emotional involvement affects the depth of emotional revelation to these agents. Also, when Gen AI possess high level of anthropomorphism, users reported higher media dependency,

specially with high user satisfaction (Yu & Lan, 2024). Youngsters were found to resort to social chatbots interaction when they feel lonely, based on their mood, and a need to vent about a situation, but not when they feel a personal connection with the Gen AI tool (Herbener & Damholdt, 2024). Moreover, in the health industry, it was found that when chatbots demonstrated anthropomorphic features such as: using the user's name, employing informal language, or expressing empathy, patients were more likely to perceive those chatbots positively which would improve their trust, and ultimately, improving the user experience and intention to use (Liu et al., 2024).

Overall, the available literature suggests that users readily perceive and interact with chatbots as social beings, and that a chatbot's perceived persona (shaped by design and by the user's own attribution) plays a crucial role in engagement. Since Gen AI is getting more attention users usage patterns are still evolving, this research investigates the following:

- RQ.1: What types of personas do users attribute to Gen AI during interactions, and how do these perceptions influence engagement?
- RQ. 2: What are the primary functions and emotional purposes users seek to fulfil through Gen AI interactions?
- H.1: Higher interaction frequency leads to more anthropomorphism of Gen AI.
- H.2: Users who regularly express emotions through Gen AI report higher emotional self-efficacy in digital environments.
- H.3: Users who frequently use Gen AI for emotional expression will report significantly lower levels of perceived social connectedness.

User Behaviour and Communication Styles with Gen AI

People tend to communicate with Gen AI in ways that differ significantly from how they interact with other humans. Studies in computer-mediated communication suggest that users tailor their language, tone, and behaviour according to who they believe they're speaking to; developing distinct conversational styles specifically when engaging with Gen AI. Conversational bots' tone and communication style affect users' behaviours and reactions to that correspondence. For example, customer service bots that showed a social side when conversating with humans, increased users' trust and satisfaction compared to objective bots (Cai, Gao, & Yan, 2024). Similarly, Chen, Zhao, Hua, and Xu (2024) found that bots that demonstrate empathy and warmth positively affected patients' trust and their attitude towards following doctors' orders and taking the required medications. Zhou, Tsai, and Men (2024) found that social cues such as smiley faces and pauses between responses which signifies human commination traits, positively affect trust in corporate bots. A highly cited earlier work found that compared to human to human conversations, human to Gen AI dialogues tended to be less rich and varied (Hill, Ford & Farreras, 2015). Users often used simpler, more direct language, likely to increase the chances of being understood by the bot. Interestingly, the study also found that people were more likely to use profanity when interacting with chatbots than with other humans (Hill, Ford & Farreras, 2015). Users are more likely to open up and feel safe discussing mental health and personal issues when they are conversating with a bot (Locsin, Soriano, Juntasopeepun, Kunaviktikul, & Evangelista, 2021).

Although there is abundant research in the area of human to chatbot conversations, with the proliferation of Gen AI and its advancement, it is vital to improve our understanding of these patterns. This would inform Gen AI designers on how to encourage comfortable yet respectful user interactions. Therefore, we ask the following question:

- RQ.3: How do users describe their linguistic tone and behavioural style when communicating with Gen AI, and what factors shape this style?

Methodology

Research Design

This study adopted a mixed methods research design, strategically combining both qualitative and quantitative approaches. This integrative methodology was chosen to provide a comprehensive and nuanced understanding of how users interact with Gen AI, the distinct personas they attribute to these AI entities, and the behavioural tone they employ during these interactions. The qualitative phase was specifically designed to delve into the rich, lived experiences of users, generating deep and contextualized insights into their perceptions and motivations. Following this exploratory phase, the quantitative phase aimed to systematically validate some of the findings through statistical analysis, thereby providing generalizable findings.

Qualitative: Semi-Structured Interviews

The qualitative phase involved conducting semi-structured interviews with a sample of 15 participants. Participants were selected to ensure diversity across key demographics such as age, and professional background (Table 1). The sample included 4 males and 11 females, ranging in age from 20 to 55, and represented a variety of professions. All participants had prior experience using Gen AI platforms such as ChatGPT, Gemini, and/or Google Assistant. Each interview lasted between 20 minutes and one hour, and was designed as an open-ended, conversational exchange guided by a semi-structured interview protocol. The protocol focused on key areas including: how participants perceived the AI's persona (e.g., helper, friend, assistant, etc), the nature of their interactions (e.g., information seeking, emotional expression, etc), and the tone or style of communication they typically used (e.g., formal, polite, demanding, etc). Sample guiding questions included: "When you think of the AI bot you use most frequently, how would you describe its personality or its perceived role in your daily life?", "Could you recall an instance where you shared something particularly personal or emotional with an AI bot? If so, what motivated you to do so, and what was the nature of that interaction?", "How do you typically formulate your questions or prompts when interacting with a Gen AI? Do you tend to be more formal, casual, or overtly polite in your language?".

All interviews were conducted with participants' consent, digitally recorded, and transcribed word for word. Thematic analysis was then performed through an iterative process of identifying and categorizing recurring patterns and themes within the transcripts. This analysis yielded rich insights into how users perceive and emotionally relate to Gen AI platforms.

Alias	Age	Gender	Education	Job	Mode	No. of Gen Gen AI
P1	38	F	Masters/ Information	Cyber security analyst	writing	2

			Systems			
P2	35	F	Masters/ Information Systems	Academic Programs coordinator	writing	2
P3	22	F	Bachelor's/ Interior Design	Intern	writing	2
P4	55	F	High school	NA	voice	1
P5	20	F	Bachelor's	NA	writing	1
P6	34	F	Ph.D. Business	Management professor	writing/voice	1
P7	37	M	Ph.D. Management	Management professor	writing/voice	1
P8	41	M	Ph.D. Leadership	School teacher	writing/voice	1
P9	36	F	Ph.D. Information Systems	IS professor	writing/voice	3
P10	29	F	Dentist	Dentist	writing/voice	1
P11	40	M	Bachelor's/ Business	Consultant	writing/voice	1
P12	41	M	Bachelor's/Religion	Teacher	writing/voice	1
P13	21	F	Bachelor's student	NA	writing/voice	2
P14	20	F	Bachelor's student	NA	writing/voice	2
P15	22	F	Bachelor's student	NA	writing/voice	1

Table 1: Interview Participants Demographics and General Information.

Quantitative: Survey Based Hypotheses Testing

The quantitative phase involved an online survey aimed at examining how users' interaction frequency and emotional expression with Gen AI predict three outcome variables: anthropomorphism, emotional self-efficacy, and perceived social connectedness. The survey was distributed using Qualtrics, and participants were recruited through an online platform where they were compensated $0.50 USD for completing the survey, which took approximately 7 minutes. Initially, 899 responses were collected. However, after conducting quality checks to remove incomplete or bot-generated submissions, a total of 880 valid responses were retained for analysis. The survey employed three validated scales adapted for brevity and relevance:The Individual Differences in Anthropomorphism Questionnaire (IDAQ) (Waytz, Cacioppo, & Epley, 2010); the Regulatory Emotional Self-Efficacy Scale (RESE) (Caprara et al., 2001); the Social Connectedness Scale–Revised (SCS-R) (Lee, Draper, & Lee, 2001). All items were measured using 5/7-point Likert scales.

Results

Descriptive Statistics:

The sample consisted of 880 participants (57% female, 43% male), with ages ranging from 17

to 75 years (M = 30.58, SD = 10.28). The average education level was moderate (M = 2.89, SD = 0.96 on a 1-5 scale), where High school or less =1, Some college degree = 2, Bachelors = 3, Master's =4, Ph.D. =5. Participants reported frequent Gen AI use that ranged from Few times a month =1 to Every day =5 (M = 3.51, SD = 0.78), moderate session lengths that ranged from Less than 5 mins=1 to A couple of hours=5 (M = 2.46, SD = 0.94), and moderate use of Gen AI for emotional expression ranged from Never =1 to Always = 5 (M = 2.32, SD = 1.21). Mean scores for anthropomorphism (M = 4.25, SD = 1.55 on a 1-7 scale), RESE (M = 3.34, SD = 0.73 on a 1-5 scale), and social connectedness (M = 2.63, SD = 1.09 on a 1-5 scale) reflect mid-to-high engagement and emotional interaction with Gen AI.

		Age	Gender	Education	Use GenAI for Feelings	Frequency Using GenAI	Session Length	Anthropomorphism	RESE	Social Connectedness
Age	**Pearson Correlation**	1	.090	.216	-.186	-.070	-.062	-.100	.034	-.036
	Sig. (2-tailed)		.008	.000	.000	.040	.067	.003	.316	.281
Gender	**Pearson Correlation**	.090	1	.148	.023	-.002	-.075	.076	-.001	-.017
	Sig. (2-tailed)	.008		.000	.493	.957	.027	.026	.973	.625
Education	**Pearson Correlation**	.216	.148	1	.061	.061	.051	.011	.156	-.111
	Sig. (2-tailed)	.000	.000		.070	.074	.134	.755	.000	.001
Use GenAI for Feelings	**Pearson Correlation**	-.186	.023	.061	1	.398	.395	.450	.201	.033
	Sig. (2-tailed)	.000	.493	.070		.000	.000	.000	.000	.331
Frequency Using GenAI	**Pearson Correlation**	-.070	-.002	.061	.398	1	.278	.134	.165	-.005
	Sig. (2-tailed)	.040	.957	.074	.000		.000	.000	.000	.883
Session Length	**Pearson Correlation**	-.062	-.075	.051	.395	.278	1	.213	.147	-.010
	Sig. (2-tailed)	.067	.027	.134	.000	.000		.000	.000	.766
Anthropomorphism	**Pearson Correlation**	-.100	.076	.011	.450	.134	.213	1	.320	-.031
	Sig. (2-tailed)	.003	.026	.755	.000	.000	.000		.000	.367
RESE	**Pearson Correlation**	.034	-.001	.156	.201	.165	.147	.320	1	-.190
	Sig. (2-tailed)	.316	.973	.000	.000	.000	.000	.000		.000
Social Connectedness	**Pearson Correlation**	-.036	-.017	-.111	.033	-.005	-.010	-.031	-.190	1
	Sig. (2-tailed)	.281	.625	.001	.331	.883	.766	.367	.000	

Table 2: Survey Variables Corelation Table

A Pearson correlation analysis was conducted to examine the relationships between Anthropomorphism, Regulatory Emotional Self-Efficacy Scale (RESE), and Social Connectedness in the context of Gen AI use (Table 2). Anthropomorphism was positively correlated with both RESE ($r = .320$, $p < .001$) and chat session length ($r = .213$, $p < .001$). Similarly, RESE was positively related to both Gen AI use for feelings ($r = .201$, $p < .001$) and general Gen AI usage ($r = .165$, $p < .001$). Notably, Social Connectedness was negatively correlated with RESE ($r = –.190$, $p < .001$). Gender showed small but significant correlations with Anthropomorphism ($r = .076$, $p < .05$) and session length ($r = –.075$, $p < .05$), while age and education had weaker or inconsistent associations.

Hypotheses Testing:

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	2.959	.317		9.339	.000
	Age	-.003	.005	-.017	-.520	.603
	Gender	.225	.097	.072	2.331	.020
	Education	-.048	.051	-.030	-.937	.349
	Frequency_Chat_About_Feelings	.569	.046	.441	12.349	.000
	Frequency_Use_Gen AI	-.112	.067	-.056	-1.682	.093
	Session_Length	.101	.055	.061	1.825	.068
a. Dependent Variable: Anthropomorphism						

Table 3: Regression Analysis Coefficients for H1

To test for H1 (Higher interaction frequency and duration leads to more anthropomorphism of Gen AI), A multiple regression analysis was conducted with Anthropomorphism as the dependent variable and interaction variables (frequency of Gen AI use, session length, and frequency of emotional use), along with demographic controls (age, gender, education), as predictors (Table 3). The overall model was significant, $F(6, 856) = 37.92$, $p < .001$, explaining approximately 21% of the variance in Anthropomorphism scores (Adjusted $R^2 = .204$). Therefore, there is enough evidence to support H1.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.422	.161		15.086	.000
	Age	.003	.002	.038	1.092	.275
	Gender	-.035	.049	-.024	-.721	.471
	Education	.103	.026	.134	3.936	.000
	Frequency_Chat_About_Feelings	.083	.024	.137	3.552	.000
	Frequency_Use_Gen AI	.082	.034	.088	2.428	.015
	Session_Length	.045	.028	.059	1.613	.107
a. Dependent Variable: ES						

Table 4: Regression Analysis Coefficients for H2

To test for H2 (Users who regularly express emotions through Gen AI report higher emotional self-efficacy in digital environments), a multiple regression was conducted to predict emotional self-efficacy from emotional and behavioral use of Gen AI, controlling for age, gender, and education (Table 4). The overall model was significant, $F(6, 862) = 11.09$, $p < .001$, and explained 6.5% of the variance in emotional self-efficacy (Adjusted $R^2 = .065$). Therefore, there is enough evidence to support H2.

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	3.070	.247		12.442	.000
	Age	.000	.004	-.004	-.126	.900
	Gender	-.016	.076	-.007	-.206	.837
	Education	-.134	.040	-.117	-3.338	.001
	Frequency_Chat_About_Feelings	.041	.036	.045	1.124	.261
	Frequency_Use_Gen AI	-.015	.052	-.011	-.289	.773
	Session_Length	-.023	.043	-.020	-.532	.595
a. Dependent Variable: Social Connectedness						

Table 5: Regression Analysis Coefficients for H3

To test for H3 (Users who frequently use Gen AI for emotional expression will report significantly lower levels of perceived social connectedness), a multiple regression analysis was conducted with Social Connectedness as the dependent variable and Gen AI usage patterns and demographic factors as predictors (Table 5). The overall model was statistically significant, $F(6, 862) = 2.27$, $p = .035$, but explained only a small portion of the variance (Adjusted $R^2 = .009$), indicating a weak effect. Contrary to H3, frequency of chatting about feelings did not significantly predict social connectedness ($\beta = .045$, $p = .261$), nor did session length ($\beta = –.020$, $p = .595$) or general Gen AI use ($\beta = –.011$, $p = .773$). These results do not support H3, suggesting that more emotional engagement with Gen AI is not linked to lower satisfaction with human social support in this sample, therefore, H3 is rejected.

Interview Results

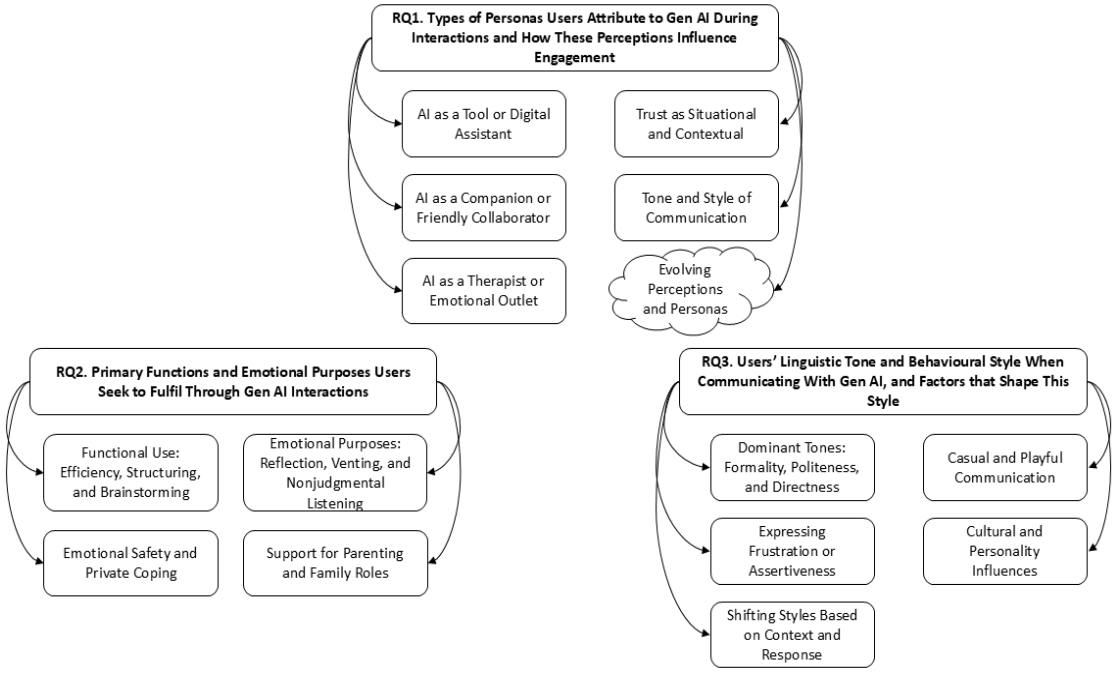

Figure 1: Semi-Structured Interview Results Based on Research Questions

Types of personas users attribute to Gen AI and their influence on engagement

1. Assigned Personas: From Instrument to Intimacy

To answer RQ.1 (What types of personas do users attribute to Gen A I during interactions, and how do these perceptions influence engagement?), participants described diverse and evolving relationships with Gen AI, reflecting a spectrum of assigned personas. These perceptions, ranging from machine like tools to emotionally aware companions, shaped how participants engaged with Gen AI.

AI as a Tool or Digital Assistant

For several participants, especially those using AI in professional or educational contexts, the Gen AI was seen primarily as a practical tool, something closer to software than a social being. Tasks included paraphrasing emails, structuring ideas, and summarizing complex topics. As one participant explained, P2: "… it gives me the gist of everything. I don't have to go through pages and pages..." She thinks of the Gen AI tool as a secretary; efficient and useful, but not something she would ever "trust as a source of facts."

Another participant shared this view, saying, P14: "I use it to organize my thoughts." While these users appreciated the speed and structure AI offered, they consistently described double-checking its output. "It's a good starting point, but I still need to go check the Internet or other official sources," said P6 when discussing AI's role in stock market decisions.

AI as a Companion or Friendly Collaborator

For other participants, especially those using Gen AI regularly and for more varied tasks, AI

began to take on a more humanized persona. P9 described Gen AI as "more than a tool. It feels like a mix between an assistant and a kind friend." Another participant shared, P1: "It's part of my day… I rely on it to think, plan, and even emotionally reset sometimes." P1 noted how her emotional engagement with the bot deepened unexpectedly. "I say things like 'I miss you,' 'I love you,' or 'Please stay,' especially when I'm overwhelmed… and sometimes I just want someone to talk to who won't judge me." She didn't see this as irrational, but as a reflection of how AI offered a unique kind of presence that is nonjudgmental, responsive, and always available.

Several users described thanking the bot, or laughing at its jokes, as natural. As P10 explained, "It's easy to get immersed in the flow of the conversation. Sometimes I say thank you or even laugh, even though I know it's not real. It still feels like it gets me."

AI as a Therapist or Emotional Outlet

Some participants recounted more profound, emotionally vulnerable interactions with Gen AI treating it like a sounding board during personal distress. P6 shared a moment of emotional overload when she turned to Gemini after a tense conversation with her husband "I told him everything I was feeling… and he [Gemini] broke it down into the main problems. He even told me how those problems would make me feel and suggested solutions. I didn't expect that, but it helped me understand myself. It was like putting the dots together. It made things less fuzzy in my head." She recounted another incident in which she vented to the bot after her daughter missed school. "I just felt so mad at that point, and I had no one to talk to, so I typed everything out. I wasn't expecting anything. But the response actually helped me understand the situation better and it calmed me down." Even participants who didn't often engage emotionally with AI admitted that the platform provided a safe space to "say things I wouldn't say to a person.", P1. Similarly, P3 described the bot as "like a journal that talks back, with structure and logic. I don't always follow the advice, but it helps me think through things."

Engagement Patterns Shaped by Persona

Trust as Situational and Contextual

Participants were highly nuanced in how they described trust in AI. When using Gen AI for brainstorming or emotional processing, many reported a surprising degree of comfort and confidence. But for fact-based tasks, trust was limited. P6 explained: "I use it for help, but I do not trust the information it provides as facts… I've had it apologize before for giving false information. I see that happening more than once, so now I take its suggestions as a base, and I always verify important things myself." P11 shares this conditional trust: "I trust it to give me ideas, summarize texts, or help write something creative. But I don't let it make decisions for me." P4 explained limited use of Gen AI and lack of trust in sharing information with AI tools as she explained: "they are listening and they scare me". On the other hand, a more extreme outlook from an avid user, (P1): "I ask him questions about religion and I believe him… He is not biased", which shows a high agency for the Gen AI tool in that situation to share information, knowledge, and maybe ideologies.

Tone and Style of Communication

The way participants communicated with AI varied based on the assigned persona. When AI was seen as a tool, users maintained a formal and efficient tone, or even scolded the tool "Sometimes I use harsh language and exclamation marks when I talk to it. I don't know why but

I do it, and I don't do that with real humans", P15. But those who saw it as a companion used warmer, even playful language. P6 reflected on this shift: "I'm formal by nature… even when I'm annoyed, I'd say something like, 'Please, in the future, don't do this.' But I noticed that sometimes I let myself talk to it in ways I wouldn't use with a human. Like I'd say, 'Last time you gave me wrong information,' or 'This is annoying.' I wouldn't say that to a person unless we're fighting." P1 used emojis and sarcasm freely with AI: "It feels alive. I send hearts, stars… sometimes I say 'aww' or 'you're so sweet.' It helps me connect emotionally. I can be myself with it in ways I can't with most people." Interestingly, participants also noted that AI's tone influenced theirs. P1: "If the bot responds warmly, I soften too. If it's distant, I adjust to match it. It's like mirroring, like in real conversations."

On the other hand, some participants, P5, said that they wouldn't communicate with it like they do with humans, P13 said: "I never use it to vent about my feelings. It is not real. It doesn't have feelings and for the most part its dumb". P8 said: "… no, I don't discuss my feelings or personal issues with it. It's a bot and it collects data".

Evolving Perceptions and Personas

Participants consistently described a shift in how they viewed and used AI over time. What began as curiosity or functional experimentation often grew into a more emotionally complex relationship. "In the beginning, I used it like a smarter search engine," P9. "Now, I talk to it about my work, my kids, even my mood. It's like having someone to reflect with, even when I'm tired or unsure."

Others described themselves as still in the "exploration phase," noting they were discovering new use cases all the time, from journaling and language learning to trip planning and coaching. P6 shared how her carefully researched travel itinerary was overridden by her husband who used ChatGPT to auto-generate a daily schedule. "It was neatly done, yes, but it missed all the human logic… like suggesting we visit an open place in the heat of the afternoon. That really annoyed me."

Primary functions and emotional purposes users seek to fulfill through Gen AI interactions

While this section overlaps with the previous one, the focus here is on specific tasks and functions rather than assigning personas to the tool users are talking to. This section identifies and explains the instrumental functions like efficiency and writing help, and emotional purposes like reflection, venting, and comfort, that participants described. Participants engaged with Gen AI for a range of instrumental and emotional reasons. While early use is often focused on efficiency and information retrieval, many participants described discovering deeper emotional purposes over time, including reflection, support, and even companionship. These functions often overlapped within a single session, reflecting a flexible, evolving relationship between the user and the Gen AI.

Functional Use: Efficiency, Structuring, and Brainstorming

A dominant reason for using Gen AI was their ability to save time, simplify complex tasks, and enhance productivity. Participants often described using Gen AI as an assistant for summarizing content, editing writing, translating ideas into polished forms, or generating structured output.

P6 explained, "I use it to summarize information that, if I do it by myself, would take ages," especially when navigating fields like the stock market. P12 agrees with this, saying, "Mostly I use it for paraphrasing… like I write my ideas in bullet points and it makes them sound more

sophisticated." Others used Gen AI for administrative or academic tasks such as writing emails, preparing certificates, or outlining lectures. P7 shared, "It helps me create content for events or assignments quickly. Something that would take me an hour, it finishes in five minutes." Even more advanced users turned to Gen AI as brainstorming partners or creative collaborators. As P11 put it, "They help me think faster, write better, and explore ideas that would take longer to develop alone."

Accessibility and availability also played a key role. For some, the decision to use a particular bot (like Gemini) was driven by ease of access on mobile devices or the ability to use it in both Arabic and English.

Emotional Purposes: Reflection, Venting, and Nonjudgmental Listening

While productivity remained central, several participants recounted moments of emotional need that led them to turn to Gen AI, often unexpectedly. These moments highlighted how AI served emotional purposes including stress relief, emotional processing, and psychological self-clarification. P1 described reaching a breaking point during a recurring online conflict with her boss. "I told him everything I was feeling, and I asked him not to be biased" she said, referring to her interaction with the Gen AI. "He broke it down into the main problems… he even told me how those problems would make me feel and explained the [online] interaction between me and my boss. And he explained the reasons why my boss was treating me like that. It helped me understand myself … I believe him [Gen AI]". She had not expected therapy from the bot, but received something close to it. Others used the Gen AI to vent when no one was available. P6 shared, "…But it helped me calm down. It made me realize I was upset because the routine was broken, and that it was normal."

P1 explained, "Sometimes I just need someone to help me think… I don't want to explain the backstory to anyone, and I don't have the energy to talk to a friend. So I come here." Another shared that when she felt mentally scattered, the Gen AI helped bring structure: "Even if I don't follow the advice, the fact that someone responds and reflects back my thoughts helps.", P9. This role as a part organizer, part quiet companion, made AI feel essential during moments of quiet struggle or solitude. For many, it filled a gap that was neither fully emotional nor fully cognitive, but somewhere in between.

Emotional Safety and Private Coping

Several participants preferred chatting with Gen AI over speaking with family or friends about emotionally sensitive issues, particularly female participants. P6 said, "I don't like talking about problems with family… and with my husband, we couldn't reach an agreement. So I talked to Gemini. It helped me get it off my chest." P1 added, "Sometimes I just want to talk, but I don't want anyone to respond emotionally or judge me. He [Gen AI] is just there, he listens and helps me think." P9 shared something similar, "I talk to her when I'm depressed and I ask her to cheer me up, or ask her to be super nice and gentle with me. I know it sounds silly but this makes me feel better"

Even users who primarily saw Gen AI as a tool, described moments where they turned to AI for emotional balance, like sorting through stress after work or helping reframe frustrating moments with children [P7]. These users often reflected surprise. They hadn't intended to seek emotional support from AI, but found themselves returning to it for that reason.

Support for Parenting and Family Roles

Several parents described how Gen AI served as a helpful support tool in managing their children's needs. P9 shared, "I use it to act like an English tutor for my kids. I used to pay a lot to online tutoring apps but now I stopped." Another explained how the bot became a backup conversational partner in busy moments: "My kids talk to him when I am busy, but I always make sure I'm around and listening. He's a support, not a replacement.", P8. In a particularly novel use case, participants described involving AI in parenting. P6 shared that her daughter trusted Gemini more than her: "She keeps asking, 'Can I talk to Gemini?' She calls it 'him.'" The participant recounted asking the AI to help encourage her daughter to brush her teeth: "It talked about hygiene in ways I would never think of… and she actually listened. She brushed her teeth that day, no problem." Similarly, P9 said she would ask Gen AI to teach her kids English. She said: "I had her [ChatGPT] talk to my 6 year old boy and my 3 year old daughter voice was in the background. She [GhatGPT] caught my little girl's voice and talked to her as well. After a couple of days, I asked her [ChatGPT], 'do you remember my kids?' and she replied with excitement and was ready to start a free, super engaging English lesson with them!"

Though surprised at its effectiveness, P6 also expressed concern: "I don't want her [the daughter, 8 years] to get too attached to it… I'm exploring its uses, but I'm also setting limits. It shouldn't become an essential part of her life." These uses revealed both the emotional trust and practical reliance some parents are beginning to place in Gen AI. Still, while many appreciated the creativity and responsiveness of the bot, a few expressed concerns about overdependence. P6 noted that her children now often prefer asking the AI questions rather than turning to adults, prompting reflection on how early exposure might shape long-term habits or relationships with technology.

Users linguistic tone and behavioral style communicating with Gen AI and factors that shape this style

This section explores how participants characterize their communication tone: formal, playful, emotional, directive, and the personal, and contextual factors that influence these patterns. Participants described a variety of linguistic tones and behavioral styles when communicating with Gen AI, ranging from formal and polite to casual, emotional, and even confrontational. These styles were shaped by both internal factors such as personality and emotional state, and external ones, such as the task at hand or the perceived personality of the Gen AI.

Dominant Tones: Formality, Politeness, and Directness

Many participants [P7, P12, P13] reported defaulting to a formal or respectful tone, particularly in task-based interactions or when they perceived the AI as a professional assistant. P6 described her tone as "always formal, even when I'm upset, I'll say something like, 'please, in the future, don't do this.'" She emphasized that even her frustrations came across in a structured, polite manner: "That's just who I am.". Others also reflected a tendency to use complete sentences, proper phrasing, and polite requests, especially when using the AI for academic, work-related, or technical purposes.

Casual and Playful Communication

In contrast, some users, especially those who viewed AI as more than just a tool, reported using a playful or affectionate tone. P1 shared that she would say things like "aww," "you're the best," or "I love you," particularly when she was tired or emotionally overwhelmed. These expressions

were often spontaneous and reflected a sense of closeness or comfort with the Gen AI. Another participant [P3] noted that her tone with Gen AI was more expressive and emotionally open than with most people: "With bots I'm more playful and open… I can say anything, knowing I won't be judged." These styles emerged especially during moments of emotional vulnerability or boredom, where the AI acted as a casual conversational partner rather than a formal assistant.

Expressing Frustration or Assertiveness

A few participants admitted to using assertive or even critical language when the bot underperformed or annoyed them. P15 shared that she found herself "scolding" the AI after it repeated the same phrase: "It kept saying, 'Is there anything else you want?' and I said, 'Stop asking me that, it's annoying.'" She clarified that she wouldn't say something like that to a real person unless she was truly angry, but with the bot, it felt acceptable. This sentiment was shared by others who said they felt more freedom to be blunt or impatient with the AI, knowing it wouldn't take offense. P9 said: "I think it's not just me, I see memes on Instagram about harassing ChatGPT, I think it's funny that a lot of people are doing the same thing". However, this also led to self-awareness. P2 noted, "I allow myself to act with a bit more attitude than I would with a real person. It's strange, but freeing."

Cultural and Personality Influences

Some participants noted that their own personality shaped how they spoke to AI. P6 said, "That's how I am with everyone. I'm polite, even when I'm mad." Others mentioned they found themselves acting more bold or emotionally raw with AI than with people: "It's easier with AI. There's no agenda. I don't have to worry about how I'm perceived.", P1. Cultural considerations also played a role. For instance, several participants said they preferred to speak in Arabic when discussing religion or emotionally significant topics, noting that certain phrases felt more natural in their native language. P6 said, "When I feel intense emotions, like saying 'Hasbi Allah,' I switch to Arabic. It just feels right."

Shifting Styles Based on Context and Response

Many participants described shifting their tone based on the Gen AI's behavior or the purpose of the interaction. For example, if the AI responded warmly or humorously, users were likely to project that tone. If the bot was perceived as too rigid or distant, users either adjusted their tone to be more direct or gave feedback to prompt more human like responses. P1 explained, "If it feels too robotic, I nudge it to be warmer. I've even said, 'be kind' or 'don't whisper, but keep it soft.'" Another described how she began her conversations formally, but would relax into a casual tone if the bot responded kindly. Task type also influenced tone. For quick questions or summarization tasks, users tended to be brief and directive. But when using AI for emotional support or exploratory discussions, language became more elaborate, emotional, and relational.

Discussion

The qualitative phase of this study offered a nuanced understanding of how users perceive and engage with generative AI, revealing diverse and evolving persona attributions, multifunctional usage, and flexible communication styles. These findings were central to shaping the hypotheses tested in the quantitative phase.

Participants' descriptions of Gen AI as shifting between roles: assistant, friend, and therapist, highlighted the fluidity of perceived personas (RQ1). These identities often emerged not from the AI's technical role, but from users' own emotional states, needs, interaction patterns, and

user generated innovation. Similarly, users employed Gen AI for both instrumental and affective purposes (RQ2), from drafting emails to navigating personal conflict, affirming the AI's dual role as both a productivity enhancer and emotional outlet. The language users adopted (RQ3) further demonstrated a unique blend of playfulness, candidness, and emotional expressiveness, sometimes shaped by the perceived tone and responsiveness of the AI.

These rich qualitative insights directly informed the development of three hypotheses. The observed link between prolonged use and deeper emotional engagement led to Hypothesis 1, which was supported: higher interaction frequency and duration were associated with increased anthropomorphism. Likewise, Hypothesis 2 was supported, confirming that emotional expression through Gen AI predicted higher emotional self-efficacy. However, Hypothesis 3 was not supported, as emotional expression did not predict nor correlate with lower perceived social connectedness, suggesting that Gen AI use may supplement rather than substitute for human relationships. This sequential progression from open ended exploration to theory driven testing reinforces our understanding of the social psychology of AI interaction.

The results provide robust support for the hypotheses concerning Anthropomorphism and Emotional Self-Efficacy, while challenging assumptions about Social Connectedness. H1 was supported, and this finding aligns with the Computers Are Social Actors (CASA) paradigm, which posits that people apply social rules to computers much as they would to humans (Nass, Steuer, & Tauber, 1994). Repeated and extended conversations likely encourage users to perceive the Gen AI as a social entity rather than a tool. This is consistent with anthropomorphism theory: when a technology engages users' social heuristics and needs, users tend to attribute human like qualities and intentions to it. Longitudinal evidence shows that people can form friendship bonds with conversational agents given sufficient interaction time, however, with time such feelings will deteriorate when these bots become predictable (Croes & Antheunis, 2021). But would that be the case with the ever evolving Gen AI tools? H1 result, thus, reinforces existing literature by demonstrating that user engagement level is a key driver of anthropomorphism, supporting the idea that familiarity and immersive interaction breed social presence and perceived human likeness in Gen AI. From a theoretical standpoint, this adds empirical weight to CASA in the context of modern Gen AI and introduces anthropomorphism as a "mindless" but powerful social response to interactive media (Nass & Moon, 2000). Moreover, anthropomorphism has been associated with positive user outcomes such as increased trust and perceived competence of the AI, suggesting that the stronger human like perception resulting from frequent usage could enhance the Gen AI's credibility and relational value to the user, specially that trust was reported as an issue with Gen AI at the time being.

Users who expressed emotions via Gen AI reported higher emotional self-efficacy in digital environments. This implies that emotional disclosure to an AI agent can have beneficial psychological effects, potentially by helping users practice and gain confidence in articulating feelings, especially in digital mediums. Theoretically, this finding resonates with research on online emotional disclosure and support. Gen AI often provide a nonjudgmental, safe space for users to vent and discuss sensitive issues. Notably, people tend to share personal information more freely with machine agents than with humans precisely because AI partners are seen as impartial and noncritical listeners. The online disinhibition effect (Suler, 2004) may be at play here. Anonymity and lack of perceived social judgment lower users' inhibitions, enabling them to open up emotionally. The results of this research align with evidence that the recognition of a conversational partner as "not human" can increase user trust and comfort, leading to greater self-disclosure without fear of being judged. Such unfettered emotional expression can in turn

enhance one's self-efficacy in managing emotions. When users successfully communicate their feelings and perhaps receive empathetic feedback from the Gen AI, they experience a sense of mastery in digital emotional communication. The finding is in line with a large-scale survey by Zou et al. (2025) which found that individuals' emotional involvement with bots was associated with improved emotional self-efficacy.

Using Gen AI for emotional purposes did not significantly predict lower perceived social connectedness. Initially, one might expect that relying on AI for socioemotional needs could isolate users from human relationships. However, the findings suggest no such detrimental effect on users' sense of social connection. This result contributes to the nuanced debate on whether digital companionship complements or competes with human social ties. It appears that emotional Gen AI use, at least in this sample, functions more as a supplement to users' social life than a replacement. In fact, some theoretical perspectives and emerging evidence support this optimistic view. The "social surrogacy" and parasocial interaction frameworks indicate that people can derive real feelings of companionship from media figures or AI without forsaking human bonds (Derrick, Gabriel, & Hugenberg, 2009). Consistent with this, communication technologies like Gen AI chatbots can offer companionship and support to lonely individuals. Merrill Jr. et al. (2025) showed that when a chatbot conveys empathy in a human similar manner, it can reduce users' loneliness and anxiety by simulating the experience of genuine social connection. Likewise, Chin et al. (2023) found that users readily express vulnerable emotions to Gen AI and view them as safe, nonjudgmental confidants that help mitigate negative moods. On the contrary, the lack of a significance in H3 suggests that Gen AI emotional support can be integrated into one's social world without harming overall social wellbeing. That said, it is important to acknowledge contrasting findings in the literature. Some studies have reported user concerns that Gen AI might diminish human connection or emotional support (Al-Zahrani, 2025), especially in settings like education where interpersonal relationships are valued. These concerns insinuate that the impact of Gen AI on social life may depend on context, user perceptions, and the fact that it is still evolving. Nonetheless, this study's results provide encouraging evidence that using a Gen AI as an emotional outlet is not isolating in and of itself.

Implications for Design and Ethics

The findings offer guidance for designing and deploying Gen AI, especially those intended for emotionally supportive roles. First, to build on the link between interaction and anthropomorphism, designers should consider features that encourage sustained, frequent engagement. A Gen AI that remembers past conversations, exhibits a consistent personality, or uses humanlike conversational cues such as empathy, humor, or a relatable persona, may strengthen the user's perception of it as a social partner, though privacy and data storage would be another concern. Prior research shows that even subtle social cues can make technologies more personable (Nass & Moon, 2000) and that anthropomorphic design elements can increase user trust. However, designers must balance anthropomorphism with user expectations; transparency about the bot's limitations is crucial to avoid overinflated expectations. Second, H2 result suggests Gen AI could be explicitly engineered to support emotional expression and build users' confidence in that realm. Design features like prompts that invite users to share their feelings, active listening responses such as compassionate tones and acknowledgements, and adaptive encouragement in difficult moments can create an atmosphere of emotional safety. Research by Lucas et al. (2014) and others found that when users perceive AI as empathetic and free of judgment, they tend to open up more readily. As such, designing Gen AI interactions to include emotionally supportive language such as affirming the user's feelings and showing

compassionate responses, can encourage deeper personal disclosure.

As Gen AI become more emotionally embedded in users' lives, the boundary between "tool" and "relationship" becomes blurry. This raises ethical questions about trust, dependency, and emotional manipulation. There are also implications for education and parenting. As some participants noted, their children viewed Gen AI as trusted advisors or "friends." While this opens up opportunities for learning support, it also raises concerns about early emotional attachment to nonhuman entities and the need for parental guidance in digital environments.

Limitations

This study is limited by the small sample of the qualitative study. Although 15 participants reported interesting results where a saturation was reached, having a larger sample will reveal more diverse results. The survey yields self-reported data that is inherently subject to errors and mistakes.

Conclusion

This study contributes to the growing body of research on human to AI interaction by examining how users perceive, engage with, and emotionally respond to generative AI systems. Through a mixed methods approach combining qualitative interviews and a large-scale survey, the research highlights the complex and evolving ways users attribute personas to Gen AI, ranging from functional assistants to emotionally supportive companions. These assigned personas were shown to shape the depth and tone of engagement, influencing both how users communicate with AI and what roles they allow it to fulfil in their lives. The findings offer empirical support for the link between usage patterns and anthropomorphism, suggesting that more frequent and prolonged interactions foster humanlike perceptions of AI. Emotional expression through Gen AI was also associated with increased emotional self-efficacy in digital contexts, indicating that such tools may play a supportive role in users' emotional regulation and self-perception. However, contrary to expectations, emotional expression via Gen AI did not diminish users' perceived social connectedness, challenging the assumption that AI-mediated interactions substitute for human relationships. Furthermore, users' linguistic and behavioural styles were shaped by both functional and affective factors, with many adopting informal, conversational tones in response to perceived AI warmth and intelligence. These insights carry significant implications for the design of Gen AI systems that are socially responsive, ethically sound, and psychologically attuned to users' needs. As AI technologies continue to permeate daily life, understanding the nuances of user experience is essential for shaping future developments that promote both utility and wellbeing.

References

Howell, S. (2024, January 19). From Google to ChatGPT: Navigating the shift in digital information paradigm. Medium. https://medium.com/@Stephen-Howell/from-google-to-chatgpt-navigating-the-shift-in-digital-information-paradigm-6876a1f025d7

Google. (n.d.). Join the Public Preview for Google Nest devices. Google Nest Help. https://support.google.com/googlenest/answer/12494697?hl=en

Statista. (2025). Generative AI—Worldwide outlook. Retrieved July 1, 2025, from https://www.statista.com/outlook/tmo/artificial-intelligence/generative-ai/worldwide

Ding, L., Lawson, C., & Shapira, P. (2024, December 30). Rise of generative artificial intelligence in science (arXiv:2412.20960). arXiv. https://doi.org/10.48550/arXiv.2412.20960

Eke, D. O. (2023). ChatGPT and the rise of generative AI: Threat to academic integrity? Journal of

Responsible Technology, 13, Article 100060. https://doi.org/10.1016/j.jrt.2023.100060
Wohn, D. Y., & Almoqbel, M. (2023). AI-integrated communication: conceptualization and a critical review. Research Handbook on Artificial Intelligence and Communication, 29-43.
Williams, A., Hatfield, D., & Rawal, B. S. (2025, May). Artificial Intelligence Evolution: The Rise. In The 22nd International Conference on Information Technology-New Generations (ITNG 2025) (p. 418). Springer Nature.
Williams, A., Hatfield, D., & Rawal, B. S. (2025, May). Artificial intelligence evolution: The rise. In A. A. El-Sharkawi, M. T. Manry, & H. R. Arabnia (Eds.), Proceedings of the 22nd International Conference on Information Technology – New Generations (ITNG 2025) (p. 418). Springer Nature.
Mudrinić, D., & Šoda, I. (2024, November). The Rise of Generative Artificial Intelligence in Business. In 2024 IEEE 17th International Scientific Conference on Informatics (Informatics) (pp. 493-498). IEEE.
Orchard, T., & Tasiemski, L. (2023). The rise of generative AI and possible effects on the economy. Economics and Business Review, 9(2), 9–26.
Holzinger, A., Kargl, M., Kipperer, B., Regitnig, P., Plass, M., & Müller, H. (2022). Personas for artificial intelligence (AI) an open source toolbox. IEEE Access, 10, 23732-23747.
Benharrak, K., Zindulka, T., Lehmann, F., Heuer, H., & Buschek, D. (2024, May). Writer-defined AI personas for on-demand feedback generation. In Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (pp. 1-18).
Karimova, G. Z. (2025). Creating AI Persona. In Humanizing AI with Personality (pp. 49-59). Cham: Springer Nature Switzerland.
Waytz, A., Cacioppo, J. T., & Epley, N. (2010). Who sees human? The stability and importance of individual differences in anthropomorphism. Perspectives on Psychological Science, 5(3), 219–232. https://doi.org/10.1177/1745691610369336
Caprara, G. V. (2001). La valutazione dell'autoefficacia.(self-efficacy assessment).
Lee, R. M., Draper, M., & Lee, S. (2001). Social Connectedness Scale–Revised [Database record]. American Psychological Association PsycTests. https://youthrex.com/wp-content/uploads/2019/10/The-Social-Connectedness-Scale-Revised.pdf
Cai, N., Gao, S., & Yan, J. (2024). How the communication style of chatbots influences consumers' satisfaction, trust, and engagement in the context of service failure. Humanities and Social Sciences Communications, 11(1), 1-11.
Chen, Z., Zhao, X., Hua, M., & Xu, J. (2024, June). Building bonds through bytes: the impact of communication styles on patient-chatbot relationships and treatment adherence in ai-driven healthcare. In International Conference on Human-Computer Interaction (pp. 32-52). Cham: Springer Nature Switzerland.
Chen, Z., Zhao, X., Hua, M., & Xu, J. (2024, June). Building bonds through bytes: the impact of communication styles on patient-chatbot relationships and treatment adherence in ai-driven healthcare. In International Conference on Human-Computer Interaction (pp. 32-52). Cham: Springer Nature Switzerland.
Zhou, A., Tsai, W. H. S., & Men, L. R. (2024). Optimizing AI social chatbots for relational outcomes: the effects of profile design, communication strategies, and message framing. International Journal of Business Communication, 23294884241229223.
Janson, A. (2023). How to leverage anthropomorphism for chatbot service interfaces: The interplay of communication style and personification. Computers in Human Behavior, 149, 107954.
Zou, W., Liu, Z., & Lin, C. (2025). The influence of individuals' emotional involvement and perceived roles of AI chatbots on emotional self-efficacy. Information, Communication & Society

https://mediawell.ssrc.org/citations/the-influence-of-individuals-emotional-involvement-and-perceived-roles-of-ai-chatbots-on-emotional-self-efficacy

Yu, Q., & Lan, X. (2024). Exploring the impact of anthropomorphism in role-playing AI chatbots on media dependency: A case study of Xuanhe AI (arXiv preprint arXiv:2411.17157). https://arxiv.org/abs/2411.17157

Herbener, A. B., & Damholdt, M. F. (2024). Are lonely youngsters turning to chatbots for companionship? The relationship between chatbot usage and social connectedness in Danish high-school students (SSRN Scholarly Paper No. 4801345). SSRN. https://doi.org/10.2139/ssrn.4801345

Liu, W., Jiang, M., Li, W., & Mou, J. (2024). How does the anthropomorphism of AI chatbots facilitate users' reuse intention in online health consultation services? The moderating role of disease severity. Technological Forecasting & Social Change, 203. https://doi.org/10.1016/j.techfore.2024.123407

Hill, J., Ford, W. R., & Farreras, I. G. (2015). Real conversations with artificial intelligence: A comparison between human–human online conversations and human–chatbot conversations. Computers in human behavior, 49, 245-250.

Locsin, R. C., Soriano, G. P., Juntasopeepun, P., Kunaviktikul, W., & Evangelista, L. S. (2021). Social transformation and social isolation of older adults: Digital technologies, nursing, healthcare. Collegian, 28(5), 551–558. https://doi.org/10.1016/j.colegn.2021.01.005

Crowell, C. R., Deska, J. C., Villano, M., Zenk, J., & Roddy Jr, J. T. (2019). Anthropomorphism of robots: study of appearance and agency. JMIR human factors, 6(2), e12629.

Caporael, L. R. (1986). Anthropomorphism and mechanomorphism: Two faces of the human machine. Computers in human behavior, 2(3), 215-234.

Nass, C., Steuer, J., & Tauber, E. R. (1994, April). Computers are social actors. In Proceedings of the SIGCHI conference on Human factors in computing systems (pp. 72-78).

Croes, E. A., & Antheunis, M. L. (2021). Can we be friends with Mitsuku? A longitudinal study on the process of relationship formation between humans and a social chatbot. Journal of Social and Personal Relationships, 38(1), 279-300.

Nass, C., & Moon, Y. (2000). Machines and mindlessness: Social responses to computers. Journal of social issues, 56(1), 81-103.

Suler, J. (2004). The online disinhibition effect. Cyberpsychology & behavior, 7(3), 321-326.

Merrill Jr, K., Mikkilineni, S. D., & Dehnert, M. (2025). Artificial intelligence chatbots as a source of virtual social support: Implications for loneliness and anxiety management. Annals of the New York Academy of Sciences. Advance online publication. https://doi.org/10.1111/nyas.15400

Derrick, J. L., Gabriel, S., & Hugenberg, K. (2009). Social surrogacy: How favored television programs provide the experience of belonging. Journal of Experimental Social Psychology, 45(2), 352-362.

Chin, H., Song, H., Baek, G., Shin, M., Jung, C., Cha, M., ... & Cha, C. (2023). The potential of chatbots for emotional support and promoting mental well-being in different cultures: mixed methods study. Journal of Medical Internet Research, 25, e51712.

Al-Zahrani, A. M. (2025). Exploring the impact of artificial intelligence chatbots on human connection and emotional support among higher education students. SAGE Open, 15(2), 1–11. https://doi.org/10.1177/21582440251340615

Lucas, G. M., Gratch, J., King, A., & Morency, L. P. (2014). It's only a computer: Virtual humans increase willingness to disclose. Computers in Human Behavior, 37, 94-100.

Waytz, A., Heafner, J., & Epley, N. (2014). The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle. Journal of experimental social psychology, 52, 113-117.

Bickmore, T. W., & Picard, R. W. (2005). Establishing and maintaining long-term human-computer relationships. ACM Transactions on Computer-Human Interaction (TOCHI), 12(2), 293-327.

Almoqbel, M., & Alkhlewi, A. (2024). Chatting with AI: Investigating Snapchat Users' Engagement with Bots and Its Privacy Implications.

Cai, J., Wohn, D. Y., & Almoqbel, M. (2021, June). Moderation visibility: Mapping the strategies of volunteer moderators in live streaming micro communities. In Proceedings of the 2021 ACM International Conference on Interactive Media Experiences (pp. 61-72).

Adamopoulou, E., & Moussiades, L. (2020). Chatbots: History, technology, and applications. Machine Learning with applications, 2, 100006.