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**Ethics in 'Artificial Intelligence - Human interaction' in service settings:  
Review and research agenda**

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## **Abstract**

Ethics in 'Artificial Intelligence - Human interaction' in service settings: Review and research agenda

## **Purpose**

The purpose of this paper is to examine literature on 'Artificial Intelligence to Customer' interaction and identify a research agenda for future analysis of the role ethics can play as artificial intelligence acts as a decision making entity

## **Methodology/approach**

A review of literature from 1950 to 2018 was undertaken with key areas of review being Artificial Intelligence in service settings interacting with humans

## **Findings**

There are opportunities to progress contributing research into applying ethics to AI decision making with calls for more empiricism and definitive analyses

## **Originality/Value**

Future research into the ethics of AI decisions can increase knowledge and practice for accountable decision-making in automated service interactions

## **Keywords**

AI, Empathy, Service, Social Exchange Theory, Emotion, Ethics

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# **Ethics in Artificial Intelligence to Human interaction in service settings: Review and research agenda**

## **1. Introduction**

The proliferation of technology has brought the application of AI (Artificial Intelligence) to customer service interacting processes. Computerisation of knowledge and service work represents a significant technological development in the work context of recent times with AI being designated a decision-making role in such contexts (CIPD, 2017). Therefore there is an opportunity to examine discussions on the manner in which it, as one-party acts towards the other human one, a defining notion of ethics as a philosophical discipline (Munitz, 1958). This is the context for suggesting subsequent items for a research agenda on AI's ethical behaviour in the paper.

Humans tend to attribute traits, intentions and emotions to non-human entities (Ybarra and Wiersema, 1999; Gabriella, 2015; Misselhorn, 2009). These can intensify if non-human entities respond with ever greater human mimicry, which AI is capable of, so increasing human dependency and perceptions of it as trust worthy decision making source (Levy; 2009). The purpose of this paper is to review literature on 'Artificial Intelligence to Customer' interaction. The intension is to then identify key discussions on the role of ethics for AI interacting with service customers to suggest further contributory research into its behaviour as a designated decision-making entity. This paper divides the topic into three areas; Characteristic service demand and supply interactions and AI, AI interaction as the human, then Conceptualising a specific ethics research agenda respectively.

'AI refers to the use of digital technology to create systems that are capable of performing tasks commonly thought to require intelligence' (Brundage et al., 2018, p. 9). Intelligence is conceptualised as the 'ability to accomplish complex goals' (Tegmark, 2017, p.50). Drawing on seminal work the service definition that encompasses the human, service and AI is 'Services are processes that include a series of actions and interactions by the service provider and the customer, where tangible resources and physical and digitalized systems as well as people form the service in interactions' (Grönroos, 2017, p.6).

## **2. Characteristic service demand and supply interactions and AI**

### **Mutual understanding, authenticity and AI instigated gullibility**

Two aspects that can define a positively recounted service exchange are mutual understanding and authenticity. Mutual understanding between service demand (customer) and supply (service representative) influences customer notions of a positive experience. It is perceived by the customer as service provider having empathy, so trying to connect with their lives (Bitner et al., 1993 in Price, Arnould, Deibler, 1995). AI is being engineered to replicate human interactive behaviour that simulates interest and inquisitiveness with capability that reacts to human expression through voice and emotional indicators, such as facial and bodily gesticulation (Kaliouby, 2017; Herzfeld, 2015; Lee, 2006; Piccardi and Jan, 2003; Heaven, 2018; Haladjian and Montemayor, 2016; Asada, 2014; Choudhury, 2016; Misselhorn, 2009; Chen, 2012).

Interaction with authenticity also contributes to customer views of a good service exchange experience. Such a recalled service encounter requires emotions be perceived by the customer

as authentic expressive human social interactions. Authentic social interactions are characterised as appearing genuinely empathetic rather than contrived, fake and formulaic (Ladhari et al, 2011; Wang and Beise-Zee, 2013; Ashforth and Humphrey, 1993; Hochschild, 1983; Price, Arnould, Deibler, 1995)..

AI adoption in organisations to act as supplier in service exchange has brought with it the consideration of its capability to appear human in its responses (Von Krogh, 2018; Simone, 2013). Replicating human actions has already manifested itself as deployable computing capability that can perform reciprocal responses to service demand. The demand may manifest itself in the form of customer written text, vocal task requests and physical gestures (Hoskins and Martorelli, 1987; Flynn, 2013; Bryan, 2017; McWaters, 2015, Heaven, 2018; Grossman, 2014; Paul-Choudhury, 2016; Brundage et al, 2018; Piccardi and Jan, 2003). AI in the form of human life-size automatons is an equally normalised anticipation with expectations of responsive reciprocal touch and feel that is organic (Hodson, 2014; Levy, 2009; Chen et al, 2012; Lee, 2006; Herzfeld, 2015, Rutkin, 2014).

AI can simulate emotional responses and replicate interaction nuances as a service supply agent but has prompted concerns of engineered manipulation of the human (Herzfeld, 2015; Kleber, 2018; Banavar, 2016; Vallverdú and Casacuberta, 2015, CIPD, 2017). A propensity of humans to project human traits and intensions onto non-human objects, i.e. anthropomorphise (Gabriella, 2015; Misselhorn, 2009; Parkin, 2017; Vallverdú and Casacuberta, 2015; Rutkin, 2014; Herzfeld, 2015) is seen as increasing a risk of gullibility referred to as ‘Turin deceptions’ (CIPD, 2017, p. 14). This is a scenario when boundaries between humans and machines become less obvious and in some extreme cases lead to the inability of a human to determine if they are interacting with a machine or not.

### **3. AI interaction as the human**

AI technology is being deployed to perform tasks that are socially interactive in design, to provide decisions with algorithmic deliberation, and to output solutions via problem resolution with recommended alternative courses of action (Von Krogh., 2018). While mutual understanding and authenticity in the interaction are able to be simulated there is also the extrapolation of AI being produced as human life-size automatons. These will simulate reciprocal emotional responses and feel human when touched to create even greater familiarity in interaction between AI and human. This prompts questions of where and how shall adequate and acceptable standards for their behaviour be obtained? Also what does it consist of when compared to accustomed ways of thinking and behaving? (Munitz, 1958).

There is further scope for comment on the ethical implications from service situations that expose human responses to AI decisions simulated as if they were interacting with another human, but unaware. The ethical issue under discussion is reflective of situations where people may be subjected to ‘Turing deceptions’ (CIPD, 2017, p. 14). This is facilitated by ever increasing persuasive human mimicry and compounded by the tendency for humans to anthropomorphise non-human entities (Gabriella, 2015; Misselhorn, 2009; Parkin, 2017; Vallverdú and Casacuberta, 2015; Rutkin, 2014; Herzfeld, 2015).

### **4. Conceptualising ethics research agenda**

Ethics is a philosophical discipline that discusses the manner in which one person should act towards the other. Exploring decision making responsibility in light of AI ubiquity is by

drawing attention to the role of ethics as a consideration when asking what should be the manner AI acts towards the other person in a service exchange? (Yu, et al, 2019). Ethics represents a search for clarity on the nature of the right conduct. Scientists and technology practitioners are already calling for a focus on robust ethical strategies with calls for greater responsibility for the impact on people by those developing it (CIPD, 2017).

As a suggestion to frame further questions Yu, et al., (2019) may be cited for considering an ethics taxonomy regarding decision outcomes in an exchange. Consequentialist ethics: the agent is ethical if and only if it weighs the consequences of each choice and chooses the option which has the most moral outcomes and the resulting decisions often aim to produce the best aggregate consequences. Deontological ethics: the agent is ethical if and only if it respects obligations, duties and rights related to given situations (aka duty ethics or obligation ethics, acting in accordance to established social norms). Virtue ethics: the agent is ethical if and only if it acts and thinks according to some moral values (e.g. bravery, justice, etc.) exhibiting an inner drive to be perceived favourably by others.

Additionally, as computers execute instructions there is a call to consider programmes for control and documentation that demonstrate they behave correctly in any situation that might arise (Parnas, 2017). As the topic is still unfamiliar to many AI practitioners and requiring in depth review (Yu, et al, 2019) a research avenue proposed is to understand how to insert a variety of ethical values pertinent to the task, person, profession and culture contexts in algorithms (Banavar, 2016).

Furthermore, there is a research opportunity to answer questions of where and how acceptable standards for behaviour shall be obtained and what of their components (Munitz, 1958). This can be to engage more with ethics and decision-making communities as a source of reciprocal expertise for pursuing ethical AI technological interdisciplinary development. Also, there is the consideration of establishing regulatory frameworks as soon as possible (Yu, et al., 2019). The proposal is given further validity with reference to debate on AI technologies that states legal and ethical questions will impact AI producers and consumers and that this requires address through law, public policy and ethics input from computer scientists, legal experts, political scientists and ethicists (Russell, Dewey, Tegmark 2015). As has been summarised, policy-makers, academics, researchers, and employers will all need to grasp a changing landscape involving technology continuing to shape the world of work (CIPD, 2017).

Research aspects on ethics presented in this paper can further empirically contribute governance development to the field to ensure a care for human values as computers' make decisions. It can help make more robust the leadership of an emerging future and not be based on only existing predictions predicated on anecdotes of unknown quality, or speculation and reflection (CIPD, 2017). The nature of technological pace is providing great scope for further contribution to explore how emerging technology is shaping the world of work. Research avenues clearly can include ethical issues relative to AI use as it is still currently 'embryonic' (CIPD, 2017, p. 3).

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