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## Navigating Interaction with AI chatbots: Sociolinguistic and Pragmatic Aspects of Chatbot Use by Slovak and Hungarian Speakers

Klaudia Paulikova\*

*J. Selye University*

*Komárno, Slovak Republic*

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**Abstract.** This study investigates the dynamics of interaction between native Slovak and Hungarian speakers (n=216) with AI chatbots from a sociolinguistic and pragmatic perspective. The research employs a mix-method questionnaire and assesses speakers' perceptions and preferences in terms of language choices, levels of formality, and tone during interactions with AI chatbots. It also draws attention to conversational and politeness strategies, as well as dealing with miscommunications and errors. The findings reveal that the choice of users' language is linked to their communicative goals and tasks, with a neutral and formal tone prevailing in their interactions with chatbots. The respondents generally consider chatbots as capable of understanding messages well and employ rephrasing and prompt simplifying most frequently to avoid miscommunication. The general level of politeness among respondents is reported important and high with politeness expressions used quite frequently. Conversely, the participants report neglecting the use of emojis and point out using politeness expressions out of habit and with the endeavor to maintain a respectful tone. The findings indicate that users primarily view interactions with chatbots as functional, placing a higher value on communication efficiency than on cultural or emotional exchanges, as well as on informal and friendly discourse. Although users generally demonstrate a high level of politeness towards chatbots, it is assumed that the use of polite expressions stems more from habitual behavior and cultural influence than from a conscious effort to enhance communication with these systems.

**Keywords:** AI, chatbot interaction, sociolinguistics, pragmatics, language use.

Research area: Applied Cultural Linguistics.

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## Социолингвистические и прагматические аспекты использования чат-ботов носителями словацкого и венгерского языков

К. Пауликова

Университет имени Яноша Шейе

Словацкая Республика, Комарно

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**Аннотация.** В данной статье изучается динамика взаимодействия носителей словацкого и венгерского языков (n=216) с ИИ чат-ботами с социолингвистической и прагматической точек зрения. В исследовании используется анкета, составленная по смешанному методу, и оцениваются восприятие и предпочтения говорящих в плане выбора языка, уровня формальности и тона во время взаимодействия с ИИ чат-ботами. Статья также анализирует разговорные стратегии и стратегии вежливости, а также способы устранения недопонимания и ошибок. Результаты исследования показывают, что выбор языка пользователей связан с их коммуникативными целями и задачами, в общении с чат-ботами преобладает нейтральный и формальный тон. Респонденты в целом считают чат-ботов способными хорошо понимать сообщения и чаще всего используют перефразирование и упрощение подсказок, чтобы избежать недопонимания. Общий уровень вежливости среди респондентов считается важным и высоким, вежливые выражения используются довольно часто. И, наоборот, участники исследования сообщают, что пренебрегают использованием эмодзи, и отмечают, что используют выражения вежливости по привычке, стремясь сохранить уважительный тон. Исследование показало, что пользователи рассматривают взаимодействие с чат-ботами в первую очередь как функциональное, придавая большее значение эффективности общения, чем культурному или эмоциональному обмену, а также неформальному и дружескому дискурсу. Несмотря на то что пользователи в целом демонстрируют высокий уровень вежливости по отношению к чат-ботам, предполагается, что использование вежливых выражений обусловлено скорее привычным поведением и культурным влиянием, чем сознательными усилиями по улучшению коммуникации с этими системами.

**Ключевые слова:** ИИ, взаимодействие с чат-ботами, социолингвистика, прагматика, использование языка.

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### Introduction

The past several years have been witnessing an escalating interest in Artificial Intelligence (AI) and chatbots, which have become part of our everyday life in various areas due to their

countless benefits and possibilities of use. AI has paved the way for the innovation of complex applications and devices that are capable of carrying out numerous tasks, including the innovation of the AI-based chatbots, which utilize

Natural Language Processing (NLP) models to facilitate communication with humans and other chatbots (Adamopoulou and Moussiades 2020). Being rooted in computer-mediated communication (CMC) (Hill, Ford, and Farreras, 2015), AI chatbots have been providing far reaching assistance in customer services, e-commerce, medical sector, financial sector, online shopping, or education (Pérez, 2020; Lee and Chan, 2024).

Chatbots are characteristically referred to as having been designed to engage in conversations via various means, providing intelligent responses in natural language while interacting with users on specific topics (Azwary, Indriani, and Nugrahadi, 2016). In particular, AI chatbots analyze the messages received from users, comprehend their intent, and subsequently, provide appropriate responses. Users typically interact with chatbots by asking questions, giving prompts, or making comments, to which the chatbots reply with answers, remarks or the introduction of alternative subjects (Huang, Zhou, and Yang, 2007).

Practice has shown that it is crucial for chatbots to possess communication skills that are similar to those of humans, as they assist in building trust in chatbots and enhance their credibility (Lee and Chan, 2024). These can be built by positive experience including efficient interactions, easy navigation, and simple interface (Song, Xing and Mou, 2022), developing emotional connection with users (Liu et. al., 2023), or by meeting or exceeding users' expectations (Jenneboer, Herrando, and Constantinides, 2023). Research however, for instance conducted by Pokrivcakova (2022), shows that users working with chatbots perceive several deficiencies in the interaction, namely recurring miscommunications, chatbots' limited memory capacity, and challenges in grasping more complex linguistic nuances, such as irony and idioms. Hence, there has been an increasing emphasis on the need for examining sociolinguistics and pragmatics in relation to human-chatbot interactions. Grounding chatbot interactions in linguistic theory are viewed as crucial, as there is a particular need for chatbots to employ and comprehend contextual factors such as politeness, cultural norms, or conversational implicatures. These are seen to

improve chatbots' conversational effectiveness and overall user acceptance and satisfaction (Dall'Acqua and Tamburini, 2021; Dippold, 2024).

### 1. Theoretical framework

There is no doubt that sociolinguistics and pragmatics possess an important role in framing the contextual factors users communicate in with others, and the interaction with chatbots is no exception. Narrowing terminology, the notion of *pragmatics* is commonly connected with Charles W. Morris (1938), who was the first to propose a connection between signs, interprets, and objects in terms of a pragmatic dimension. Fundamentally, pragmatics is defined as the investigation of the relationship between signs and their meanings (Ostman and Verschueren, 2009), or as the analysis of meaning in context and application (Jenney, 1995). Since its formation, pragmatics has risen as a significant interdisciplinary field within linguistics, prompting scholars to investigate it in depth. Crystal (2008) offers a comprehensive definition of pragmatics, describing it as the study of language from the users' perspective, particularly regarding their communication, social interactions, and the constraints they come across. Various societal limitations can significantly impact our language use, affecting both our linguistic choices and our understanding of language. Specifically, by distinguishing between sociopragmatics and pragmalinguistics (Leech, 1983), we can better understand how language use is influenced by social norms (including etiquette, appropriateness, and taboos) and how pragmatic and linguistic forms interact (Brown, 2007). The field of pragmatics is connected to how language is used in communicative contexts. Since communication naturally involves two participants at minimum, the main emphasis of pragmatics lies in "language use and language users in interaction" (Bublitz and Norrick, 2011:4), which address this dimension in the means of verbal exchanges, such as dialogue, or conversation.

*Sociolinguistics* deals with the relationship between language and the social and cultural dimensions of human life. Although the term itself was first coined by Cuerrie in 1952

(Cuerrie, 1952), Ismatulleva, Filimonova, and Rustamovich (2022) note that the foundational concepts connecting language to society had been introduced several years earlier. Scholars argued that the limitations of structuralist and generative approaches to language did not acknowledge the important role of social factors in language use. Thus, a discipline synthesizing knowledge from linguistic anthropology, ethnography and sociology emerged. To define sociolinguistics, it is viewed as the analysis of language in the context of social interactions and the means by which it is influenced by social, cultural, and contextual factors (Verhoeven, 2017), or the exploration of the complex relationship between language and society, especially as perceived by an average individual (Svendsen, 2018).

Everyday communication of humans happens on several levels if taking sociolinguistics and pragmatics into account. The choice of language in utterances is an indicator of one's cultural background, social identity, and the specifics of the context in which communication occurs. Results of different studies show that language functions as both a practical and symbolic tool, which helps users to express and negotiate their identities across various levels including personal, social, ethnic, or national ones (Coulmas, 2013). In numerous settings, where bilingualism and multilingualism, i.e. switching between different languages to adapt to social expectations or to communicate individual ideas is present, code-switching as a fundamental concept within sociolinguistics occurs. A study conducted by Luring (2008) suggests that such utilization of language in bilingual and multilingual contexts, among others, also serves as a reflection of one's identity. Finnis (2014) provided research focusing on Greek-Cypriot communities and demonstrated that communication styles among individuals differ based on their social roles and the expectations prevalent within their community. Likewise, Yim and Clement (2021) point out that the attitudes of users towards code-switching are influenced by the processes of acculturation, proclaiming that a supportive linguistic context promotes positive attitudes towards code-switching as an indicator of cul-

tural identity. In communication with chatbots, therefore, it is crucial to integrate norms that naturally occur in human-to-human interactions, as these improve relational capacity and enrich user engagement (Zhang et al., 2020). For this reason, researchers find it important to analyze patterns from longitudinal human-to-human conversations while incorporating theories from interpersonal communication along with the latest studies in human-AI interaction (Mou and Xu, 2017; Hanckock et al., 2020).

Politeness strategies, formality, and tone are also important, as they are deeply rooted in social norms and cultural contexts and are influential in terms of how messages are conveyed and interpreted. The level of formality and tone considerably influences communication in different social settings and its efficiency. According to Halliday (1978), the higher the degree of formality in language, the more complex syntax and specialized vocabulary are used, which are particularly applicable in academic, legal, or professional contexts. In contrast to formal language, informal language is characterized by the use of contractions, colloquial language, and simpler sentence structure. This, according to the author, encourages more personal and relaxed interactions. Holmes (2013) further elaborates on this idea by investigating the relational dimensions of tone. He suggests that speakers either consciously or subconsciously modify their tone in order to express politeness, familiarity, or assertiveness on the basis of social conventions and the demands of the communicative situation. When it comes to chatbot interactions, formality and tone are equally important, as they affect how users perceive chatbots' credibility and effectiveness. According to a meta-analysis conducted by Wu and Yu (2023) in the field of learning, AI chatbots' personalization and interactivity features can significantly improve learning outcomes, meaning that a warm and inviting tone of chatbots may foster better user engagement. As stated by Hill et al. (2015), users have the tendency to modify their level of formality in accordance with the objective of the chatbot. As an illustration, the authors state that chatbots providing technical support gen-

erally get more formal questions than those that are designed for casual conversations.

Politeness strategies also play an important role in forming communication from a social and pragmatic viewpoint. Brown and Levinson (1987) state that politeness strategies represent ways in which users navigate social interactions with the aim of preserving harmony and avoiding conflict. Such strategies are divided into positive politeness and negative politeness strategies, out of which the former aim to build solidarity and rapport through friendly or interested expressions, whereas the latter emphasize respect and aim to reduce imposition. Research (Holmes, 1995) indicates that the choice of a specific strategy is often subjective to cultural norms, the nature of the relationship among the speakers, and contextual factors. In conversations between individuals, as Brown and Levinson (1987) further state, politeness serves to facilitate interactions that may cause inconvenience or require sensitivity towards the conversation partner. Provided that politeness is expressed likewise in interactions with chatbots, Bowman et. al. (2024) claim that it could be integrated into dialogue design to enhance user engagement during potentially sensitive or inconvenient exchanges.

Although there is a developing field of research focused on polite conversational interactions (Bowman et. al., 2024), the perception of politeness by users in chatbot interactions remains rather uncertain. The field of sociolinguistics and pragmatics concerning chatbot interactions is still in its developing phases, and even though several scholars have endeavored to investigate it, such as through conversation analysis (Monteiro et al., 2023), the relationship between chatbot politeness and mental health support (Bowman et al., 2024), or the inquiries about good prompts to improve conversational experiences (Wang et al., 2024), a significant deficiency in the area is still persistent. Additionally, there is a lack of research on whether users themselves actively use politeness strategies in their interactions with chatbots, and whether their levels of formality and tone shift depending on different cultural or communicative contexts. Despite the fact that considerable advancement has been achieved in

understanding the ways in which individuals utilize language within different social and cultural settings in human-to-human interactions, the translation of these insights into human-machine communication remains unexamined.

## 2. Statement of the problem

Despite the fact that the use of AI chatbots has been continually growing in various linguistic and cultural contexts, a notable lack in research linked to the ways in which sociolinguistic and pragmatic factors shape user interaction with AI technologies is still persistent. Looking at communication between users and chatbots from this perspective, the exchanges are not solely functional in their nature, as they carry cultural and social implications reflecting users' identity, language preferences, politeness strategies, and situational choices. A noteworthy challenge is to understand how speakers of various languages, such as those fluent in Slovak and Hungarian for instance, navigate their language use in these contexts. Since Slovak and Hungarian speakers represent a distinct linguistic and cultural identity, the dynamics that manage aspects of formality, politeness, and conversational strategies in their exchanges with chatbots do not necessarily have to be the same as of speakers of other languages. These aspects are not yet well understood and have not been researched in detail and depth. This study aims to report this deficiency by investigating the manifestation of sociolinguistic and pragmatic means in users' choices regarding their interaction with chatbots. The study addresses the interaction style between users and chatbots, users' language choices, politeness factors, as well as the use of culturally specific phrases and regional expressions.

## 3. Methods

A mix-method questionnaire was used as a method of data collection with the aim of analyzing the interaction patterns of native Slovak and Hungarian speakers with AI chatbots from a sociolinguistic and pragmatic perspective. The research assessed participants' language choices, the degrees of formality that they employed, and their conversational strategies,

while also investigating whether there was any influence of cultural and contextual factors on their interaction styles. The following research questions were formed to in order to fulfil the aim of our study:

**RQ1:** *How do Slovak and Hungarian users vary their language choices, formality, and tone when interacting with AI chatbots?*

**RQ2:** *What conversational and politeness strategies do Slovak and Hungarian users adopt to manage interactions with chatbots, and how do they address miscommunication?*

The questionnaire was disseminated on four online platforms in November, 2024. Altogether 216 responses were collected from participants via convenience sampling, which ensured accessibility to the study and practical and easy enrollment in the questionnaire. The study included residents from Slovakia and Hungary with different levels of experience in chatbot interaction. Demographically, 78 % of the respondents belonged to the Generation Z age group (1997–2012), 16 % to the Millennials (1980–1996), and 6 % to those born before 1980. The respondents' English language proficiency was marked Upper-Intermediate by 51 %, Advanced by 22 %, Intermediate by 23 % and Elementary by 4 %. They marked Hungarian as their mother tongue most frequently (80 %), whereas Slovak was selected by 13 %, and both Slovak and Hungarian (bilingual users) by 7 %. Participation in the questionnaire was voluntary and anonymous and the respondents were informed about the purposes of the study. For a better overview and easier interpretation, the percentages in both the method and the discussion section were rounded to the nearest whole number.

#### 4. Discussion

The sociolinguistic section of the questionnaire aimed at investigating participants' insights into the frequency of chatbot use as well as language choices, code-switching, formality and tone, and the use of culturally specific phrases. For the frequency of interacting with chatbots, the majority of the respondents

retorted using chatbots either weekly or daily (70 %), whereas the rest admitted monthly or rare use. The most common purposes of use were noted as learning (78 %), information retrieval (61 %), task assistance (28 %), entertainment (15 %), emotional support (10 %), or teaching and research (2 %). What is interesting, however, that based on previous research (for instance Kubiak, 2013; O'Brien et al., 2012; Nikou, 2015), users' age is directly connected to the frequency of use of technologies, i.e. the younger the generation, the more often, free, and comfortable the technology use. In case of the present study, there was no significance between the age of the participants and the frequency of chatbot use found.

The findings also revealed that a large majority of the respondents reported using English (85 %) and Hungarian (60 %) in their chatbot interactions most frequently. Among the other languages, Slovak (11 %), German (2 %) and Spanish (2 %) were also mentioned. The data suggested a correlation between respondents' proficiency in English and their engagement in chatbot interaction using multiple languages. Participants, who marked their English proficiency to Advanced or Upper-intermediate, showed more tendencies to code-switching, especially between their mother tongue and English during their interactions. The respondents also noted that the choice of their language is merely dependent on the task or purpose of their interaction. In numbers, 38 % of the respondents always and 47 % sometimes take these into account, whereas only 15 % stated that language choice is rarely or never a question of the above.

Regarding formality and tone in communicating with chatbots, participants' answers revealed a diverse range of preferences. The majority showed a tendency towards using neutral (53 %) or formal (23 %) language most frequently. Informal language, on the other hand, was identified by 18 % of the respondents. Their choice of formality was, however, not linked to specific communicative situations, as several conditions where participants would potentially feel more comfortable using informal language were recorded. Among these, casual inquiries involving humor and

small talk (28 %), general communicative situations (28 %), and requests for information such as facts or directions (30 %) were all considered equally appropriate. There was only a small fraction of respondents (6 %) claiming that regardless of the communicative context, their choice of language would remain formal in all situations. In their interactions with the chatbots, respondents recorded adapting their language for the chatbot to understand better in quite a big percentage. Twenty percent noted that they adapt their language often, 47 % occasionally, and only 29 % noted rare or no adapting. Adapting language in chatbot interaction, however, has quite notable benefits, as studies by Izadi and Forouzanfar (2024) and Huang et al. (2022) demonstrate. Moreover, data offered by Spillner and Wenig (2021) emphasize the importance of considering linguistic alignment in human-chatbot interactions, as it is essential for ensuring effective communication and can offer significant advantages for enhancing user interaction. Therefore, on the basis of these we could assume that the more language adaptation users employ in their interactions with chatbots, the more sophisticated, adequate and accurate the responses will be.

Cultural identity, based on our results, seems not to have significant impact on the ways how respondents interact with chatbots. Their answers, for instance, indicate that when interacting with chatbots in English, regardless of their native language, there is no influence on language identity (75 %), or just very minor (8 %). Only 9 % of the respondents recorded either subtle or significant influence. Based on their answers, these users feel less Hungarian or Slovak when using chatbots in other than their mother tongue. Culturally specific phrases, in correlation to the previous findings, were in most cases regarded never (32 %), rarely (31 %), and occasionally (31 %) used. Only a small percentage of respondents stated that they use such phrases often. These findings correlate with the use of formality and tone in chatbot interactions and suggest that interactions with chatbots do not strongly alter users' perceptions of their national identity and culture. Likewise, we assume that the small influence observed could be due to the desire of

users to maintain neutral and non-personalized nature of interactions, supporting the idea that users may prioritize efficiency over cultural expressions and informal, friendly language in their interactions with chatbots.

In the pragmatic section of the questionnaire, we inquired about miscommunication, politeness strategies as used by the respondents, as well as the communication strategies employed by chatbots. The participants' majority indicated that they most often engage with the chatbots by asking questions or giving prompts directly, accounting 48 % of the overall responses. Greeting the chatbots in the first place was also a common answer, with 39 % of respondents selecting this option. Only a small percentage of the participants opted for customizing the setting of the AI, and 11 % showed preference to explaining their content first. Regarding self-perception of politeness, respondents regarded themselves as very polite (17 %) and 38 % identified as polite in their interactions with chatbots. In contrast, almost the third (28 %) perceived themselves as neutral in their conversations. Furthermore, 17 % did not find it important to be polite, and they marked being casual (14 %) and impolite (3 %) in their responses. The frequency of use of politeness phrases such as 'please' or 'thank you' when communicating with chatbots was generally evaluated as positive with over half of the respondents using politeness phrases at all times (36 %), or very frequently (18 %). Additionally, 21 % reported using these as an occasional occurrence, and 17 % claimed to use politeness phrases rarely. Notably, there were 8 % who admitted not using any politeness phrases, at all. Remarkably, aligned with our previous findings, the use of emojis in chatbot interaction was viewed as unimportant with 72 % of respondents never using them, or using them very rarely (13 %). Only a small amount reported occasional (8 %) or frequent (7 %) use. The respondents elaborated on the potential use of politeness phrases in terms of maintaining a respectful tone (44 %), out of habit (36 %), and in an endeavor to make the robot more human-like (14 %). These results indicate that a significant number of participants regard themselves as either polite or very polite in their chatbot

interactions. This, as we assume, is rooted in habitual behavior and the endeavor to maintain a respectful tone much rather than being driven by necessity. Also, the frequency of use of politeness phrases as opposed to the lacking use of emojis suggests that the communication with chatbots is rather functional than emotionally driven, which is, according to Boutet et al. (2021) very often different in human-to-human interactions.

In dealing with miscommunications from the chatbots' perspective, the majority of respondents did not report encountering difficulties in chatbots understanding their messages, language, style, and tone. The findings indicated that 11 % of the participants claimed that chatbots always comprehend their messages, while 41 % reported being understood frequently, and 25 % noted being understood occasionally. There was, however, a considerable percentage of participants, 23 % in numbers, who reported experiencing substantial or critical challenges with chatbots' ability to understand messages. In proposed situations when a chatbot fails to understand the question or makes an error, most respondents reported either repeating the question or prompt in different words (58 %) or simplifying the question (38 %). Only a negligible percentage answered that they would stop using the chatbot immediately (3 %) or switch to a different language (1 %). The participants' opinions on the need of instructing chatbots in cases of miscommunications and errors were somewhat mixed. Over the half of the respondents exhibited a favourable attitude towards the issue, out of which 6 % claimed that they always employ strategies of explanations as if the chatbot was a human, 14 % often do so, and 40 % acknowledge occasional teaching and explanation. On the other hand, 22 % of the respondents rarely employ such strategies and 18 % consider them completely useless and ineffective. In correlation with this, the respondents' majority reported that chatbots they communicate with are very polite (44 %) and polite (33 %), whereas only 19 % demonstrated a neutral language from chatbots and a very small number considered chatbots very impolite (1 %). Some participants could not answer the question. This proposes an

assumption that users generally perceive chatbots as effective in understanding their prompts and resolving errors and miscommunications is mostly approached from a pragmatic perspective, in which they prioritize functional communication over deeper engagement in relational interactions.

## 5. Conclusion

This study investigated native Slovak and Hungarian speakers and their interaction with AI chatbots. The main aim of the study was to examine the interaction patterns of these speakers with chatbots through a sociolinguistic and pragmatic perspective. The research evaluated their language choices, levels of formality, and tone during interactions with AI chatbots. It also focused on conversational and politeness strategies, namely how these users navigate their interactions with chatbots, and how do they handle occurrences of miscommunication.

Our research indicated that the choice of respondents' language was closely connected to the communicative objectives or tasks, with users having higher proficiency levels more prone to changing between languages in their interactions. In terms of formality and tone, the findings revealed that a neutral tone (53 %) and formal tone (23 %) dominated among the respondents, and informality was rather dependent on the communicative context. Respondents showed tendencies towards adapting their language for the chatbots to understand messages better, which would facilitate easier and more effective interactions. On the other hand, cultural identity was not found to have great impact on users, as 75 % of them reported no influence on their language identity when interacting with chatbots in English. Also, rarely used were culturally specific phrases among the participants.

Regardless of these, respondents considered politeness important in their interactions, with 55 % identifying as either polite or very polite with chatbots. Politeness phrases were also evaluated as attractive, whereas the use of emojis was rather neglected by users. In overall communication, respondents generally considered chatbots as capable of under-



standing their messages well, although 23 % reported encountering significant difficulties. Users mostly agreed to adapt their language to ensure that the chatbot understands, with over 67 % doing so either occasionally, or often. For dealing with miscommunications, respondents most often reported using rephrasing and simplifying prompts. These data suggest that users perceive chatbot interactions mainly as functional and prioritize efficiency in communication over cultural and emotional conversations, as well as over informal and friendly language. While the general level of politeness exhibited towards chatbots has been reported as high, we believe that the use of politeness expressions is more a matter of habit and cultural influence rather than a deliberate action undertaken for communicative purposes with chatbots.

## 6. Limitations and future directions

To achieve results that are generalizable to broader populations, a larger participant sample would have been necessary. Similarly, the study, due to its nature, relied on self-reported responses from participants, which introduces the possibility of biases. Furthermore, the research was quite general and did not spec-

ify individual types of chatbots or differentiate between communicative contexts, which could influence users' interaction styles, tone, or language preferences. Although our findings revealed that cultural identity was insignificant, the degrees of cultural influence, such as indirectness, or expectations of politeness, could possibly have had impact on the results if had been captured by the survey questions well. Also, the relationship between politeness and efficiency in interaction was not examined in detail, which raises questions about whether users adapt their language, tone, and politeness in situations of misunderstandings, or lower their politeness level if chatbots fail to understand their prompts. It is also uncertain whether users adjust their language based on the responsiveness, accuracy, or speed of the chatbots, and whether simplifying language and rephrasing it in misunderstandings remains as formal and polite as the initial prompts. Numerous questions emerge in the field, which, if investigated in future research, could provide deeper insights into the interaction patterns of users with chatbots and contribute to valuable knowledge in this emerging field of study.

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