

**A Conversation-based Perspective for Shaping Ethical Human–Machine Interactions:  
The Particular Challenge of Chatbots**

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## **Abstract**

The use of chatbots to manage online interactions with consumers poses additional ethical challenges linked to the use of artificial intelligence (AI) applications and opens up new ethical avenues for investigation. A literature analysis identifies a research gap regarding the ethical challenges related to chatbots as non-moral and non-independent agents managing non-real conversations with consumers. It raises concerns about the ethical implications related to the progressive automation of online conversational processes and their integration with AI. The conversational approach has been explored in the organisational and management literature, which has analysed the features and roles of conversations in managing interactions ethically. This study aims to discuss conceptually the ethical challenges related to chatbots within the marketplace by integrating the current chatbot-based literature with that on conversation management studies. A new conceptual model is proposed which embraces ethical considerations in the future development of chatbots.

**Keywords:** *artificial intelligence; chatbot; ethical challenges; online conversations; conversation management.*

## **1. Introduction**

One of the most recent and increasingly popular artificial intelligence (AI)-based applications relates to the transformation of customer service interactions using chatbots, which provide support to organisations in managing customer service experiences. Considered as ‘machine conversation system[s] [that] interact with human users via natural conversational language’ (Shawar & Atwell, 2005, p. 489), chatbots are increasingly integrated within social network organisational accounts as Customer Relationships Management (CRM) tools (DiSilvestro, 2018). Amazon’s Alexa and Apple’s Siri are two examples of such advancements in machine–human interactions, and it is expected that they will proliferate (Marr, 2018). A 2018 Gartner survey predicts that 84% of organisations will increase investments in this customer experience technology and that 25% of customer services will integrate chatbots by 2020 (Gartner, 2018). The reasons that are leading to this proliferation are visible and palpable to professionals - chatbots help organisations automatise and aggregate human data at a large scale in order to explore and understand consumers’ behavioural patterns, to rethink and optimise procedures and activities and to effectively manage decision-making processes (Leonardi & Treem, 2012;

Lepri et al., 2018). Along with the objective advantages of using chatbots for managing organisation–user interactions, are some specific ethical challenges linked to their features and which result in new ethical avenues that need to be investigated.

Because chatbots increasingly integrate AI mechanisms design (such as game theory, data and opinion mining, optimization techniques) in online social networking sites, they comply with the rules and dynamics of online social networks. These are characterised by real multiactor-based conversations that require technical resources, specific knowledge and communication abilities in order to nurture online interactions. Modern chatbots are characterised by conversational interfaces that make them increasingly able to simulate human conversations, to such an extent that customers may well not realize, that they are talking to a chatbot rather than a human services assistant. Furthermore, even if they do realize they are speaking to an automated agent, because chatbots display human conversational behaviours, they encourage, even entice, customers to engage with them in a reciprocal human manner, treating interactions as actual conversations, rather than what the authors prefer to call them, para-conversations. In sum, a particular issue with chatbots is that they can be mistaken as human if their robotic nature is not disclosed: their simulation of the human voice is now so accurate that they are susceptible to greater anthropomorphism by humans than are their unvoiced non-human associates.

The conversational process is commonly used by organisations for creating agreements, facilitating decision-making processes and improving the quality of interactions.

Conversations are the means used by organisations to gain cooperation and collaboration based on a level of trust, even if that trust is based on a strictly transactional understanding, for example, that a product will be exchanged for a financial token. Within the chatbot-based environment, conversations play an additional role, as they are used as a means to collect information and integrate data. The human-like qualities of chatbots are such that, as in human conversations that are friendly and helpful, they encourage digital users to trust them not only about the transaction that they are undertaking, but to reveal additional personal and other information, which is subsequently permanently stored, accessible and integrated so that a wider-ranging picture of individual consumers can be developed over time. Moreover, this individual data is aggregated with the data of other consumers so that comprehensive profiles of consumers can be obtained. This information is typically not shared with the consumer. Combined with predictive analytics, chatbots have the capacity to generate significant information asymmetry, a feature that frequently characterises human - machine interactions. Information asymmetry is based on the information disparities characterising those who join

online interactions and that could have potential damaging consequences. The party with less information, or less well organised, analysed and aggregated information, may not make fully informed choices, or may have made different choices if they had the same information as the other party in the exchange. At worst, a lack of information may have fraudulent consequences: for example, a bot may be running an investment scheme which involves money laundering.

The use of chatbot-based conversations within the marketplace therefore raises potential ethical issues involving customers. If chatbots have large amounts of information at their disposal, and they are able to see patterns that provide additional intelligence that is advantageous to their owners, they could be programmed to use such data for manipulating users' perceptions about a specific issue, such as first evaluations of products or services. This potential imbalance in informative power could increase the risks for consumers who interact with organisations via chatbots.

Crucially, chatbots are not moral and independent agents endowed with moral reasoning capabilities. Chatbots can enhance customer experiences and improve interactions with clients on the basis of data. For example, they improve organisations' ability to provide personalised customer experiences tailored to customers' needs based on pieces of information that are autonomously collected during human - machine interactions (Marr, 2018). However, even if organisations enhance the personability of chatbots by providing user-friendly software, chatbots are missing human qualities, such as judgement, empathy and discretion, so will not detect instances when actions may and should be changed because of these factors. They make decisions, not judgements, and those decisions are based on algorithms which are calibrated in ways that will benefit the algorithm owner or commissioner. In more extreme cases they risk 'spread[ing] rumors and misinformation, or attack[ing] people for posting their thoughts and opinions online' (Radziwill & Benton, 2017, p. 1).

An examination of the literature reveals a research gap with regard to the ethical challenges linked to the use of chatbots as non-moral and non-independent agents managing non-real, or para- conversations with consumers. More specifically, this gap reveals a need to explore the ethical implications related to the progressive automation of online conversational processes and their integration with AI principles. The authors therefore argue that especially in the marketplace, people should be aware of the nature and features chatbots and should be alerted to the implications of interacting with them.

Furthermore, this discussion is timely and pressing since every transaction in which consumers engage with chatbots, increases information asymmetry and the latter's power. With every interaction, humans provide these non-human agents with additional consumer, personal and/or, private information which in turn enriches their data repositories and which can then be used in a way that benefits their owners: even if that is only to confirm consumer existing purchasing habits. However, there is an additional and potent force in play.

Conversations are not just the words used for transferring data or a concept to someone/something else: conversations are strategic processes playing a crucial role in building trusting relationships, reducing uncertainties and increasing knowledge.

In this article, we argue, paradoxically, that to level the playing field and re-balance human-machine conversations, we need to use these conversations themselves. They could play a pivotal role in redistributing and redressing the asymmetrical power characterising the extant chatbot-based environment. By surfacing the ethical issues and developing the rules that define those conversations, steps can be taken to move towards an equalisation of power and boundaries can be placed on the processes by which power imbalances are initiated and perpetuated.

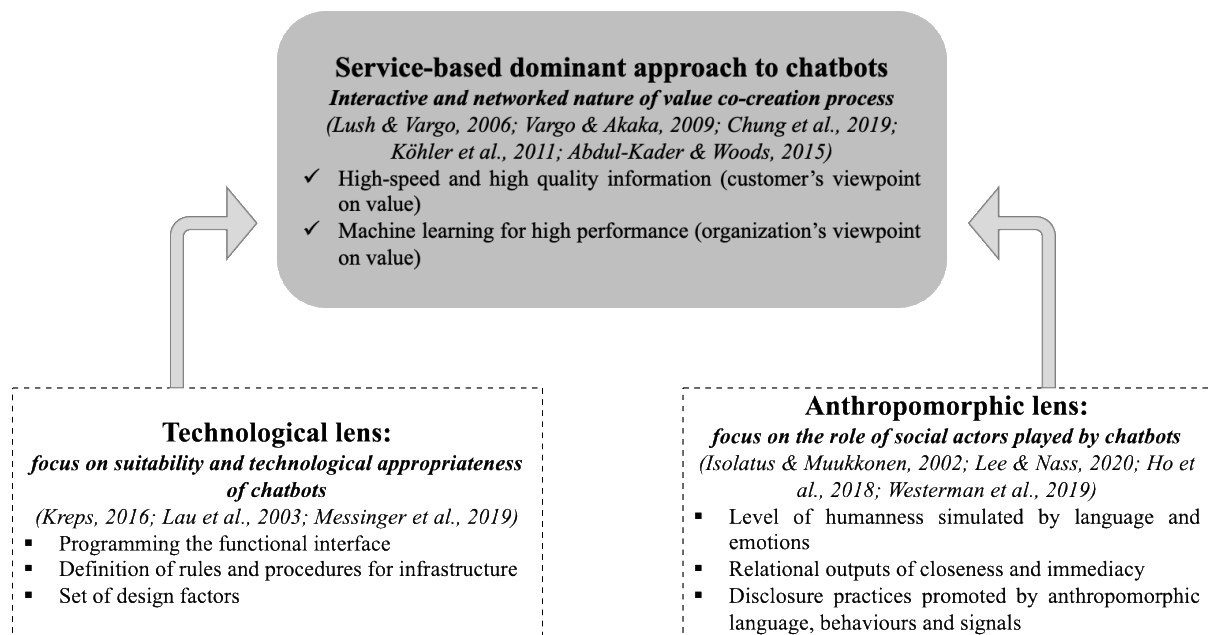
This study aims to explore conceptually, the ethical challenges and possible solutions relating to managing online human-machine interactions by integrating the current chatbot-based literature with the literature on conversation-based management. To achieve this aim, this article is structured as it follows. The first section reviews the extant chatbot-based literature, analyses the opportunities and challenges related to the increasing use of robots for managing organisation-consumer interactions, and scopes the gap on the ethical implications linked to them. The second section explores the conversation management literature in order to develop theoretical and practical insights that could be helpful in effectively programming ethical online chatbot-human conversations. The third section explores a model which maps a way forward for incorporating ethics in chatbot-human interactions and fourth, the managerial implications of using conversation principles in chatbot implementation will be outlined.

## **2. Artificial intelligence-based chatbots: towards a new ethical paradigm for human-machine interactions**

Considered as an 'integral element for managing firm-customer relationships' (Köhler et al., 2011, p. 93), a chatbot has been defined as an *e-service agent* that represents a technological evolution of the traditional service agent involved in direct firm-customer exchanges (Chung et al., 2018; Köhler et al., 2011; Larivière et al., 2017). Chatbots exploit the features of social

network- and AI-based technologies to guarantee personalised information and to meet customers' needs and expectations more effectively (Köhler et al., 2011; Sweezey, 2018a). In doing so, they help determine the success of service exchanges and enhance firm–customer interactions. More specifically, they facilitate what the service-dominant approach defines as *the process of value co-creation*, as they emphasise the interactive and networked nature of value creation (Lusch & Vargo, 2006; Vargo & Lush, 2008). As stated by Vargo and Akaka (2009), the main aim of service systems is “to provide input into the value-creating processes of other service systems and thus to obtain reciprocal output” (p. 39). Chatbots act as *service systems* whose input is the collection, integration and transformation of data and by providing valuable interactional experiences both for customers and firms. They meet the service-dominant based principle according to which “the value created by the customer, through the support of a supplier, enables the supplier to gain financial value in return” (Grönroos, 2011, p. 285). From a customer's viewpoint, the value of using chatbots is the high speed of service provided and the quantity and variety of information they can supply compared with traditional service agents (Chung et al., 2019; Köhler et al., 2011; Sweezey, 2018b). Chatbots have the capability to ‘mimic human behavior and record a contact history they can subsequently refer to by tapping into an artificial memory’ (Köhler et al., 2011, p. 96). By using pattern-matching techniques, chatbots rapidly access a ‘set of concepts that are interconnected relationally and hierarchically’ (Abdul-Kader & Woods, 2015, p. 74) and can use this wide range of knowledge to quickly and effectively assist customers. From the viewpoint of the firm, by using machine-learning techniques, chatbots acquire information, learn and modify their own behaviours in order to help clients use their own time more efficiently and in guiding them to develop a deeper understanding of products with positive consequences (for the firm) in terms of financial performance (Chung et al., 2019). The role of chatbots as e-service agents in the extant service-dominant approach has been investigated using two logics which underlie chatbot–human interactions (see Figure 1). These can be seen as two interrelated lenses of analysis: the *technological lens*, which emphasises the role of the *functional* interface of chatbots and identifies design principles for their effective development. The *anthropomorphic lens*, which focuses on the *humanising experience* that chatbots can provide and that could enhance firm–customer interactions. The authors summarise the thinking of these two perspectives in Figure 1 and show how, together, they contribute to the service-based dominant approach.

**Figure 1 Service dominant approach to chatbots: technological and anthropomorphic lenses**



Examining chatbots through the technological lens argues that their development requires the application of design principles in order to improve their functional interface (Kreps, 2017; Lau et al., 2003; Messinger et al., 2019). Defining a set of rules and procedures enhances the quality of informational exchanges and ensures an agile infrastructure (Lau et al., 2003). Kreps (2017) identifies seven design factors that need to be considered: a) availability of tailored information systems to collect information about digital users and to develop a set of message responses that can match their needs; b) ease of use, which constrains the use of complex design features and forces the adoption of a user-centric approach; c) high levels of relevance and clarity in message responses by integrating with visual elements; d) high levels of interaction that requires a complete vocabulary and set of information in order to provide constant feedback and avoid missing or misleading answers; e) added programming which allows recognition of users’ emotions; f) high levels of interest and appeals for shared information; and g) high connection with other social networks to encourage sharing of information. According to this technological perspective, the suitability and technological appropriateness of the chatbot design represents the first requirement for their practical operation and effectiveness.

The anthropomorphic lens stresses the need to go beyond design principles when developing chatbots. It underscores the importance of exploring their role as *social actors* characterised by communicative behaviour and by the level of humanness simulated by the language they

use and the emotions they generate in digital users. (Bickmore, 2010; Ho et al., 2018; Isotalus & Muukkonen, 2002; Lee & Nass, 2010; Reeves, 2016; Stoll et al., 2016; Westerman et al., 2019). Defined more as *animated agents* (Isotalus & Muukkonen, 2002) with an affective function, chatbots can stimulate *closeness and immediacy* (Isotalus & Muukkonen, 2002) and promote *disclosure* practices (Ho et al., 2018). According to this approach and as indicated earlier in this article, digital users perceive and interact with chatbots as if they are other people, even if they know that they are machines (von der Pütten et al., 2010; Ho et al., 2018). Chatbots can act as ‘companions’ (Stoll et al., 2016) when they use anthropomorphic language, behaviours and signals (Lee & Nass, 2010; Stoll et al., 2016; Westerman et al., 2019). Consequently, in managing chatbot-human interactions, particular attention needs to be given not only to design principles but also to how messages are managed and shared in specific formats and with content that could affect digital users’ impressions about the humanness of chatbots. Their attractiveness can be enhanced by such elements as the timing of their responses, their use of spelling and the length of words used (Westerman et al., 2019). The authors contend that the interactive and relational nature of the value created via chatbots as evidenced by service-dominant logic, cannot be explored by using the technological and anthropomorphic lenses alone as has been the case so far. As Følstad et al. (2018) state, the interactive and relational value created via chatbots can be affected not only “by factors concerning the specific chatbot, specifically the quality of its interpretation of requests and advice, its human-likeness, its self-presentation, and its professional appearance” (Følstad et al., 2018, p. 1). As Følstad et al go on to say, the relational value created via chatbots can also be affected by “factors concerning the service context, specifically the brand of the chatbot host, the perceived security and privacy in the chatbot, as well as general risk perceptions concerning the topic of the request” (Følstad et al., 2018, p. 1).

While Følstad and colleagues indicate additional dimensions that need to be added to the technological and anthropomorphic lenses, they do not articulate these conceptually. As has already been argued, what makes chatbots different from other AI-enabled consumer-focused technologies is their potential to be mistaken as humans largely because of their conversational capacity. Their information asymmetrical data-retaining, analytical and predictive capacity also enable them to engage in effective persuasive conversations. Focussing on this, the authors have turned for guidance to one of the earliest and authoritative texts on persuasive conversations: Aristotle’s Rhetoric (Roberts, 2015) to discern if there are any helpful parallels. Aristotle lists three Persuasive Appeals (and bearing in mind chatbots are intended to be persuasive agents in a consumer context this has relevance): logos, pathos



and ethos. Logos concerns appeals to the rational. The authors would equate this to the technological lens in that this is focused on the suitability of the technology and the features that are available to make the interactions reliable and technologically appropriate such as the right vocabulary, the correct sequencing of questions, appropriate visualisations, ease of use and so on. Pathos, which centres on appeals to the emotions, evokes parallels with the anthropomorphic lens. Here issues such as appropriate communicative behaviours, how human the bot appears to be, what emotional responses it generates are pertinent. Ethos, which concentrates on ethics, that is, issues of character (for example, judgement; intentionality; exercise of power; credibility or trust) appears to be the missing element. Ethos has ready application to considerations of, for example, the conversational brand's behaviour in the context of chatbots (Følstad et al., 2018). The argument made by the authors is that while the technological and anthropomorphic lenses may deal with the *performance* of chatbots and is largely for the benefit of the owner of the bot, the third dimension is to do with *governance* and is crucially bound up with ultimate consumer acceptance of the place bots as legitimate and trustworthy organisational agents which take into account of their position too.

Having established that there are moral and ethical elements to the use of chatbots, this article now turns to what the authors would regard as three pivotal ethical issues which emerge in the literature on chatbots, although there are many more. The first is linked to the risk of *the asymmetrical redistribution of power because of the information asymmetry that occurs within human-machine interactions*. Chatbots increase the capacity of organisations to collect in-depth, integrated and aggregated information about their customers in order to develop apparently cooperative interactions with them on a range of topics including those outside the subject of the immediate transaction (Parvatiyar & Seth, 2001). However, as has been already stated, chatbots' ability to access a large amount of information within a short period of time, combined with their ability to process data at a high speed and their predictive capability, leads to an imbalance in informative power. The ethical risk is of misalignment occurring between the different participants in the para-conversation who do not have the same level of informative knowledge. As West (2019) points out, chatbots and users interact in a 'system in which the commoditization of our data enables an asymmetric redistribution of power that is weighted toward the actors who have access and the capability to make sense of information' (p. 1).

The second ethical challenge concerning the use of chatbots is linked to *the management strategies for humanising them in order to reduce users' perception of risk and to increase*

*perceived chatbot credibility and trust*. Developing human–machine cooperation can provide benefits to organisations in terms of speed, cost, savings and revenue (Wilson & Daugherty, 2018), but genuine interactions are built on more than one-sided instrumental value. For this reason, the anthropomorphic view applied to chatbots has called for their humanisation even if they are not characterised yet by self-consciousness and self-awareness (Kaplan & Haenlein, 2019). This call is posited on the need to reduce users’ perception of risk and to make chatbots more credible in consumers’ eyes by using the range of cognitive, emotional and social intelligence cues that consumers themselves display (Kaplan & Haenlein, 2019). The ethical risk is by making chatbots *appear* more human, consumers may assume they have the same mental models and attendant ethical values, judgement and social norms that constrain instrumental human behaviour (Mengis & Eppler, 2008).

The third ethical issue linked to the use of chatbots concerns *the need to manage network security and protect users’ privacy*. The collection of personal and impersonal data linked to individual behaviours within the digital marketplace is made possible by technological features, such as identification tags. These features raise concerns about specific ethical concerns, such as information privacy, data protection, lack of control over personal data and potential *slavery* to technological devices (Hsu & Lin, 2016; Nguyen & Simkin, 2017; Slettefles, 2009). As a consequence, the requirement to apply privacy measures for minimising information disclosure and loss of data is increasing (Khan et al., 2012; Solanas & Martinez-Ballestè, 2009). In this case, an ethical issue can be addressed via the technological lens which allows for the application of numerous measures for ensuring information confidentiality, integrity and availability (Solanas & Martinez-Ballestè, 2009). Information, for instance, should be known only by authorised stakeholders (confidentiality), should be complete and detailed (integrity) and should be accessible in a prearranged way and time (availability) (Solanas & Martinez-Ballestè, 2009). However, a technological solution is not the only one, and may not be the best as outlined in the following discussion demonstrates. Given the interactive and relational nature of the value created via chatbots and the role of chatbot-based para-conversations, the authors have explored the conversation management literature, according to which conversation ‘serves not only to exchange information, but also for conversation partners to relate to each other and develop a shared reality between them’ (Mengis & Eppler, 2008, p. 1290). More specifically, we intend to enrich the stream of service-dominant logic literature by putting forward evidence that calibrating conversations according to mechanisms, procedures and rules that go beyond the technological or

anthropomorphic approaches to incorporate conversation governance principles, would address ethical challenges and make the technology more propitious.

### **3. A conversation-based perspective to shape human–machine interactions via chatbots**

The conversation management literature helps us address the three chatbot-based ethical challenges outlined above.

*Risk of the asymmetrical distribution of informative power: solving information asymmetry.*

The topic of information asymmetry has emerged in the chatbot-based literature as it represents a core concept in marketing interactions between organizations and customers. ‘Marketing relationships between buyers and sellers are often characterized by information asymmetry, in the sense that the supplier possesses more information about the object of an exchange (e.g., a product or service) than the buyer’ (Mishra et al., 1998, p. 277). Two main problems are linked to this: first, the adverse selection problem (Mishra et al., 1998; Nayyar, 1990), which arises when the buyer cannot evaluate the seller’s skills, abilities and characteristics. Second, the moral hazard problem (Holmstrom, 1979; Mishra et al., 1998; Stewart, 1994), which relates to the supplier affecting consumers’ perceptions of the quality of a product or service because these consumers do not have full information about such a product or service. Mishra et al. (1998) identified three possible solutions to solve these two problems: a) sharing of detailed private information by the parties involved in a marketing interaction before starting a possible exchange, b) the development of a shared culture based on common and understood meanings about events and situations in order to avoid goal incongruence and c) the development of a customer-oriented compensation system based on the use of incentives and rewards.

The conversation-based literature can enrich this viewpoint and provide additional insights about the strategic use of conversations to provide solutions to the ethical challenge of information asymmetry. It emphasises the role of the *subjects* involved in the conversation and the need to clarify at the beginning of interactions: *detailed information about identity and mental models of the actors involved* (Arnold, 2008; Jabri, 2009; Mengis & Eppler, 2008; O’Neill & Jabri, 2009); and *their aims or intents* in order to avoid possible goal incongruence (Liedtka & Rosemblum; 1996; Von Krogh, Ross, 1995; Ford, Ford, 1995; Skordoulis and Dawson, 2007).

The conversation-based literature affirms that involved actors should reveal their identity immediately by introducing themselves at the beginning of an interaction. Identity disclosure helps to stimulate an egalitarian position amongst the interlocutors (Beech et al., 2010) while also recognizing the risk of hierarchical positioning, but introductions can be deliberately

framed to encourage respectful listening and honest reciprocation. With this in mind it would be helpful if the chatbot would disclose its identity at the beginning of a para-conversation by making a declaration such as, “*Hi! I am a bot, how can I help you?*”.

Moreover, in order to reduce information asymmetry, it would be beneficial to understand the mental models interlocutors use for interpreting and creating meaning (Mengis & Eppler, 2008; O’Neill & Jabri, 2009). All the actors involved use specific mental models for understanding, interpreting and attributing a meaning to the reality they experience. Mental models are ‘deeply anchored, internal pictures of how the world works’, and they refer to the ‘whole network of values, convictions, assumptions and psychological dispositions for sense-making and move in a nanosecond from the original message to our interpretation’ (Mengis & Eppler, 2008, p. 1299). Knowing the cultural background of the participants in a conversation is essential, as it affects the capacity to share information and opinions effectively, as well as to cooperate in order to achieve a specific aims (O’Neill & Jabri, 2009). From a practical point of view, chatbots should pose certain types of questions to uncover interlocutors theories, beliefs and mental representations (Sears & Jacko, 2009): what-if questions; “how” questions in order to stimulate comparisons; out-of-the-box questions, such for instance metaphorical or lateral questions. While there are additional dangers here of increasing the power of chatbots and their potential for increased manipulation which require ethical governance, once mental models have been discovered, it means that from the other side of the para-conversation there is increased mental congruence.

Conversational situations involving information asymmetry are often characterised by the presence of hidden agendas and goal incongruence. Chatbots should immediately declare the aim of the conversation and ask the interlocutor’s intent. Von Krogh and Ross (1995) distinguished the *operational* intent from the *strategic* intent of conversations. In operational intent, conversations are addressed to verify that a meaning has been understood, accepted and shared. They are characterized by a conciliatory tone (by using excuse utterances such as “I am glad to hear that” or greetings utterances such as “Thank you”) and by the sharing of information resources such as links, reports, data, graphics. In this case, chatbots could help users in developing shared understanding and schema for making interpretations about a specific issue (Ford & Ford, 1995). In strategic intent, conversations are oriented towards stimulating and collecting new perspectives and ideas. They are characterized by a challenging tone of voice using question-based utterances to uncover underlying assumption (“What do you mean?” “What do you intend?”) and by providing feedback and evaluations on the ideas shared by interlocutors (“Well done” “Great ideas”). In this case, chatbots help users

to develop capability and specific competences about an issue, assisting cooperation and stimulating openness to different perspectives (Skordoulis & Dawson, 2007).

*Humanising chatbots: increasing their credibility and reducing users' perception of risks*

Chatbots are increasingly programmed to mimic human beings, although they have nothing human about them. This initial paradox leads potential customers to accept at face value the credibility of chatbots and to display different risk perceptions to their use than they would, say, to a purely text based human-machine interface. In order to promote trusting interactions between interlocutors and to reduce users' perceptions of risks, the following conversational features need to be taken into account; *the forms of the exchanged messages* in terms of *format* and *content* (Mengis & Eppler, 2008) and *the different types of conversations* that can occur in order avoid conversational mistakes that could impair the quality of the relationship (Ford & Ford, 1995).

According to Mengis and Eppler (2008), underestimating the relevance of *form* can create ambiguity and cause loss of credibility. Concerning format, the use of humour and clear statements facilitates understanding of the message and the use of simple language and visual supports appears to facilitate the creation of new knowledge. A neutral and moderate tone reduces the risk of difficult and stressful conversations (Mengis & Eppler, 2008). As far as content is concerned, this helps align interlocutors' expectations about the conversation. Messages rooted in actual facts seem to assure the interlocutors that no misinterpretations have occurred. In sum, chatbots should be programmed to prioritise messages that focus on the issues that matter most or on the topics that are relevant and meaningful to interlocutors. In addition, organisations should consider sequencing different types of conversations which may focus on different purposes such as their effectiveness (meeting the organizations objectives), the satisfaction of interlocutors and the success of interactional relationships. Within the conversation-based literature, the four types of conversations can be identified (Ford & Ford, 1995) and they could be taken into account in programming chatbots, First, *initiative*, which is characterised by the use of assertions (i.e. 'We need to...'), requests (i.e. 'Will you approve...') and promise (i.e. 'We will do...') in order to 'focus listeners' attention on what could or should be done' (p. 546). Second, *conversations for understanding*, which are useful for making sense of an issue and are characterised by 'assertions (Scherr, 1989) and expressives; that is, claims are made, evidence and testimony [are] given, hypotheses [are] examined, beliefs and feelings [are] explored, and contentions [are] maintained' (p. 548). Third, *conversations for performance*, which include a call to action and are characterised by

‘an interplay of directives (requests) and commissives (promises) spoken to produce a specific result’ (p. 549). Finally, conversations for *closure*, which are used to reach an end and ensure that the participants are satisfied with the achieved results. These are ‘characterized by assertions, expressives, and declarations to bring about an end to the exchange process’ (p. 551).

#### *Managing online security: enhancing users’ privacy*

Chatbots constantly interact with machines and humans within the online environment, and they manage huge amounts of personal data and information that could be sensitive, such as that pertaining to health and finance. As pointed out by Subramanian (2017), the ‘security and discreetness of social robots are obviously a very critical design imperative’, as ‘they affect the safety and security of the robot as well as [of] the individual that it is associated with, including the individual’s properties’ (p. 96). Similarly, Følstad and Brandtzaeg (2017) identified that ‘machine agents may be used to sway individuals’ opinions in undesirable ways’ (p. 38). An example could be represented by the computational propaganda phenomenon in political communication (Bradshaw & Howard, 2018). In recent research into the on-line political environment it emerges that the most common strategy used in more than 38 countries is to develop political bots, or automated accounts designed to mimic human behaviour. Such bots are designed to use various manipulation techniques such as ‘spreading junk news and propaganda during elections and referenda, or manufacturing a false sense of popularity or support (so-called ‘astroturfing’) by liking or sharing stories, ultimately drowning out authentic conversations about politics online’ (Brandshaw & Howard, 2018, p. 12).

As a counterbalance to such approaches, the conversation-based literature describes a conversational setting that could be reassuring in terms of respect for privacy and network security. That literature explores *the features of the conversational environment* that need to be clarified and shared, such as access modalities and conversational settings (Innes, 2004) and the *specific conversational rules* that are based on advocacy and comparison approaches (Von Krogh & Ross, 1995). It claims that authentic conversations can be developed in a respectful and proper environment (Innes, 2004). The following criteria need to be met to guarantee a conversational environment which generates reassurance: *ease of access* to the conversational environment for all involved, *full accessibility* of information that needs to be shared amongst the participants, a setting where *mutual respect* is required and guided by ground rules for conversational behaviours.

In conversations, power structures can emerge, so agreeing specific conversational rules can help in maintaining balanced formal and informal relationships is necessary. In practical terms, it could be helpful for organizations to create a chatbot etiquette and code of polite conduct that could be openly offered to all actors before starting a conversation. This would also guard against instances where the humans involved in para-conversations have abused their power to ‘train’ chatbots to use, for example, obscene language. Of course, enforcing those rules would also need consideration and exclusion for violations may be a last sanction.

#### **4. Managerial implications for the ethical development of chatbots**

Three main ethical challenges have emerged from a review of the chatbot-based literature: the risk of the asymmetrical redistribution of informative power; the need to humanize chatbots to reduce users’ risk perceptions and increasing organizational credibility; and, the need to guarantee network security and protect users’ privacy. By introducing the conversation perspective, this study provides insights and stimuli for marketing and communication researchers and professionals who would like to integrate the use of chatbots in their collection of consumer interaction tactics. The authors suggest that communication and marketing professionals align programming with online conversational competencies to help address the ethical challenges that persist in the use of AI-based applications. Figure 2 offers a synthesis of the conversation management contribution.

*Figure 2 – Conversational process features for addressing chatbot-based ethical challenges*

<b>Chatbot-based ethical challenges</b>	<b>Ethical need</b>	<b>Conversational process features to use</b>	
Risk of the asymmetrical redistribution of informative power	→ Solving information asymmetry	→ Identity and mental models of the actors involved in the conversation	Arnold, 2008; Mengis & Eppler, 2008; O'Neill & Jabri, 2009
		→ Clarification of the conversational aims or intents	Liedtka & Roseblum, 1996; Von Krogh & Ross, 1995; Ford & Ford, 1995; Skordoulis & Dawson, 2007
Humanising chatbots	→ Increasing chatbot credibility and reducing users' risks	→ Defining the forms of the exchanged messages	Mengis & Eppler, 2008
		→ Recognising the different types of conversations	Ford & Ford, 1995
Managing online security	→ Enhancing users' privacy	→ Understanding the features of the conversational environment	Innes, 2004
		→ Clarifying the conversational rules	Von Krogh & Ross, 1995

The authors suggest therefore, that three sets of diagnostic questions should be built into the development of chatbot conversations to address these ethical considerations.

The first group questions to pose before activating a chatbot-user conversation is related to the roles of the actors involved in the conversation, their identity and mental models, their aims and their intents. By posing specific questions at the beginning of online interactions, chatbots could uncover interlocutors' mental models and recognise the presence of framing mechanisms that can occur during a conversation (Mengis & Eppler, 2008). These questions could help marketing and communication practitioners to reduce the risk of the asymmetrical redistribution of informative power and meet the ethical requirement of solving such information asymmetry. By developing an invitational rhetoric that links chatbots back to humans, by revealing information about the features and roles of interlocutors and sharing clear conversational aims, intents and expected results, value is added to para-conversations and para-dialogues. These promote mutual confirmation of individuals' uniqueness rather than the gaining of control over others (Foss & Griffin, 1995; Yang & Heeman, 2010). Both parties are aware of the presence of each other and the fact that the other party should not be considered solely as a data source but a partner in achieving conversational aims.



As well as chatbots being programmed to reveal their identity from the beginning of para-conversations, with self-disclosure utterances being added to the language repository, they should also be programmed to recognise the interlocutors conversational needs. As underlined by Mengis and Eppler (2008), by asking a series of questions that answer the over-arching question: “is the communication intent explicitly shared by all participants and is it oriented towards the co-creation of meaning?” (p. 1299). Articulating individual and common goals explicitly could help participants in sense-making of the interaction and avoid misunderstandings (Mengis & Eppler, 2008). Even in chatbot–human conversations, there is benefit in surfacing each actor’s intentions and clarifying the expected results and outcomes would be worthwhile for both participants. Indeed, conversations can contribute to achieving a range of different aims, such as developing skills and specific competencies, stimulating collaboration among interlocutors and improving consensus levels. The end points can be shared before the beginning of a conversation, as these can guide specific conversational choices in terms of utterances, cues and formats.

A second group of diagnostic questions is related to the specific principles drawn from the conversational literature that could guide decisions about the format and content of messages. Such questions could be helpful for increasing the credibility of chatbots and answering the ethical challenge of humanizing chatbots. Distinguishing between identifying problems and giving recommendations could help in developing trust and loyalty by the actors involved. Before conversations begin, how they are to be structured should be explicitly stated - that is, if they are to explore a broad topic or to focus on a specific issue, if all the single contributions shared by the interlocutors are taken into account or if specific utterances and declarations are given more weight.

Recognising the impact of using specific sequences during a conversation is helpful if the aim is to avoid possible conversational breakdowns that could negatively affect the level of trust interlocutors have in each other. The conversation management approach indeed indicates that trustful interactions can be created “through a process of discovery in dialogue with others” (Bowen, 2016, p. 568) and by ensuring the quality of interaction. This quality can be improved by attributing the proper formats to the messages exchanged and selecting the right structure for the conversations. It can be further enhanced by adding empathic utterances, such as those in agreement or disagreement.

A third and final group of diagnostic questions is related to conversational etiquette; the set of conversational rules that need to be shared at the beginning of a conversation. The conversation management literature suggests that the environment in which chatbot-based

para-dialogues and para-conversations take place is important. This perspective emphasises the importance of defining the setting in which conversations occur, being clear about the rules and transforming chatbot-based para-conversations into a collaborative act where machine and users cooperate to achieve a common and understood aim.

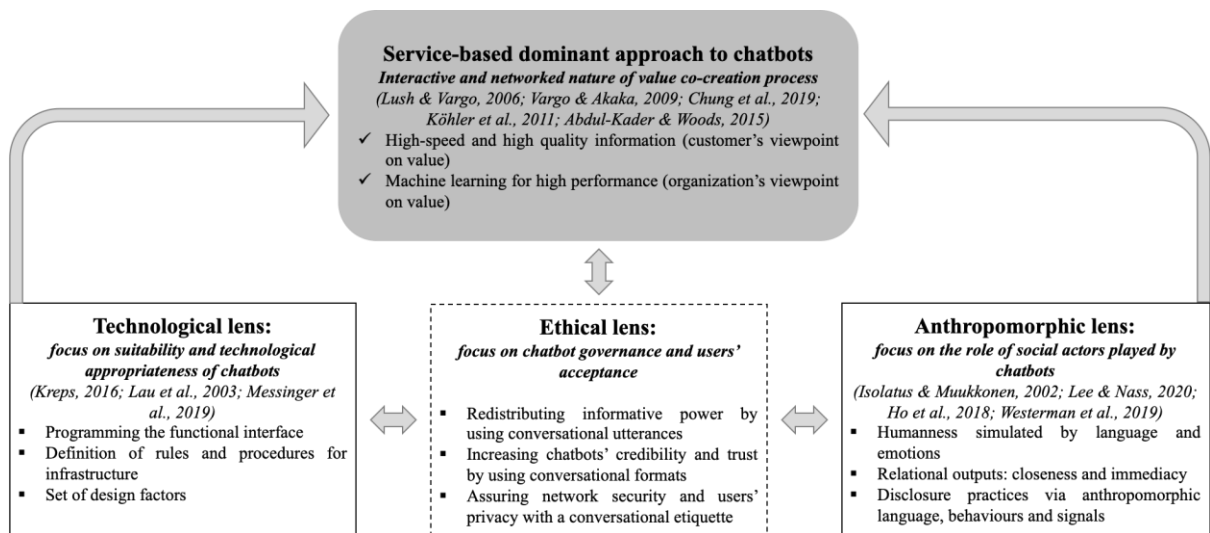
Conversational etiquette could also help practitioners in managing user requirements for security and privacy. In this case, developing a conversation etiquette allows organization to create common ground where interlocutors feel themselves free to share convergent or divergent stimuli and idea (Hammond & Sanders, 2002).

## **5. Implication for theory**

The service-dominant approach to chatbots has emphasized the interactive and networked nature of the value co-creation process that they could encourage. By stimulating real-time interactions, chatbots play the role of service systems and allow customers and organizations to share data and acquire valuable insights. These chatbots-human interactions have been explored in the literature to date by adopting two theoretical approaches: a *technological* one, which has focused on examining the suitability and the appropriateness of chatbots in terms of interfaces, infrastructure and design; and, an *anthropomorphic* one, which has emphasized their role as social actors and organizational attempts to make them similar to human beings. Both perspectives focus on chatbot *performance* and are addressed to improve the chatbot-based experience with clear advantages for the organizations which own and program the chatbots systems.

In order to enhance the value co-creation approach promoted by the service-dominant approach according to which both organizations and customers could take optimal benefits from using chatbot-based services, we argue that attention should move from a focus on enhancing *performance* to embrace considerations that concern chatbot *governance*. This links to the key issue of the legitimation of chatbots as organizational representatives by digital users. As the use of AI technologies and the use of big data is coming under increasing public scrutiny, this shift is apposite. Taking a cue from Aristotle (Roberts, 2015), this means adopting a new approach and theoretical perspective to examine chatbots which specifically articulates an ethical strand, as summarised in figure 3.

Figure 3 – Theoretical contributions to chatbot-based literature: the role of ethics



The three main ethical challenges identified and analysed (informative asymmetry linked to the missing redistribution of informative power; the increasing users' perceptions of risk and loss of chatbots credibility and trust; and network security and privacy) have not been specifically articulated and addressed by either the technological or anthropomorphic approaches. The main contribution of this paper is, therefore, the adoption of ideas and concepts drawn from the conversation-based literature to answer this ethical need. A further contribution is the formulation of a new model that shows the relationship between the two extant lenses in the literature, technological and anthropomorphic, with the ethical dimension.

## 6. Conclusions

Sullins (2006) underlined three requirements for a robot to be seen as a moral agent—it should be significantly autonomous from any programmers, ascribing the robot's behaviour to an intention should be possible and the robot should show an understanding of its responsibilities.

This study assumes that chatbots cannot be considered independent moral agents when acting in a consumer context. They work instrumentally on behalf of their owners and they do that currently on the basis of interactions with humans that are built on information asymmetry, where consumers find it difficult to recognise bot identity, where chatbots hold human-like para-conversations which are not real conversations, but data collection exercises, and where network security and privacy issues can be compromised. This study posits a theoretical resolution to these issues by considering features from the conversation management

literature for managing human–machine interactions. In addition, by formulating groups of questions that help in this respect, this article offers a practical way forward. The challenge to the service-dominant approach as it is currently framed, with its technological and anthropomorphic underpinnings, is whether it is content to accept that ethics should be embraced within the model. It is the authors' contention that performance criteria also requires governance concerns to be taken into account if chatbot technology is to be fully welcomed and legitimised.

Future research efforts could: explore additional ethical issues and expand the considerations which currently populate the ethical lens dimension of figure 3; examine the connections between the three lenses in more detail; and, explore how to better operationalize the theoretical insights provided by the conversational perspective. Practically, it could be useful to explore how to integrate the current programming languages (for example, Python, Java, Lisp, C++, PHP) to create AI-based chatbots with the conversational cues recommended by the conversation management literature. More specifically, future research could test empirically the theoretical and practical insights provided by the conversational perspective.

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