

# Good example of humanoid robots and future applications essay

[War](#), [Intelligence](#)



## - Introduction

While humanoid robots are often thought of as robots that look and move exactly like people, this is not necessarily the case. The idea of a humanoid robot includes robots that are completely identical to people, of course, but also encompass any type of robot that has a vaguely humanoid shape. These robots are made to have a body shape that looks like a human body.

There is something psychologically enthralling about robots that share humanoid body shapes; they interest human beings and can form bonds with them. Although current-day robotics are not good enough to create a robot that passes for human, this is the subject of numerous science fiction stories over the years. The existence of robots that look like humans has led to the development of a theory known as the “uncanny valley” theory. This theory states that if a robot looks too human but not perfect, there is a sense that there is something “off” about the face of the robot. Tondu and Bardou (2011) write, “The uncanny effect attached to a highly biomimetic robot would find its origin in a cognitive dissonance faced with a machine felt to be too close to the bound between these two fields. Heider’s balance theory is considered to specify the task dependency of the uncanny valley, which can be expressed by associating to the uncanny valley effect – and so to the uncanny valley depth according to Mori’s graph image – a ‘balance degree of the social situation in which the human-like machine is involved.’”

Humanoid robots have long held the fascination of the public, and will continue to do so. Although the implications for technology and ethics are huge if researchers were to create a humanoid robot that could conceivably pass as human, robotics as a whole seems to be trending in that direction

purely for the scientific advancement of the field.

#### - Public

Public domain robots are humanoid robots that are designed to perform tasks that are for the betterment of society. There are a number of robots that do this already-- GPS robots, for instance, help people find the places that they're going, and so on. It should be noted that artificial intelligence and different types of artificial intelligence are separate from the creation of humanoid robots-- humanoid robots can be created with any level of artificial intelligence. They do not need to be at human or even near-human levels of intelligence to be considered humanoid. The only real requirement for these robots is that they have a human-like body shape.

Public domain robots, on the other hand, would take over tasks normally done by human beings in the hopes that it would make peoples' lives better. For instance, a humanoid robot may become a street sweeper or a traffic cop; they may become the functional equivalents of recordings that play on phone lines to help the user through a pre-conceived process. Although humanoid robots are not used extensively today in these positions, they could become important in the future because of their ambulatory nature. By reducing the number of human beings in these positions, new opportunities could be opened up for humanity in the future; each of these robots offers a new solution to an old problem of staffing.

#### - Private/Personal

Perhaps one of the most interesting and extensive discussions regarding humanoid robots is the discussion of the private-sector and personal robot. Humanity currently has access to some personal robots, like home-

improvement robots; these are generally not humanoid, but do household tasks and chores like sweeping the floor and so on. Solis and Takanishi write that humanoid robots have been developed to perform certain tasks that are designed to take the stress off human beings. They will do tasks like personal assistance and factory work, where they will take the danger away from human beings and the emotional stress on humanity as a whole will be minimized. Regular jobs will be given to these types of robots to make life easier for human beings; the end goal is, of course, to improve humanity's overall standard of living across the world. Globally, the standard of living will probably increase as robots become more and more ubiquitous. These robots will act in the place of humans in menial tasks. If indeed humanity was capable of utilizing humanoid robots in the home, there would be a number of problems that would be solved.

While not always the best solution for robotics, humanoid robots could have an important influence on the future of humanity. In addition to acting as workers, humanoid robots can provide entertainment and companionship to people who need it. According to Solis et al. (2010), the interaction between humans and robots are becoming more and more complex as time goes on. Solis et al. (2010) write that they " have been developing human-like head robots in order to develop new head mechanisms and functions for a humanoid robot that has the ability to communicate naturally with a human by expressing human-like emotion We believed that the Mental Dynamics caused by the stimuli from the internal and external environment is important in expressing emotion Moreover, an internal clock was introduced as an autonomic nerve system to express the activation component of the

Mood Vector. And, we realized the expression of mental transition caused by the stimuli from the internal and external environment of the robot." The complexities of building a humanoid robot that can communicate and interact with human beings on an emotionally intimate level are great; researchers have not been able to create a robot that does this type of interaction yet. However, it is one of the fields of robotics-- the field of making a believably humanoid robot-- that continues to fascinate humanity. It seems as though this type of creation is likely to be chased by researchers until the dream can be realized, for better or worse. There are also a number of applications for robots outside of the personal sphere. Many of these applications are important for industry; robots, especially humanoid robots, will eventually be able to take the place of people in factories and other locations where it is dangerous for human beings to work.

#### - Research and Development

Humanoid robots certainly have an application in research and development. These robots could be used for any number of exciting applications-- they could be used as test subjects to be sent to other planets, for instance, or for long-range space flights. They may have applications in warfare as well; humanoid robotics that are used for warfare would be good tools for fighting troops on the ground. This is one of the more depressing realities of forward development: almost every development has an application in warfare, and humanoid robots-- especially humanoid robots with human or near-human intelligence-- are no exception to this rule.

The abilities of robots are greatly influenced by the levels of artificial intelligence used in their creation. If a robot has only a simplistic algorithm

that is used to power its movements and decisions, then the robot will have limited capabilities. However, with a more advanced artificial intelligence algorithm, the robot will be able to make much more complex and interesting decisions. These robots with advanced artificial intelligence capabilities are the robots that will likely be used for research and development capabilities, likely in the military sector.

#### - Social Determinism and Robotics

Social determinism is a very important theory in the future development of robotics. It is the theory that social interactions develop and influence an individual's behavior; in the context of robotics, it is the theory that interaction and involvement with robots, particularly humanoid robots, will have an influence on behavior. The behavior modified may be an individual's behavior, or it may be the behavior of a group or society as a whole-- the influence of robotics on social determinism will, by and large, be determined by how prevalent robotics become in society. The important thing to note about social determinism is that it is not developed via innate biological factors-- the conflation of events and influences of society and culture as a whole is what guides social determinism.

If culture as a whole becomes used to dealing with robots on a regular basis, especially robots with human or near-human intelligence, it will almost certainly change the direction of human achievement and development.

Developing these types of robots would certainly raise a number of ethical questions that must be answered: how should society treat these beings? Do they have rights? What would have to happen for these beings to be considered autonomous beings, outside of the control of their creators?

These are all questions that will have to be answered in the context of robotics and the new direction of technology.

#### - Technological Determinism

On its face, technological determinism is a separate theory from social determinism. However, when considering robotics, these two theories of determinism go hand in hand. Technological determinism suggests that technology drives social structure and cultural values within a culture or society. Social determinism, again, suggests that cultural values and social interactions shape the direction that a culture will take. With robotics, however, the idea of technological determinism versus social determinism becomes a chicken and egg question. Both social determinants and technological determinants will begin to force the forward movement of both culture and technology. Technological advancements force society to evolve to handle them; these technological advancements will bring about cultural changes that will, in turn, force further technological advancements.

#### - Future of Humanoid Robotics

There is no way to truly foresee the future of humanoid robotics, but there are a number of assumptions that can be made in terms of trends in the industry. For instance, many researchers are working on artificial intelligence that will give humanoid robots more human-like intelligence. Researchers are also straying in the direction of using robots as entertainment-- perhaps because robots used for entertainment are quite effective in engaging the public, and garner more attention from other scientists. Solis et al. (2010) suggest that " applied fields of robots are gradually spreading from the manufacturing industry to the others as one of the important components to

support an aging society. For this purpose, the research on human-robot interaction (HRI) has been an emerging topic of interest for both basic research and customer application. The studies are especially focused on behavioral and cognitive aspects of the interaction and the social contexts surrounding it. As a part of these studies, the term of "roboethics" has been introduced as an approach to discuss the potentialities and the limits of robots in relation to human beings." Roboethics is the response to many of the questions posed by technological and social determinism in the field of robotics; humanoid robots with near-human or human-level intelligence raise many ethical questions.

#### - Conclusions

There are a number of issues that are raised by the existence of humanoid robots in society. There are ethical questions that are raised by the existence of these robots-- at what point do these robots become individual, autonomous individual beings without an "owner"? It is difficult to answer these questions because they are unlike any question that has faced humanity so far. If humanity ever develops a robot that can travel long distances in space, it is questionable whether or not it will be ethical to send those robots into space, especially if the robot is aware of what it is doing. However, despite advances in technology, it is likely that humanity will see more private applications for humanoid robots before the research and development sector develops weaponized humanoid robots; robots for use in entertainment and business are more likely to find a foothold in the market.



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