

The Biological Revolution with Cyborgs: The Integration of Artificial Intelligence and the Human Body

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Remarkable advancements in biotechnology, robotics, and artificial intelligence (AI) are gradually dissolving the traditional boundaries between humans and machines, placing concepts such as cyborgs and post-humanism at the heart of contemporary scientific and philosophical discourse. The notion of the cyborg, inspired by Donna Haraway's Cyborg Theory and Lynn Margulis' Endosymbiosis Theory, emerges as a symbol of humanity's transition into a new era. These hybrid entities, born from the fusion of biological and artificial components, enable a profound integration of biology and engineering through technologies such as brain-computer interfaces, nanorobotics, and biofuel cells. However, significant challenges—including ambiguity in the legal personhood of cyborgs, a widening digital divide, and the escalating energy consumption of data centers—pose critical obstacles to the development of these technologies.

By outlining three plausible future scenarios—human optimization, transhumanism, and cyber-biological ecosystems—this article demonstrates that the path forward depends not only on technological progress but also on a radical rethinking of ethical and social paradigms. Ultimately, the paper emphasizes the necessity of moving beyond anthropocentrism toward ecological coexistence. This transition demands the creation of a cyborg philosophy and global frameworks such as cyber-bio governance, green design standards, and institutions like a Cybernetic United Nations to ensure technological justice. Embracing the fluidity of human identity and fostering interdisciplinary dialogue are key to transforming cyborgs from symbols of domination into catalysts for bio-democracy and ecological balance.

Keywords: Cyborg, Cyborg Philosophy, Fifth Industrial Revolution, Technological Convergence, Hacking of Cyborg Components, Biological Collaboration, Legal Complexity, Technological Justice, Transhumanism

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