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COMMENTARY

From an Eco-Relational Approach to Ecologically Responsible Robot Ethics

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Abstract
In this reply, I respond to Joshua C. Gellers' commentary on my article "Not Relational Enough? Towards an Eco-Relational Approach in Robot Ethics" (Puzio, 2024a), in which I present a deeply relational, "eco-relational approach". This approach asserts that it is necessary to consider the relationality with non-human entities such as animals and technology on a deeper level than has been done in robot ethics so far. This disrupts traditional ethical concepts. In his commentary "Not Ecological Enough: A Commentary on an Eco-Relational Approach in Robot Ethics" (2024), Gellers raises criticisms of my method and the consequences of the eco-relational approach. In this reply, I address these criticisms and focus especially on the ecological responsibility of the eco-relational approach.

Keywords Ethics of technology · Environment · Ecological · Non-human · Relational · Robots

1 Introduction

In robot ethics, the important question of how the development and use of robots align with our relationship to the co-world (environment) and the harmful effects technologies have on the co-world are gaining significance. In "Not Ecological Enough: A Commentary on an Eco-Relational Approach in Robot Ethics," Joshua C. Gellers (2024) comments on my article "Not Relational Enough? Towards an Eco-Relational Approach in Robot Ethics" (Puzio, 2024a), in which I present a deeply relational, "eco-relational approach". In this reply, I first briefly summarize my approach in

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Sect. 2, and then address the two criticisms Gellers raises against my approach: in Sect. 3, I address Gellers' criticisms of my method, and in Sect. 4, I discuss the ecological responsibility of an eco-relational approach.[1]

2 The Eco-Relational Approach in Robot Ethics

My eco-relational approach asserts that it is necessary to consider the relationality with non-human entities such as animals and technology on a deeper level than has been done in robot ethics so far. This approach emphasizes the "eco", referring to the entire house in which we live, including animals and robots. In robot ethics, ethical concepts and considerations such as autonomy, agency, and responsibility are often based on properties such as consciousness, sentience, and intelligence, which are attributed only to humans and are solely human-oriented. I have corrected this very abstract, idealized understanding of these properties by reconnecting them to contexts, bodies, and actions. Furthermore, I have shown that our properties and actions are inherently connected with the non-human, which disrupts traditional ethical concepts (e.g., autonomy, agency, and responsibility) and leads to non-human-centered concepts such as "hybrid actions" and "non-human agency". Therefore, I argue that central ethical concepts such as autonomy, agency, and responsibility must include the relationship with non-human entities from the beginning, and not only as a secondary consideration when it comes to friendships and love with robots.

3 The Variety of Relational Approaches

First, Gellers argues that "by focusing on ethical concepts instead of ethical systems, she misses the forest for the trees" (p. 2). He suggests using Deep Ecology, care ethics, general ethics, or New Materialism as starting points for the investigation. It would be beneficial to first differentiate between ethical "concepts" and ethical "systems" to understand how Gellers perceives the differences between them. As enriching, meaningful, and relevant as I find the approaches Gellers mentions, I must reiterate at the outset that my aim was to critique and elucidate the current state of robot ethics from within itself, without presupposing other ethical assumptions and theories – doing so would have missed my research question. Each of the theories Gellers mentions comes with its own challenges and assumptions that would be imposed on robot ethics, rather than allowing an analysis of the current discourse and challenging the specific claims made in robot ethics. For example, this includes how properties and actions are conceptualized or how robots are always perceived as separate entities with which we only form relationships in a secondary step.

Second, Gellers argues that my approach "lacks appreciation for […] internal discrepancies" within environmental ethics and Ubuntu. I am well aware that there are different and sometimes contradictory positions within environmental ethics,

[1] Gellers divides these criticisms into three shortcomings. However, I group them into two here, as the first two are very similar, both concerning the methodology and fitting well together.

Ubuntu, and sub-Saharan African approaches, as well as within the other approaches I reference, such as Japanese techno-animism. Additionally, the positions I cite (e.g., the sub-Saharan African approaches and Ubuntu) already differ among themselves. There is not just one perspective within Ubuntu, techno-animism, or environmental ethics, just as there is not a single perspective in technology ethics or Western philosophy. Therefore, I do not see a lack in my approach for not referencing every stance but rather focusing on those particularly relevant to my context. The goal of mentioning non-Western approaches was to highlight that they offer enriching perspectives that support an eco-relational approach and should receive more consideration in robot ethics which is still very much Western oriented. I believe that research should more strongly connect environmental ethics and technology ethics, as this will be a significant topic for the future.

Third, Gellers criticizes that my article "misrepresents the relational approach in robot ethics, neglecting past treatises and recent innovations", referring to the critique of the properties approach by Mary Anne Warren and his own literature on Mark Coeckelbergh's and David Gunkel's approach. The aim of my article was to analyze the two dominant approaches in robot ethics, namely the properties approach and the modest relational approach by Gunkel and Coeckelbergh. However, I also noted that there are not just these two but many similar approaches (p. 6, 8). In the article, I acknowledged that the properties approach has already been widely criticized in the research (as the Warren's literature from 1997 suggests) and specifically summarized Gunkel's critique because it provided a concise overview for robot ethics (Puzio, 2024a, p. 7, 9). Therefore, the goal was not to discuss the properties approach in depth but to enrich the current robot ethics discussion by examining relational approaches. Additionally, Gellers argues that Coeckelbergh's "properties-as-they-appear-to-us" (p. 3) already considers the "us" as non-anthropocentric, including the non-human world (Gellers, 2020). While this is an interesting idea worth deeper consideration, it remains vague. How is this supposed to work, and how is it genuinely non-anthropocentric? Furthermore, I do not think it is productive to impose our understanding of properties on animals or to attempt to identify a specific perspective of properties they supposedly possess. Here again, it becomes clear that even though anthropocentrism has been widely criticized in research, we struggle to concretely implement a non-anthropocentric approach in practice.

4 Consequences of an Eco-Relational Approach: From Eco-Relational to Ecologically Responsible

Another criticism of Gellers is that the eco-relational approach is "not ecological enough". This raises a second important question about the consequences of an eco-relational approach. Relational approaches are trending in philosophy and are gaining significance in various philosophical fields. At the same time, the question arises whether and how they can be implemented in practice. Nancy S. Jecker addresses this question in her comment on my article ("Extremely Relational Robots: Implications for Law and Ethics" (2024) and argues for a gap (p. 2, 4) between philosophical relational approaches and applied ethics and law. In contrast, I argue in my reply (Puzio,

2024b) that such a gap should not be pursued but rather that these fields should be brought together.

Gellers calls for an "ecologically-sensitive ethical orientation" (p. 1) in robot ethics, which I strongly support. In my article, I focused on highlighting the deep relationships with the non-human and their disruptions of our ethical concepts. I agree with Gellers that robot ethics should not only be eco-relational but also ecologically sound. In Sect. 5, I outlined several points regarding the consequences of an eco-relational approach. For example, it is necessary to clarify what these relationships mean for ethics. We must investigate what relationships are (since, according to a certain understanding, anything can be interpreted as a relationship) and which relationships we consider normatively valuable. This is closely related to the call for environmental protection. Can we derive the special protection of the non-human or our relationships with them from these considerations?

There have already been several attempts in the research to classify and organize the diversity of relationships with the (technological) non-human and then derive practical consequences (e.g., Earp et al., 2021; Gerola et al., 2023). Such and other attempts need to be further developed in future research. The blurring boundaries between humans, animals, and robots (and the many other non-human entities that exist) present us with new challenges. How can we decide how to interact with these different entities when the clear distinction between them becomes fluid? How can we remain capable of action and act responsibly despite all these disruptions?

Gellers refers to literature by Gunkel and Coeckelbergh (2014), which I have cited in my text, that includes both animals and robots but does not formulate these practical consequences of relationality. The parallel between robot-animal relationships is common in research, as I highlighted, and is very popular with Kate Darling (2021), but the concept of relationality remains on the shallow level that I critique in my article. My approach differs from these approaches in that it shows that the relationships between human and non-human are not only on a secondary level, but that we are entangled with them on a much more fundamental level of being, perceiving, and acting. This changes our ethical concepts, such as agency. Gellers also refers to his own book (2020) where he brings together relational approaches, environmental ethics, and technology ethics. While this is an important step in the right direction, this approach remains very vague. For instance, it is unclear how his framework, which considers both the properties of entities and their relations, can be concretely implemented in practice. This concern has also been noted in the reviews of his book (Beaumier, 2022).

Thus, postulating environmentally sound robot ethics is easier than developing it. The path to implementing an eco-relational approach in practice is challenging and long. However, the current growing literature on relational approaches gives me hope that these will soon receive more consideration in both ethics and practice.

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Data Availability Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Declarations

Ethics Approval and Consent to Participate This article does not contain any studies with human participants or animals performed by the author. Because this article does not contain any studies with human participants, informed consent is not relevant.

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References

Beaumier, G. (2022). Book review: Rights for robots: Artificial intelligence, Animal and Environmental Law. Joshua C. Gellers. Routledge, Abingdon (2020), p. 190, $128.00 hardback, open access e-book. In: *Earth System Governance* 11, 100129. https://doi.org/10.1016/j.esg.2021.100129.

Coeckelbergh, M., & Gunkel, D. J. (2014). Facing animals: A Relational, Other-Oriented Approach to Moral Standing. *Journal of Agricultural and Environmental Ethics*, *27*(5), 715–733. https://doi.org/10.1007/s10806-013-9486-3.

Darling, K. (2021). The New Breed: What Our History with Animals Reveals about Our Future with Robots. Henry Holt andCompany

Earp, B. D., McLoughlin, K. L., Monrad, J. T., Clark, M. S., & Crockett, M. J. (2021). How Social Relationships Shape Moral Wrongness Judgments. *Nature Communications*, *12*, 5776. https://doi.org/10.1038/s41467-021-26067-4.

Gellers, J. C. (2024). Not Ecological Enough: A Commentary on an Eco-Relational Approach in Robot Ethics. *Philos. Technol*. 37, 59. https://doi.org/10.1007/s13347-024-00749-5.

Gellers, J. C. (2020). *Rights for Robots: Artificial Intelligence, Animal, and Environmental Law*. Routledge.

Gerola, A., Robaey, Z., & Blok, V. (2023). What Does It Mean to Mimic Nature? A Typology for Biomimetic Design. *Philos. Technol* 36, 65. https://doi.org/10.1007/s13347-023-00665-0.

Jecker, N. S. (2024). Extremely Relational Robots: Implications for Law and Ethics. *Philos Technol*, *37*, 52. https://doi.org/10.1007/s13347-024-00735-x.

Puzio, A. (2024a). Not Relational Enough? Towards an Eco-Relational Approach in Robot Ethics. *Philos. Technol. 37*, 45. https://doi.org/10.1007/s13347-024-00730-2.

Puzio, A. (2024b). Towards an Eco-Relational Approach: Relational Approaches Must Be Applied in Ethics and Law. *Philos Technol*, *37*, 67. https://doi.org/10.1007/s13347-024-00753-9.

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