



Online Ethics Center
FOR ENGINEERING AND SCIENCE

Online Ethics Center: Using the Film, "The Matrix," in an Engineering Ethics Course

Author(s)

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Description

Suggestions for using the film, *The Matrix*, as a teaching tool in an engineering ethics course.

Body

Using the Film, *The Matrix*, in an Engineering Ethics Course

Much of what is taught in engineering ethics is a matter of practical decision-making and professional responsibility: the avoidance of harm and the doing of good in industrial and technical settings. But what about the questions of metaethics; those issues about which there is deep concern, but also great difficulty in formulating a system of ethics which can be applied to them?

How might students consider, for example, the writing of Ray Kurzweil, and others, who put forth arguments that the evolving intelligent, "spiritual" machine will soon be nearly indistinguishable from its human creator? How do we teach the ethics of

such a daunting, futuristic prediction? How might classroom instruction provide for probing, insightful thinking which would equip our students with the tools they need to navigate such unknown and unfamiliar moral terrain? One helpful pedagogical approach is the use of film. The pedagogical power of using film in an engineering ethics course lies in its ability to uncover otherwise elusive ideas and feelings, while providing a vehicle for constructive thinking, writing, and discussion about them.

The Matrix is a science fictional account of a future where highly intelligent, human-like machines take over and control the human race. In the film, humans have lost the war against our own technological, super intelligent creations. These machines have become the dominant presence on the planet earth and are in need of energy to survive. The massive destruction of the war between humans and machines created a cloud mass that blocks out the sun's rays, and so the most immediate source of energy is humans themselves. The super intelligent machines farm humans through genetic engineering, and maintain their bodies for the heat they produce. But because the human body needs its consciousness to stay alive, the machines must sedate and pacify the human minds. Thus, the creation of a virtual reality termed, "the matrix." The human bodies are wired at birth to a virtual reality program that simulates life on earth before the war. Humans perceive that their state of mind is actual conscious reality, while in fact they live in isolated, confined pods and are unaware of their true condition as energy producing slaves. Loaded into a virtual reality, the human mind has no consciousness of what is real, of self-knowledge or knowledge of the truth. Only a small group of human rebels have gained "enlightenment" to their true condition. A hero among them has the capacity to fight the technological enemy, and to restore self-knowledge to the human race.

While the film is fantastic, it never the less speaks to scientific possibility. The pedagogical move to questions about an ethic of developing technology is easily made through reading the writings of Ray Kurzweil in conjunction with viewing the film, the Matrix. Ray Kurzweil, author of *The Age of Spiritual Machines*, internationally renowned scientist, and computer engineer, is predicting and proclaiming a future in which the human bodily form will become more technological than biological. He says that two and a half million years of DNA based evolution may soon be irreversibly altered by the dominance of technological creations. Through artificial intelligence, quantum computing, nanotechnology and robotics, our brains and bodies will be recreated, reshaped and enhanced in a transformation being fueled in laboratories worldwide. Kurzweil believes that the transhumanist

vision is a matter of technological inevitability: an evolution that is rapidly approaching near time reality. His argument states that because of the Law of Accelerating Returns, the computational powers of our machines will soon far exceed that of the human brain. And, that this artificial intelligence will solve for us the myriad of problems that have plagued the human existence on earth. Kurzweil says that the 21st century will bring radical changes not only to our computational powers, but also to the very nature of human biological existence. What were once dreams and fantasies of human immortality and bodily perfection, limited to our science fiction, arts and religions, are soon to take their place in the domain of technological probability.

Is living immortality morally permissible? Should we protect the integrity of the biological body and mind? Under what circumstances ought we pursue potentially self-destructive technologies? What moral claims can be made on the human consciousness?

To bring into the engineering classroom the moral questions of these developing new technologies requires moving beyond the parameters of ethical principles and rules and into the realm of intuition, emotion, and imagination. Traditional deontology simply cannot be applied to futuristic technologies because life then may in no way resemble what we now know life to be. To approach futuristic ethics in the engineering classroom, we must abandon our rationalistic methodologies and open students to their feelings and even fears, excitements and dreams about the role they will play in the design of the future. Only then can they learn to articulate and define an ethic about the development of technologies that promise such profound changes to the characteristics of human life.

On their own, through popular culture films like the Matrix, our students engage in fantasy about the role technological development might play in the alteration of human meaning and purpose. When the film comes into the formal classroom as subject for papers and dialogue, coupled with theoretical readings on society, ethics and technology, they extend that fantasy into moral imagination. The profundity and richness of the metaphors in the film call forth emotional and analytic responses from the students that are reflective and impassioned. Many of my students feel optimistic and even excited about a technological evolution that could mean stronger, healthier bodies and higher intelligence inside a newly evolved human being. One student, expressing the hope of technology's role in human salvation wrote, Humans are destructive. We pillage the land for natural resources leaving

irrevocable scars. We destroy the ozone with "good" we manufacture and use. We destroy ourselves motivated by some human-conceived cause... The complexity and vastness of the problems we have created for ourselves are well beyond our reach of our current efforts to solve, at least directly. I think the most likely, (and quickest) solution is to create better humans.

Other students express horror and ask what it is that motivates us to continue in our insatiable quest to dominate and control nature, even to the extent of self-obliteration? One such essay states: The problem is that humans lack the ability to see beyond the immediate future: logically, a cell phone or DVD player is not going to result in our extinction. However, our quickness to accept and implement new technologies in our every day lives will be our demise because we are not looking at the future implications of their merging. It is like when you are floating on an inner tube at the edge of the ocean. You close your eyes for what seems like a brief moment, drifting in peaceful unconsciousness, while the tide drags you far away from shore... You only have two choices: paddle back or drown. We, as humans, are floating and what will we do when we realize it? I fear the worse- I am afraid we have already forgotten how to swim.

It seems hopeful that bringing the film into the classroom helps engineering students to become more fully conscious and morally aware of the possibilities that come from the technological creations we make. In identification with varied characters, stimulation from the special effects and fantastical images, and conjecture about the symbolism and metaphor, students find a way to express and understand beyond the confinements of rigid analysis, and into an imaginative realm of possibilities. But when those possibilities become formidable, we can shift away from so called reality into the protection of the matrix. There, the perplexities, tensions and ambiguities have a safe and imaginative haven.

Science fiction films such as The Matrix provide a worthy venue for consideration of the unknown in technology, a vehicle for the expression of our horrors and elations about what life may become through our engineering hands. With moral imagination as a primary analytical tool, engineering students can take hold of the enterprise of meta-ethics, to pursue moral judgments in light of emotion, attitudes, and preferences, through the creative and illuminative power of the human intuition.

Notes

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Use of Materials on the OEC

Resource Type

Educational Activity Description

Topics

Artificial Intelligence and Robotics

Controversies

Emerging Technologies

Governance

Human Enhancement

Law and Public Policy

Privacy and Surveillance

Responsible Innovation

Social Responsibility

Discipline(s)

Biotechnology

Computer Sciences

Computer, Math, and Physical Sciences

Engineering

Life and Environmental Sciences

Nanoscience and Nanotechnology

Research Ethics