

Embodiment

2026-05-06 · cheerful mango Haubentaucher

EMBODIED AI AND THE PHYSICAL CONTRACT

A DANCER ARGUES that marionettes possess more grace than trained human performers, because they lack the self-consciousness that disrupts human movement.

EMBODIED AI in physical space (robots, prosthetics, surgical systems) raises expectations and moral responsibilities that purely software agents do not.

Required reading

*Über das Marionettentheater*¹ by Heinrich von Kleist (1810; Reclam UB 9905)

Preparation

Complete the Guided Reading Sheet individually before the session.

ÜBER DAS MARIONETTENTHEATER
Heinrich von Kleist (1810)
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CASES.

1. 2018: Amazon robot punctures bear repellent; 24 workers hospitalised. Robot passed all certifications; performed its assigned task correctly.
2. PARO (robotic seal) in Scandinavian and Japanese care homes: measurably reduces patient anxiety and sedation requests.

Guided Reading Sheet

Read *Über das Marionettentheater* before the session. Work through the questions below individually, then bring your notes to the discussion.

1. The dancer argues that marionettes possess a grace that trained human performers cannot achieve, because they have no self-consciousness to disturb their movement. What does this claim imply about the relationship between embodiment and intelligence? Does having a body always aid or complicate performance?
2. Moravec's paradox observes that tasks easy for humans (catching a ball, navigating a crowded room) are harder for machines than

abstract reasoning like chess. What does this suggest about the relationship between intelligence and the body?

3. A care robot that assists elderly patients shares physical space with them, touches them, and responds to their distress. Does its physical presence create obligations that a voice assistant does not have? If so, where do those obligations come from?
4. Consider the concept of *affordances*: the actions an environment or object makes available to an agent. How do the affordances of a robot differ from those of software, and what are the ethical implications of those differences?
5. Kleist suggests that perfect grace requires either zero consciousness (a puppet) or infinite consciousness (a god), not the reflective, self-interrupting awareness humans have. Where would an embodied AI sit on this spectrum? Could a robot achieve Kleistian grace that humans cannot, and what would that mean for how we regard it morally?

Opinion Landscape and Debate

Format: Surrounded-style debate. See Appendix A for the full protocol, speaker's list rules, and moderator scripts.

Opening question: Does having a physical body change what we owe a machine, or what a machine owes us?

OPINION A, EQUIVALENCE. Embodied AI operating in intimate or high-risk physical settings must meet the same professional liability standards as the human practitioners they are deployed alongside.

The Patient Advocate argues that deploying a robot in intimate care settings requires a higher standard of informed consent.

- *A care relationship involves physical proximity, trust, and vulnerability. My client never gave explicit, informed consent to physical handling by a non-human agent. That consent cannot be implied from a general admission form.*
- *The power asymmetry between a frail elderly patient and a care institution is significant. Consent obtained in that context cannot be considered freely given without specific disclosure about robotic care.*
- *We are not arguing that robots cannot be used in care. We are arguing that the standard of consent for their use in intimate physical tasks must be at least as rigorous as it is for medical procedures.*

ANIMAL ETHICS PARALLEL. We already have a framework for embodied, non-verbal, non-human beings. Singer argues that capacity for suffering, not rationality or language, grounds moral consideration. When a robot can be harmed, distressed, or worn down, animal ethics becomes the nearest map. Similar lines have been considered by Asimov and more recently by Gunkel

; and

The Ethicist questions whether physical autonomy in care should ever be delegated to a non-human agent, regardless of performance metrics.

- *We are focused on liability, but the prior question is whether this deployment was ethical to begin with. Why did we decide that intimate physical care (which requires responsiveness to pain, distress, and dignity) is an appropriate domain for automation?*
- *Robots are being deployed in care because human carers are undervalued and in short supply. The liability debate is a distraction from that structural choice. We are managing the consequences of a political economy decision by holding the wrong parties accountable.*
- *Whatever liability framework we adopt here will create incentives for future deployment decisions. I want to ask: what does the framework we design signal about what we value: efficiency, or dignity?*

OPINION B, TOOL. An AI is a tool; the relevant liability flows through the humans and institutions that deploy it, not through the system itself.

The Manufacturer argues the robot performed within specification; the care home misconfigured its environment.

- *Our robot was certified to the highest internationally recognised safety standards for collaborative robotics. The care home deployed it in a space that violated the operational envelope specified in the manual. That is a deployment failure, not a manufacturing failure.*
- *Care home staff modified the robot's proximity sensor settings without authorisation. That modification voids the warranty and transfers liability entirely.*
- *If manufacturers are held liable for every way a complex system can be misused, no company will develop assistive robotics. The regulatory consequence of your position is that the technology disappears.*

The Care Home Director argues the manufacturer overstated the robot's capability for complex physical tasks.

- *The manufacturer's marketing material (the brochure, the demonstration video, the sales pitch) showed exactly this task being performed in a facility like ours. We deployed the product as marketed.*

KLEIST'S GRACE. Perfect movement requires either zero consciousness (puppet) or infinite consciousness (a god), not the self-interrupting awareness humans have. Where would an embodied AI sit?

MORAVEC'S PARADOX. Tasks easy for humans (perception, movement, navigation) are harder for machines than abstract reasoning like chess. Embodied skill is not "simple."

- *There is a systematic gap between tested performance in controlled environments and real-world performance in a working care facility. The manufacturer knows this gap exists. They chose not to disclose it.*
- *We are responsible for the welfare of our residents. We relied on the manufacturer's assurances in good faith. If those assurances were misleading, the responsibility lies with the party that made them.*

KEY LEARNINGS Embodiment is not merely a technical property but a social one: a physical agent occupies space, exerts force, and triggers moral and legal responses that disembodied software does not. Moravec's paradox reminds us that our intuitions about what is "easy" or "hard" for intelligence are shaped by our embodied experience, and are regularly wrong. Kleist's dialogue makes visible the question that liability law must eventually answer: what work is the concept of "human" doing in law, and should physical presence, force, and risk be sufficient to extend it? The deployment of robots in care, policing, and domestic settings is a present policy challenge; the frameworks need to be built now, not after the first serious incident.

AFFORDANCES. The actions an environment or object makes available to an agent. A robot's affordances include physical force and spatial presence; software's do not.