Robot Nudging. An Ethical Exploration of an Emerging Practice in Human-Robot Interaction

A nudge is any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives (Thaler and Sunstein 2008). Despite an increasing interest in how AI and other cognitive technologies affect people's behaviour predictably, leading to smart nudging or forms of hyper-nudging (Yeung 2017), robotic technologies have attracted surprisingly little attention in nudging theorisations and processes, thus leaving a gap in existing literature.

Social robotics platforms profoundly impact human perceptions and information processing, in ways much different from other virtual agents (Anerdi and Dario 2022; Dumouchel and Damiano 2017). And robot nudgers are already a reality. Social robots like Pepper have been proved to be more influential than human interlocutors to shape childrens' decision making in educational contexts (Mehenni and al. 2020). Other social robotic platforms have promoted positive behaviour change (Borstein and Arkin 2016), targeting pro-social and pro-environmental behaviours as donation to charities or towel reuse in hotels (Ghazali and al. 2020; Tussyadiah and Miller 2019).

This paper provides an innovative contribution to the debate on the ethics of robot nudging. First, we evaluate how the practice of nudging by social robots is an under-examined aspect of nudge theory. We discuss the thesis that social robots might have the possibility to nudge people in non-standard ways, by influencing cognitive and affective states of people (Rodogno 2020). Second, we demonstrate that this practice requires a peculiar investigation on how and under which circumstances it is likely to trigger ethical concerns related to manipulation and, in general, to arbitrary interference with human cognition. Finally, we identify the relevant ethical aspects concerning nudges' legitimacy and transparency in human-robot interaction, and suggest modalities to integrate them at the the early stages of social robots design (Umbrello and al. 2022).

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