Digital humanism as a bottom-up ethics

Gemma Serrano [a], Francesco Striano [a,b,*], Steven Umbrello [a,b,c]

[a] Département Humanisme Numérique, Collège des Bernardins, 20 Rue de Poissy, 75005 Paris, France
[b] Department of Philosophy and Education Sciences, Università degli Studi di Torino, Via Sant'Ottavio, 20, 10124 Torino, Italy
[c] Center for Religious Studies, Bruno Kessler Foundation, Via Santa Croce, 77, I-38122 Trento, Italy

ARTICLE INFO

ABSTRACT

In this paper, we explore a new perspective on digital humanism, emphasizing the centrality of multi-stakeholder dialogues and a bottom-up approach to surfacing stakeholder values. This approach starkly contrasts with existing frameworks, such as the Vienna Manifesto's top-down digital humanism, which hinges on pre-established first principles. Our approach provides a more flexible, inclusive framework that captures a broader spectrum of ethical considerations, particularly those pertinent to the digital realm. We apply our model to two case studies, comparing the insights generated with those derived from a utilitarian perspective and the Vienna Manifesto's approach. The findings underscore the enhanced effectiveness of our approach in revealing additional, often overlooked stakeholder values, not typically encapsulated by traditional top-down methodologies. Furthermore, this paper positions our digital humanism approach as a powerful tool for framing ethics-by-design, by promoting a narrative that empowers and centralizes stakeholders. As a result, it paves the way for more nuanced, comprehensive ethical considerations in the design and implementation of digital technologies, thereby enriching the existing literature on digital ethics and setting a promising agenda for future research.

Introduction

Since the dawn of the digital age, we have witnessed the profound transformation of our societies, with digital technologies penetrating nearly every aspect of our lives. Scholars and practitioners have grappled with the ethical implications of this transformation, seeking to frame and understand the changes within a coherent ethical context. However, the rapid and unprecedented development of digital technologies poses complex challenges to traditional ethical frameworks, necessitating novel approaches to address the evolving ethical landscape (Floridi & Sanders, 2004; Vallor, 2016).

In the burgeoning field of digital ethics, a key concern is the need for a robust and inclusive ethical approach that can sufficiently navigate the complexities of digital technologies and their impact on diverse stakeholders. This paper addresses this pressing need by proposing a bottom-up approach to digital humanism. Digital Humanism, as a term in the extant literature, can be broadly understood as an attempt to place human values and interests at the centre of the digital transformation. It stems from the recognition that while digital technologies have brought about unprecedented changes and opportunities, they have also raised serious ethical, social, and political concerns that need addressing (Cath et al., 2018). Digital Humanism aims to counterbalance the technology-driven determinism that often dominates the digital sphere, emphasizing that humans should actively shape technology and not just be shaped by it (Fuchs, 2022). The *Vienna Manifesto on Digital Humanism*, for instance, posits an interpretation of digital humanism that stresses the importance of human autonomy, democratic governance, privacy, and diversity in the context of digital technologies (Werthner et al., 2022; Werthner, 2020). While it offers a comprehensive framework, it follows a primarily top-down approach, which this paper argues could be complemented by a more bottom-up, dialogic perspective. This is not to say that our approach is necessarily incompatible with the Viennese approach, nor that the two visions cannot complement each other in certain aspects. On the contrary, it would be appropriate – and we hope so – for channels of communication to be opened between the two, provided that a serious comparative study of the methodologies derived from them is not disregarded. This paper is, among other things, a first attempt to do so, as well as an illustration of the specificity of our approach.

Therefore, unlike conventional ethical frameworks, which often adhere to a top-down methodology, premised on predetermined first principles, our approach advocates for multi-stakeholder dialogues as a

---

means to surface stakeholder values and negotiate the ethical implications of digital technologies. This paper argues that such a bottom-up approach to digital humanism facilitates a more nuanced and comprehensive understanding of the ethical implications of digital technologies, thereby providing a unique contribution to the extant literature.

In seeking to showcase the comparative novelty and effectiveness of our proposed approach, we engage with two case studies. By applying our bottom-up approach and juxtaposing the resultant insights with those derived from a utilitarian perspective and the Vienna Manifesto's approach to digital humanism, we provide a critical evaluation of these disparate ethical frameworks in action.

The paper is organized as follows. Section two offers an in-depth explanation of our bottom-up approach to digital humanism, including its theoretical underpinnings and methodological considerations. In section three, we present the case studies and discuss the application of the three distinct ethical approaches to each case and provide a comparative analysis of the findings from the different approaches. Section four emphasizes the unique insights garnered from our proposed methodology and concludes the paper by summarizing key findings and implications, as well as suggesting avenues for future research.

By adopting a bottom-up approach to digital humanism, this paper aims to broaden the discourse on digital ethics and illuminate the often-overlooked perspectives of diverse stakeholders, thereby offering a more comprehensive, inclusive, and contextually sensitive approach to navigating the ethical challenges of the digital age.

Bernardins' approach to digital humanism

The College des Bernardins' approach to Digital Humanism represents a paradigm shift in understanding the ethics of digital technologies.[1] Unlike the conventional utilitarian perspective that aligns with the refined design of digital technologies and prioritizes welfare and harm calculations (Bednar & Spiekermann-Hoff, 2020), the Bernardins' approach challenges this belief by advocating for a human-centred framework.

The reference to humanism or the advocacy of a human-centred approach can be considered problematic because being humanist is often understood in the sense of "defending" the human. We, on the other hand, believe that being a humanist means *to take responsibility for the fact that we are human*, and that "being human" cannot be reduced to a purely biological or taxonomic fact (Serrano, 2021). Which is why our approach goes beyond preconceived notions of humanity that are independent of technological conditions and instead grounds ethical theory in a profound anthropology. This anthropology involves a detailed contemplation of our relationships with objects, environments, and the intersubjective relationships they facilitate, considering the co-implication of human, social, environmental, and technological contexts.

Building on Milad Doueihi's (2011) reflection and the Vichian philological approach, the Bernardins' humanism integrates technology with culture, treating the digital as a civilisation (Doueihi & Domenicucci, 2018), i.e., a set of symbolic and material structures (languages, institutions, cultures, new objects of worship, new collective beliefs).

---

[1] The *Humanisme Numérique* department of the Collège des Bernardins in Paris is the most advanced French language centre on digital humanism. Inspired by the Syrian-Lebanese scholar Milad Doueihi's theoretical elaborations, the research team that has built up around the Collège over the years has critically analysed the changes induced by digitalisation in culture, the new digital cultural products, and human practices related to virtual environments, through seminars, series of meetings, public lectures, and publications. In May 2024, the department will present its own position paper on digital humanism that will condense almost 10 years of work, which began with the chair "*L'humain au défi du numérique*" held by Doueihi and continued by the department co-chaired by Gemma Serrano and Graziano Lingua.

The great digital turn – or "conversion", in Doueihi's (2008) words – is therefore a technological turn, but also a cultural turn. In this sense, the humanism we propose as a companion to research and technological development in our digital civilisation does not take the form of an attempt to apply pre-constituted values from the outside, so as to regain or defend a human autonomy at risk. Our humanism is justified as a philological analysis of the digital "from within" of digital culture itself.

By philological analysis, we mean an analysis of objects, their origins, and cultural continuities, and of their material characteristics and impact on the human dimension, starting from the physiological level, in the conviction that culture convinces the body first (Doueihi, 2009). This approach refrains from imposing pre-packaged values and instead participates in the intellectual negotiation of technological and cultural changes.

The humanistic approach advocated by the department of Digital Humanism (*Humanisme Numérique*) at the Collège des Bernardins (from now on *Bernardins HN Approach*) emphasizes the significance of a relational anthropology and a cultural theory that encompasses the technological dimension. This perspective challenges traditional views of technology as an isolated entity, instead positioning it within the broader cultural and social fabric. Relational anthropology here implies a deep understanding of how individuals interact with each other and with technology in a symbiotic manner. It seeks to unravel the complex web of relationships between humans and technology, acknowledging how these interactions shape both the technology itself and the societal norms and values.

This approach extends to examining how technology impacts and is impacted by cultural practices, beliefs, and traditions. It recognizes that technology is not merely a tool or an outcome of human ingenuity but is an integral part of our cultural evolution. This recognition leads to a broader understanding of technology, not just as a set of tools and processes, but as a cultural phenomenon that reflects and influences human values, behaviors, and societal structures.

Advocacy for a bottom-up methodology

The philological clarification described in the previous section serves to identify problematic plexuses and to understand what anthropological changes they underlie or contribute to. But the ultimate aim of digital humanism must be to *participate* in the intellectual negotiation (Doueihi & Domenicucci, 2018) of the changes taking place: if technology is culture and the digital is civilisation, then philosophical and cultural work also participates, not by imposing values, but by *negotiating* them and taking on the task of accompanying anthropological changes, constantly mediating between automation and autonomy. This must, therefore, result in a bottom-up ethic.

The bottom-up methodology advocated in this approach emphasizes the active involvement of all stakeholders in the decision-making process related to technological development and implementation. This is along the lines of other approaches that emphasise stakeholder involvement, such as Value Sensitive Design (VSD) (Friedman & Hendry, 2019), especially versions such as that in the wake of the Vienna Manifesto by Zuber et al. (2024), where ethical deliberation takes place in multiple moments and is thus consistent with the concept of negotiation. What distinguishes us is that collectively held values guide deliberative moments in the VSD methodology, while, as will be seen in the following sections, we propose to also focus on narrative dimensions and their influence on value definition. We also sympathise with virtue-oriented approaches (even more so with a civic virtue-oriented approach such as Reijers, 2023), but we believe that while it is important to cultivate agential disposition, it must also be considered that dispositions are sometimes enabled or disabled by the technologies themselves.

Our methodology contrasts with top-down approaches that often see decisions made by a select few, typically those in positions of power or with technical expertise. In contrast, a bottom-up approach

democratizes the process, ensuring that voices from various sectors of society, including those often marginalized or overlooked, are heard and considered.

This inclusive approach is particularly crucial in the digital realm, where technologies can have far-reaching and unforeseen impacts on diverse groups (cf., Trittin-Ulbrich et al., 2021). By involving stakeholders such as end-users, developers, ethicists, cultural theorists, and representatives from marginalized communities, this approach ensures a more holistic understanding of the ethical, social, and cultural implications of digital technologies.

Emphasizing diverse narratives

Central to this humanistic approach is the emphasis on the importance of narratives that reflect diverse perspectives. This aspect acknowledges the power of storytelling and narrative in shaping our understanding and relationship with technology (Reijers & Coeckelbergh, 2020). Narratives from different social, cultural, and economic backgrounds provide a richer, more nuanced view of the digital world and its impacts. They allow for the exploration of how technology affects various groups in society differently, highlighting issues of access, equity, and representation.

Incorporating these diverse narratives into the decision-making and developmental process of digital technologies ensures that the resulting products and policies are more equitable, accessible, and culturally sensitive. This not only enhances the ethical development of technology but also fosters a sense of ownership and responsibility among all stakeholders, leading to more sustainable and beneficial technological solutions.

By expanding on relational anthropology, advocating for a bottom-up methodology, and emphasizing diverse narratives, the Bernardins HN Approach offers a comprehensive framework for understanding and shaping the role of technology in society. It underscores the need for a collaborative, inclusive, and culturally aware approach to the ethical challenges of the digital age.

Demystifying metaphors and describing design processes

This humanistic approach places significant emphasis on *demystifying the metaphors* commonly used in the realm of digital technology (cf., Shneiderman, 2022). Metaphors, while useful for simplifying complex concepts, can often lead to misconceptions or oversimplified understanding of technology. For example, referring to advanced algorithms as "intelligent" or "thinking" machines can obscure the limitations and programmed nature of these systems. By critically examining and demystifying these metaphors, this approach seeks to foster a more accurate and grounded understanding of digital technologies and their capabilities.

With regard to artificial intelligence systems, there are also those who have proposed replacing the term "artificial intelligence" with the term "artificial agent". Luciano Floridi (2023) sees an authentic revolution consisting in having "decoupled the ability to act successfully from the need to be intelligent": a machine cannot "understand, reflect, consider or grasp anything", but that is not necessary to act either. This attempt to focus on agency rather than intelligence may be a first step in the direction of demystifying metaphors, but the step we propose here is a more significant one: what is relevant in order to found an ethical methodology that responds effectively to the challenges of the digital society is the analysis of the structures of a technological object in order to understand what practices it enables and how it modifies human relations with the environment.

In addition to demystifying metaphors, there is a focus on thoroughly describing the design processes behind digital technologies. This involves illuminating the decisions, trade-offs, and considerations that go into the development of technology. By making these processes more transparent, stakeholders gain a deeper insight into how technologies

are shaped and the values and assumptions that drive their development. This transparency can lead to more informed discussions about the ethical and social implications of technology.

A crucial aspect of this approach is challenging the widespread belief in the existence of intelligent machines. This involves questioning the anthropomorphization of technology and highlighting the differences between human intelligence and artificial computation. By doing so, it aims to prevent the overestimation of technology's capabilities and the underestimation of its potential risks and ethical implications.

Furthermore, this approach proposes alternative narratives to the dominant ideologies of an inevitable digital future and the pursuit of maximum profit at the lowest cost. It questions the assumption that technological advancement is always synonymous with progress and challenges the idea that efficiency and profit should be the primary drivers of technological development. By presenting alternative narratives, this approach advocates for a more balanced view of technology, one that considers human values, societal needs, and ethical implications alongside innovation and economic incentives.

Analyzing rhetorical devices and establishing forms of resistance

Analyzing rhetorical devices used in the discourse surrounding digital technologies is another key action. This analysis aims to uncover how language and rhetoric shape perceptions and attitudes towards technology, potentially masking underlying issues or biases. For instance, examining how certain technologies are marketed or discussed in public forums can reveal hidden agendas or unacknowledged risks. In other words, to examine the rhetorical regimes that accompany the design and use of technologies is to *understand and discuss the practices that these technologies enable or disable*.

Establishing forms of resistance (De Certeau, 1984), criticism, and analysis is an integral part of this approach. This means creating spaces and opportunities for critical engagement with technology, where assumptions can be challenged, and alternative perspectives can be heard. Such spaces are essential for preventing the uncritical acceptance of technological solutions and for encouraging a more reflective and deliberative culture around technology development and use.

In sum, the Bernardins HN Approach is not just theoretical but aims to clarify and intervene. It does so by identifying problematic plexuses and understanding anthropological changes, thereby participating in the negotiation of these changes without imposing values but rather mediating them, thus enriching the ethical discourse in the digital age. This approach stands as a non-rigidly normative, context-dependent, attitude-dependent, situation-dependent ethics, which is why we call it "situative ethics."[2]

Application and use cases

In this section of the paper, we aim to demonstrate the practical application and effectiveness of the Bernardins HN Approach through an in-depth analysis of two selected case studies. This analysis will not only underscore the novelty and efficacy of our approach but also provide a comparative understanding of how different ethical frameworks interpret and address ethical dilemmas in the realm of digital technologies.

Each case study will be presented in a structured manner, starting with a detailed description of the case. This will set the stage for a multifaceted analysis, where the case will first be examined through the lens of utilitarian ethics. This examination will highlight how a utilitarian approach, which focuses on the outcomes and consequences of actions, interprets the ethical dimensions of the case. Following this, we will explore the case from the perspective of the Vienna Manifesto's understanding of digital humanism. This will involve assessing the case based

---

[2] We owe the introduction of this term to Antonio Lucci, researcher at the University of Turin and collaborator of the Collège des Bernardins.

on the principles outlined in the Manifesto, such as human autonomy, democratic governance, privacy, and diversity, providing insights into how this top-down approach addresses the ethical challenges presented in the case. Finally, we will apply the Bernardins HN Approach to the same case. This will involve a thorough analysis that incorporates the Collège's emphasis on relational anthropology, the demystification of technology, and the importance of including diverse narratives and stakeholders in the ethical discourse. By juxtaposing our approach with the utilitarian and Vienna Manifesto perspectives, we aim to highlight its unique contributions to the field of digital ethics.

Students and sensors: data, education, privacy, and research

The first case study focuses on the use of student data by universities for various purposes, highlighting a specific instance at the University of Arizona.[3] Here, a researcher analyzed student ID card swipes across campus locations over three years to study student routines and relationships. The aim was to understand these patterns in relation to student retention after their freshman year.

The research involved creating large networks mapping student interactions and analyzing how these interactions and social circles evolved over time. The data used in the study was anonymized, but there was a possibility of sharing personal details with academic advisors to improve student retention. Additionally, the researcher expressed interest in incorporating data from campus Wi-Fi hubs to gain a more accurate picture of student movements and behaviors. The university's use of predictive analytics, which includes about 800 data points per student, was aimed at supporting students in their programs and practices. However, this initiative sparked discussions and concerns about digital privacy. These concerns were highlighted in an Arizona Public Media article (Jess, 2018), where a university professor discussed the lack of student awareness regarding the collection of their data.

Subsequently, an EDUCAUSE Review article titled "Setting the Table: Responsible Use of Student Data in Higher Education" (Kurzweil & Stevens, 2018) reported on a meeting of experts who discussed ethical frameworks for using student data. The article emphasized the need for transparency and clarity in the data collection process, including how students are assessed and the governance of these assessments. However, it did not advocate for students to have the option to opt out of data collection. In contrast, the assistant provost for institutional research at Arizona University suggested that any future use of student ID card tracking for retention efforts would be preceded by a campus conversation, and students would have the option to opt out.

The analysis of on-campus behaviour as well as the application of learning analytics can bring benefits in improving student performance as well as their social interactions. However, there are ethical issues related to privacy concerns, or even to the actual ability to intervene or manage the enormous amount of data generated, which may give rise to some concern (Willis, 2014). This concern can be addressed through different ethical approaches.

The utilitarian approach to student data tracking is based on the maximization of individual and collective well-being. This approach could justify the collection of student data to promote academic success or social relationships of students, but only if it is balanced with respect for privacy and if data collection is justified by a legitimate need and adequately communicated to students. The advantage of applying a utilitarian ethics in the design of such algorithms is that it is an ethics that is immediately applicable, result-oriented, and very suitable for computer technologies that can easily be designed to compute on values of well-being and harm. However, the limitation of this approach is that a calculation on the most functional solution does not necessarily take into account the rights or preferences of the individuals involved. In

addition, the use of nudges to influence student behavior based on data collected from them raises ethical concerns about the potential for manipulation and coercion. It seems important to ensure that the collection of student data is transparent, justified, and balanced with respect for privacy and individual rights.

This need seems to be met by the ethical approach that can be derived from Digital Humanism as conceived by the Vienna Manifesto. This approach to student data tracking considers the right to privacy as non-negotiable and requires explicit consent from students for the collection of data. The results of the analysis should only be used for purposes established by the students themselves. There is also data that should not be collected. Once the parties involved have been consulted, the values chosen should be "instilled" in tracking technologies and any limitations to the pervasiveness of such technologies should be made. The limits of this approach are that it considers privacy a universal right that is not negotiable, even if some students were willing to admit to a certain degree of tracking in exchange for access to data that they would not be able to measure on their own. The rules, regulations, and any intervention aimed at limiting data collection must be established by a public decision-maker, without necessarily going through the parties involved, except in the form of public debate (and consider that, in this case, the university could be the same public entity that decides). Finally, it is more oriented towards modifying existing technologies to make them more ethical than towards rethinking technological solutions.

The applied ethical approach derived from the Bernardins HN Approach, on the other hand, as explained in Section 2, is embodied in a threefold practice, the first of which consists of identifying and demystifying the narratives underlying a certain technology and its application. In the application of these tracking technologies, two narratives are implicit: the first is that of the neutrality of technology, which sees the simple recording of data as something that could become a form of control; the second is the neoliberal narrative that measures academic success in terms of performance. Digital humanism, in its critical part, should be able to reconstruct the genealogy of these narratives and show that other narratives are possible.

Next, one must ask what kind of practices are or can be enabled by the use of the technologies discussed. Students' tracking practices can enable the use of digital technologies to pursue the control of the student population. In this case, it is not a matter of understanding how to make such use more equitable and transparent, but it may be the case of rejecting this application in the name of the interest of the student component in maintaining a certain degree of freedom within the institution. At the same time, the possibility for students to have access to their own data to better design their paths and careers could be enabled based on them. In this case, it would be necessary to understand how to exploit this possibility.

Finally, it is necessary to ensure that the design of technological solutions is truly multi-stakeholder and to think about what types of digital technologies to prepare (free software, decentralized and non-proprietary systems, etc.), as well as who should manage the collection and analysis of data and based on what principles (access and consultation for female students, help on request for their academic decisions, etc.). In addition, space for feedback and the continuous possibility of renegotiation or withdrawal from tracking by those being tracked should be maintained.

Using predictive software in the medical field

The rapid growth of AI in healthcare is accompanied by ethical challenges, including informed consent, algorithmic biases, and data privacy concerns. One key challenge is the complexity of informed consent in AI healthcare applications. Questions arise regarding the extent to which providers should educate patients about AI intricacies, including the types of machine learning used, data inputs, and potential biases. Additionally, the "black box" nature of many AI algorithms,

---

[3] https://www.scu.edu/ethics/focus-areas/internet-ethics/resources/students-and-sensors-data-education-privacy-and-research/

where even creators do not fully understand how decisions are reached, complicates informed consent (Silvers, 2022).

Another concern is ensuring fairness and trustworthiness in AI algorithms. Biases in training data sets can lead to discriminatory outcomes, as evidenced by an AI-based clinical decision-support software that was less accurate for non-white patients due to training on predominantly white patient data. Data privacy is also a critical issue, particularly regarding health care records. The potential misuse or leakage of AI-analyzed health data could impact insurance premiums, employment opportunities, and personal relationships.

In light of these issues, it is possible to imagine a case study on software design in the medical field. Imagine the case of a person who has to decide whether or not to undergo invasive, non-life-saving surgery. Imagine a woman with BRCA1 or BRCA2 gene mutations, or a woman with a relapse of a complex fibroadenoma of the breast. In the first case, she must decide whether to undergo a preventive mastectomy or wait until the carcinoma develops. In the second case, she has to decide whether to have a more conservative operation or a total mastectomy to prevent further relapses. Now imagine a software programme designed to help with decision-making in such situations: its algorithm must be written in such a way that the programme can collect data that takes into account medical, psychological (e.g. satisfaction of previous patients after surgery), aesthetic and social variables; but it must also be able to interact and negotiate with the individual user from time to time, taking into account individual values and preferences. In the end, the software will be able to suggest different outcomes such as success rates, satisfaction rates, testimonials of satisfied or dissatisfied patients.

In addition to the aforementioned privacy issues, one might wonder whether it is licit to delegate a medical consultation to software or whether the doctor-patient relationship is dispensable in the name of efficiency. At the same time, one might consider such software to be a powerful aid in terms of informed consent. Again, following different ethical approaches leads to different conclusions regarding the relationship with the digital technology under consideration.

The utilitarian approach, which aims to maximise the efficacy and speed of surgery and is guided by the patient's best interests, would recommend the use of such technology if it can be shown to increase the likelihood of surgical success and reduce risks to the patient (and this could be the case because it has much greater access to a large amount of data than a human doctor and high computing speed). Furthermore, a technology that takes utilitarian ethical principles into account would recommend surgery if there is strong evidence that the patient would benefit from the procedure. At the same time, however, a utilitarian approach might also consider the social costs of surgery and therefore advise against it if the public health costs and long hospital stays would be too high for patients. Thus, it seems that the utilitarian approach could reach an impasse when it comes to negotiating between individual and collective well-being. Moreover, it could recommend surgery based on the high probability of success without taking into account the impact that considering even a low probability of failure could have on a patient's decision.

The humanist approach of the Vienna Manifesto would allow the use of machine learning to develop technologies that help humans make decisions, but would recommend that the universal values of human dignity and the protection and promotion of health be incorporated into the design. It would also want technology to focus on putting human interests first, even at the expense of greater economic expenditure. However, it would likely want this technology to be used as an aid in the doctor-patient relationship, not as a replacement. The limitation of this approach might still be to focus solely on placing limits on the algorithm (which is always developed based on utilitarian principles to calculate the probability of success) to respect universal human rights, neglecting the concreteness of the doctor- technology-patient relationship, as well as the goal of health as a state of physical, mental, and social well-being and not just the absence of disease or infirmity.

For the Bernardins HN Approach, it is first of all important to clarify

that the decision in favour of a surgical procedure is not only about the probability of success or the economic costs, but that dimensions of individual psychological well-being and individual value decisions must also be taken into account.

Secondly, it must be recognised that the use of decision-making software could disable the patient's freedom of choice, as they would be relying entirely on a black box. Conversely, it could enable more informed decisions if access to information is guaranteed.

Finally, in terms of the practice of designing spaces of resistance, software that follows Bernardins' approach should be software that can collect data on medical, psychological (e.g. satisfaction of other patients), aesthetic and social variables on multiple levels. It should also be able to interact with individual users and negotiate with them about their individual preferences. Ultimately, the software will be able to suggest various outcomes, such as success rates, satisfaction rates and testimonials from satisfied or dissatisfied patients. The software should select and suggest the data and testimonials that best match the main interests of the person deciding in favour of or against surgery (e.g. aesthetic factors, desire to avoid future surgery, etc.). Although the software selects the sources on behalf of the user, it should always leave open the possibility of consulting other sources and make the selection process transparent.

Conclusion

Compared to other approaches, our proposal of a bottom-up ethics is the only one that proposes a truly multi-stakeholder attitude and, by keeping the space for feedback open, allows for genuine democratic renegotiation. For these very reasons, moreover, it would be less likely to be at an impasse due to conflicts of values. The digital ethics derived from the Bernardins HN Approach might be considered by some as difficult to implement due to the amount of time and resources required, since it requires a high degree of collaboration between different stakeholders. We have shown, however, how such an approach can, following a rigorous "philological" methodology, achieve concrete results and provide guidance on both the design and use of digital technologies.

Notwithstanding, we would like to note one last point: digital humanism must be a collective cultural enterprise. When we speak of digital humanism, we do not believe that humanists (philosophers, literary scholars, etc.) should impose rules on their work. Digital humanists are the designers, engineers, linguists, public decision-makers, theologians, philosophers, intellectuals, producers, and users who engage in the enterprise of renegotiating the changes taking place. Our proposal aims to be a contribution to this enterprise, in an attempt to provide guidance to overcome the "alienation that a civilization contains or produces" (Simondon, 2017, 118).

Declaration of competing interest

The author is an Guest Editor for *Journal of Responsible Technologies* and was not involved in the editorial review or the decision to publish this article.

References

Bednar, K., & Spiekermann-Hoff, S. (2020). The power to design: Exploring utilitarianism, deontology and virtue ethics in three technology case studies. *ETHICOMP, 2020*, 396.

Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2018). Artificial intelligence and the 'Good Society': The US, EU, and UK approach. *Science and Engineering Ethics, 24*(2), 505–528.

De Certeau, M. (1984). *The Practice of Everyday Life*. Berkeley: University of California Press.

Doueihi, M. (2008). *La grande conversion numérique*. Paris: Seuil.

Doueihi, M. (2009). *Solitude de l'incomparable: Augustin et spinoza*. Paris: Seuil.

Doueihi, M. (2011). *Pour un humanisme numérique*. Paris: Seuil.

Doueihi, M., & Domenicucci, J. (Eds.). (2018). *La confiance à l'ère numérique*. Paris: Éditions rue d'Ulm.

Floridi, L., & Sanders, J. W. (2004). On the morality of artificial agents. *Minds and Machines, 14*(3), 349–379.

Floridi, L. (2023). AI as *agency without intelligence*: On ChatGPT, large language models, and other generative models. *Philosophy & Technology, 36*. https://doi.org/10.1007/s13347-023-00621-y

Friedman, B., & Hendry, D. G. (2019). *Value sensitive design: Shaping technology with moral imagination*. Cambridge, MA: MIT Press.

Fuchs, C. (2022). *Digital humanism: A philosophy for 21st century digital society*. Bingley, UK: Emerald Publishing Limited.

Jess, S. (2018). Student ID card research raises privacy concerns. *AZPM*. April 3, 2018 https://news.azpm.org/p/news-articles/2018/4/3/126752-catcard-research-raises-privacy-concerns/.

Kurzweil, M., & Stevens, M. (2018). Setting the Table: Responsible Use of Student Data in Higher Education. *EDUCAUSE Review.* May 7, 2018 https://er.educause.edu/articles/2018/5/setting-the-table-responsible-use-of-student-data-in-higher-education.

Reijers, W., & Coeckelbergh, M. (2020). *Narrative and technology ethics*. Cham, Switzerland: Palgrave Macmillan.

Reijers, W. (2023). Technology and civic virtue. *Philosophy & Technology, 36*, 71.

Serrano, G. (Ed.). (2021). *Numérique secundum affectum. Regards interdisciplinaires sur technique et affects*. Paris: Éditions Hermann.

Shneiderman, B. (2022). *Human-centered AI*. Oxford: Oxford University Press.

Silvers, C. (2022). The revolution of artificial intelligence within health care. *Markkula Center for Applied Ethics*. https://www.scu.edu/ethics/healthcare-ethics-blog/the-revolution-of-artificial-intelligence-within-health-care/.

Simondon, G. (2017). *On the mode of existence of technical objects*. Minneapolis: Univocal Publishing.

Trittin-Ulbrich, H., Scherer, A. G., Munro, I., & Whelan, G. (2021). Exploring the dark and unexpected sides of digitalization: Toward a critical agenda. *Organization, 28*(1), 8–25. https://doi.org/10.1177/1350508420968184

Vallor, S. (2016). *Technology and the virtues: A philosophical guide to a future worth wanting*. Oxford: Oxford University Press.

Werthner, H. (2020). The Vienna manifesto on digital humanism. In M. Hengstschläger (Ed.), *Digital transformation and ethics* (pp. 338–357). Ecowin. http://hdl.handle.net/20.500.12708/30434.

Werthner, H., Prem, E., Lee, E. A., & Ghezzi, C. (2022). *Perspectives on digital humanism*. Cham: Springer Nature.

Willis, J. (2014). Learning analytics and ethics: A framework beyond utilitarianism. *EDUCAUSE review*. https://er.educause.edu/articles/2014/8/learning-analytics-and-ethics-a-framework-beyond-utilitarianism.

Zuber, N., Gogoll, J., Kacianka, S., Nida-Rümelin, J., Pretschner, A, et al. (2024). Value-sensitive software design: Ethical deliberation in agile development processes. In H. Werthner, C. Ghezzi, J. Kramer, J. Nida-Rümelin, B. Nuseibeh, E. Prem, et al. (Eds.), *Introduction to digital humanism: A textbook* (pp. 339–357). Cham: Springer.