Physicians' Professional Role in Clinical Care
AI as a Change Agent

Pozzi, Giorgia; van den Hoven, Jeroen

Important note
To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Physicians' Professional Role in Clinical Care: AI as a Change Agent

Giorgia Pozzi & Jeroen van den Hoven

Taylor & Francis
Taylor & Francis Group

OPEN PEER COMMENTARIES

Physicians' Professional Role in Clinical Care: AI as a Change Agent

Giorgia Pozzi [ID] and Jeroen van den Hoven

Delft University of Technology

INTRODUCTION

Doernberg and Truog (2023) provide an insightful analysis of the role of medical professionals in what they call *spheres of morality*. While their framework is useful for inquiring into the moral demands and boundaries of the roles of physicians, we need to prepare for a future where interactions between humans in the health domain will be increasingly mediated, complemented, and supported by powerful artificial intelligence-based (AI) technologies. We argue that AI has implications for the different spheres of morality in healthcare as we know them. More specifically, AI impacts the sphere of clinical care on at least two levels: first, it brings about changes in the patient-physician relationship, and second, it affects physicians' epistemic and moral role directly.

AI IN CLINICAL CARE: PHYSICIANS' ROLES AND RESPONSIBILITIES TOWARD PATIENTS

As Doernberg and Truog (2023) point out, "physicians' moral commitments depend in large part *on the nature of their professional interactions*" (9) (our emphasis). Since AI systems increasingly mediate crucial medical interactions, we focus on how upholding values pertaining to patient-centered medicine within clinical care becomes exceptionally demanding in AI-mediated contexts.

Let us consider the value of patients' epistemic participation as a normative specification of the more overarching goal of shared decision-making in medicine. In standard medical practice, physicians can enable the epistemic participation of patients in different ways. Most notably, it is crucial that they take the testimony of patients seriously (e.g., when they report their symptoms) (Kidd and Carel 2017). Moreover, it is paramount to actively involve them in discussions concerning further courses of medical action. If these activities are performed, *ceteris paribus*, patients' involvement is warranted, and they are treated as full-fledged epistemic subjects.

Introducing AI as an authoritative epistemic entity in clinical care can complicate this situation considerably, particularly in cases where the credibility of patients needs to be assessed (such as in pain management). For instance, it has been pointed out that AI systems used to predict patients' risk of misusing opioids are often considered, by default, more credible than patients' testimony. This impairs the epistemic participation of patients and leads physicians to neglect or unjustifiably dismiss their contributions (Pozzi 2023). In these situations, the mediating role of AI systems can cause a shift back to paternalistic patterns of doctor-patient interactions and communication in which the patient is considered the object rather than the subject of medical practices.

Attributing epistemic authority and privilege to AI systems and their output may thus create an imbalance in giving due consideration to patients' epistemic contributions in clinical decision-making. Professional duties to guard against physicians' computational biases would offset the risk that AI systems overshadow patients' contributions to the medical discourse. However, safeguarding patients' epistemic participation can be demanding, as several constraints and distortions must be considered. One distortion particularly worth mentioning is automation bias, i.e.,

physicians' tendency to over-rely on AI systems without due critical scrutiny. While there is no one-size-fits-all solution to this issue, authors have mentioned the need to educate physicians regarding the possibilities and limitations of AI systems to allow more appropriate interactions (Dratsch et al. 2023). Hence, AI-supported clinical care affects the roles and responsibilities of physicians and requires the development of new skills.

PHYSICIANS' EPISTEMIC DEPENDENCE ON AI SYSTEMS

Let us now turn to the direct impact of AI systems on medical professionals. Physicians performing medical activities in which AI systems play a mediating role often operate within what Van den Hoven dubbed *artificial epistemic niches* (Van den Hoven 1998). These can be defined as knowledge-intensive environments structurally mediated by an (information) technological artifact toward fulfilling a particular (medical) task (e.g., diagnoses, prognoses, or therapy). For example, Hyland et al. (2020) developed an AI system for use in intensive care units to predict patients' probability of circulatory failure and to allow prompt intervention.

Since AI systems arguably provide physicians with the most advanced technological support, medical professionals have a *prima facie* moral reason to follow their recommendations (Van den Hoven 1998). Deciding not to follow the output of the system could only be justified on solid independent grounds. However, physicians often cannot assess the AI output against system-independent reasons *in situ* due to epistemic and practical limitations of working in a particular artificial epistemic niche. These limitations add to the epistemic opacity of AI systems for the clinical user and time pressure to choose a particular course of action since life-critical decisions need to be made reliably in real-time.

The result can be an epistemic dependence of physicians upon the system that is very difficult to alleviate since acting contrary to its output or diverging from its suggestions would qualify as taking a moral risk that cannot be justified then and there. In that case, physicians are *de facto* fully epistemically and morally dependent upon the system and have very little space to think critically and take genuine moral responsibility. Hence, the appropriate design of the AI-mediated epistemic environment (some have referred to it as our "wideware") is paramount to

avoid exposing medical professionals to epistemic dependence (Van den Hoven 1998).

The introduction of AI thus brings the *design* of the epistemic environment to the forefront. This entails, among others, a need to consider the role and responsibility of designers. The latter could be seen as a second-order responsibility, i.e., an obligation to render the niche suitable to safeguard medical professionals' autonomy and responsibility. Doctors, on the other hand, will share in this responsibility—individually and collectively—for they need to ensure that their AI-mediated work environment allows them to do what they ought to in clinical settings. They also need to monitor the conditions for their responsible task performance.

These considerations naturally motivate an inquiry regarding the scope and boundaries of this sphere of morality. Does introducing AI systems in clinical care and the corresponding need to consider designers' roles and responsibilities require its re-shaping? Or should the role of agents indirectly involved in clinical practice remain exogenous to the sphere itself? If so, how can we successfully account for their moral role in impacting patients and physicians? We consider Walzer's idea of the *Spheres of Morality* to provide some initial considerations related to these central questions.

THE LIMITS OF A SPHERE ACCOUNT OF MORAL NORMS IN AI-MEDIATED CLINICAL CARE

Doernberg and Truog's account of spheres of morality strongly resonates with Walzer's influential work on *Spheres of Justice* (1983). According to Walzer, a clear separation of different societal spheres with "their own normative logics" (Taebi, van den Hoven, and Bird 2019, 1627) is functional for a just distribution of goods. For instance, the distribution of medical care, which he locates within the social welfare sphere, should be obtained based on need and not on criteria that pertain to other social spheres (so, not on patients' social status or financial possibilities (Trappenburg 2000)). To prevent normative cross-contamination, we need to practice what Walzer calls "the art of separation" and put "blocked exchanges" at the boundaries of spheres (Walzer 1983).

To conceptualize justice and fundamental moral norms in terms of well-defined spheres, we need to describe established moral practices. Relatedly, Walzer conceives of justice as resting in "the world of meanings that we share" (Trappenburg 2000, 344).

However, as previously pointed out, with the introduction of AI systems in clinical care, the scope and boundaries of this sphere are being redrawn and have become a design issue that needs an explicit normative commitment. AI systems as change agents, i.e., as epistemic entities with a considerable impact on the moral responsibilities of physicians, need to be explicitly accounted for, given the moral demands of the sphere of clinical care.

AI systems challenge the most intuitively shared moral demands on the practice of medicine regarding the fair distribution of healthcare resources. For instance, an AI system used to allocate kidney transplants has turned out to be heavily biased against Black people in the USA, thus reinforcing and further propagating systemic inequalities (Simonite 2020). Similar systems risk shifting the fair allocation of healthcare resources endorsed by Walzer away from the sphere of medical care (e.g., to the market sphere). To prevent this from happening, we need to counteract these and other forms of injustice, including relevant stakeholders in the sphere of clinical care who play a relevant moral role. But the landscape of our moral responsibilities in the face of the novel challenges AI systems bring requires us to expand our view.

Against this background, the question of operationalizing the sphere of clinical care so that AI systems as relevant change agents are successfully integrated into it should be put at center stage. Moreover, further research is needed to consider whether a conception of justice and role responsibility that hinges so heavily on available shared understanding in a descriptive fashion is still appropriate against the novel demands that AI systems create. The latter seems to require a more flexible conception of morality and role responsibility that provides a solid normative backdrop to regulate these systems' function in clinical care.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

ORCID

Giorgia Pozzi (iD) http://orcid.org/0000-0001-8928-5513

REFERENCES

Doernberg, S., and R. Truog. 2023. Spheres of morality: The ethical codes of the medical profession. *The American Journal of Bioethics* 23 (12):8–22. doi:10.1080/15265161.2022.2160514.

Dratsch, T., X. Chen, M. Rezazade Mehrizi, R. Kloeckner, A. Mähringer-Kunz, M. Püsken, B. Baeßler, S. Sauer, D. Maintz, and D. Pinto Dos Santos. 2023. Automation bias in mammography: The impact of artificial intelligence BI-RADS suggestions on reader performance. *Radiology* 307 (4):e222176. doi: 10.1148/radiol.222176.

Hyland, S. L., M. Faltys, M. Hüser, X. Lyu, T. Gumbsch, C. Esteban, C. Bock, M. Horn, M. Moor, B. Rieck, et al. 2020. Early prediction of circulatory failure in the intensive care unit using machine learning. *Nature Medicine* 26 (3):364–73. doi: 10.1038/s41591-020-0789-4.

Kidd, I. J., and H. Carel. 2017. Epistemic injustice and illness. *Journal of Applied Philosophy* 34 (2):172–90. doi: 10.1111/japp.12172.

Pozzi, G. 2023. Testimonial injustice in medical machine learning. *Journal of Medical Ethics* 49 (8):536–40. doi: 10.1136/jme-2022-108630.

Simonite, T. 2020. How an AI system blocked kidney transplants to black patients. *Wired*. https://www.wired.com/story/how-algorithm-blocked-kidney-transplants-black-patients/

Taebi, B., J. van den Hoven, and S. J. Bird. 2019. The importance of ethics in modern universities of technology. *Science and Engineering Ethics* 25 (6):1625–32. doi: 10.1007/s11948-019-00164-6.

Trappenburg, M. 2000. In defence of pure pluralism: Two readings of Walzer's spheres of justice. *Journal of Political Philosophy* 8 (3):343–62. doi: 10.1111/1467-9760.00106.

Van den Hoven, J. 1998. Moral responsibility, public office and information technology. In *Public administration in an information age: A handbook*, ed. I. T. M. Snellen and W. B. van de Donk, vol. 6, 97–112. Amsterdam: IOS Press.

Walzer, M. 1983. *Spheres of justice. A defence of pluralism and equality*. New York: Basic Books.