

# Chapter 7

## The Law of Looks and Artificial Bodies

### Making, Modifying, and Replacing Bodies

Repeating a central theme of this book—at the same time we humans are becoming enhanced with “cyborg” technology—artificially intelligent machines are gaining in intelligence and becoming more like us in shape, appearance, and abilities. In fact, the use of twenty-first century technologies to create artificially intelligent machines are leading to interchangeable, replaceable, and upgradeable bodies that will determine whether our technological inventions are accepted within society or experience discrimination, hostility, and unequal treatment under the law. As our robotic inventions begin to interact with us, I believe they will be subjected to the same prejudices and discrimination that we humans experience in everyday life. With continuing advances in cyborg technologies will our legal systems be sufficient to account for the increased autonomy, intelligence, and humanoid appearance of our robotic inventions? This is an important question because many of the artificially intelligent machines that enter society will bear a strong resemblance to natural humans and will argue that they are sentient and deserving of equal rights such as fundamental human rights and legal personhood status. When humanoid robots evolve to the point where they argue that they are conscious, will we treat them as equals, or will we discriminate against them and deny them equal protection under the law?

In the next decades, as cyborgs become equipped with technologies that enhance their abilities and robots move from assembly lines to our homes, determining what constitutes the ethical treatment of technologically enhanced beings and whether they should receive equal protection under the law will become important. For example, should robots that convince us that they are self-aware receive the same protections afforded humans under various laws, statutes, and constitutions? And if a robot was designed to physically resemble a human and if that form was combined with artificial intelligence, would we feel compelled to treat it as human? The answer to questions which focus on the rights that our

technological progeny should receive will surely depend, among other factors, on the appearance of the artificial intelligence, its personality, and its behavior. But as a preliminary observation, it seems reasonable to expect that cyborgs and androids will be subjected to different forms of discrimination based on their “machine-like” appearance; if so, society should be prepared for conflicts between artificially intelligent machines and humans. I base this conclusion on social science studies on discrimination, on the hostile treatment already experienced by cyborgs in different circumstances, and on the observations of roboticists indicating that when robots closely resemble humans in appearance, people may feel uncomfortable in their presence. This phenomenon, identified by Professor Masahiro Mori as the “uncanny valley” is so important for an emerging law of cyborgs and artificially intelligent machines (especially those that appear as androids) that a section of this chapter focuses specifically on the “uncanny valley” phenomena.

To some futurists, the possibility that humanity could use technology to create qualitatively new kinds of beings is not only desirable, but likely to happen this century. According to physicist Sydney Perkowitz, writing in *The Rise of Digital People: From Bionic Humans to Androids*, these might take the form of fully artificial, intelligent, and conscious machines; they might take the form of a race of “cyborgs” that are enormously augmented and extended physically, mentally, and emotionally; or they might take the form of virtual beings who may or may not inhabit physical bodies at all.<sup>1</sup> In addition, new forms of humans could arise from techniques in biological science such as cloning, genetic engineering, and stem-cell research. However, as noted by Stanford’s Francis Fukuyama, in *Our Posthuman Future: Consequences of the Biotechnology Revolution*, a program for changing humans at the genetic level has moral, ethical, and religious implications; and the consequences of human-induced changes propagating in our gene pool is troubling.<sup>2</sup> But whatever form our technological inventions take, as they become smart, enter society, and compete against us, they may evoke fear, negative reactions, and be subjected to discrimination from humans (and by other artificially intelligent machines?). For this reason, in the coming decades, legislators will need to determine the appropriate law and policies to enact to protect the basic rights of all intelligent beings amongst us.

In my vision of future technological trends those who worry about changes in the genome may be missing the bigger picture as the law of accelerating returns suggests that the future may not be one dominated by biologically enhanced humans, but by technologically enhanced people, leading to a race of cyborgs and later this century to a merger between “human-cyborg” combinations and artificially intelligent machines. On the latter point, University of Michigan’s Jennifer Robertson, has commented that the idea that humans and machines may meld into a new superior species, is not only being considered but actively being pursued by

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<sup>1</sup>Sydney Perkowitz, 2004, *Digital People from Bionic Humans to Androids*, Joseph Henry Press.

<sup>2</sup>Francis Fukuyama, 2003, *Our Posthuman Future: Consequences of the Biotechnology Revolution*, Picador.

leading Japanese roboticists.<sup>3</sup> And as we head toward the Singularity, the creation of cyborgs and intelligent machines has its own set of ethical and legal issues. In fact, some commentators think that cyborg technologies combined with artificial intelligence might ultimately prove more challenging and dangerous to humanity than those arising from genetic manipulation. However, before we get to the point in time where artificial super intelligence is posing an existential threat to humanity, cyborgs and androids will have already entered society and be subjected to prejudice and discrimination from humans, it is that particular scenario and time-frame that is addressed in this chapter on “*The Law of Looks and Artificial Bodies.*”

The idea that the physical appearance of our technological progeny could lead to discrimination against them, can be gleaned from numerous sources including cases heard by the highest court in the U.S. For example, in *McCleskey v. Kemp*, the Supreme Court in deciding a sentencing issue for a convicted defendant, made the point in dicta that appearance discrimination may in fact be an extenuating factor in criminal law cases.<sup>4</sup> If discrimination exists for humans in our court system and job market, surely it will exist for cyborgs and androids interacting with us in social contexts and competing against us for jobs. In fact, that people may feel uncomfortable in the presence of those equipped with cyborg technology and then discriminate against them is often the subject of employment lawsuits brought in the U.S. under the *Americans with Disabilities Act* and other anti-discrimination laws.<sup>5</sup> But more generally, the appearance of cyborgs and any intelligent machine that enters society could become a contentious issue if their appearance deviates from societal standards of shape, form, and beauty. On this point, studies have shown that there is a high level of agreement among people in their ratings of other people’s physical attractiveness,<sup>6</sup> and I would expect this finding to also hold true for androids designed to appear as human as possible.

Given exponentially accelerating technologies leading the way to a world of intelligent machines interacting with humans in a variety of social settings, what public policy should guide their design, and how should courts respond to the possibility of unequal treatment for our technological inventions based on their appearance? As we discuss these questions and develop solutions, we should proceed with caution, as in the future, it may be unenhanced humans that are discriminated against by our smart robotic inventions, therefore, it is critical that we consider the policies and laws which will lead to an egalitarian society consisting of those with flesh and those without. This chapter discusses such issues in the context of the look and appearance of artificially intelligent machines most often appearing in a human form as an android. Least the reader think that a *Law of Looks and Artificial Bodies* is a topic that has yet to receive attention

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<sup>3</sup>Jennifer Robinson, 2010, Gendering Humanoid Robots, Robo-Sexism in Japan, *Body and Society*, V. 16, 1–36.

<sup>4</sup>*McCleskey v. Kemp*, 481 U.S. 279 (1987).

<sup>5</sup>See generally, *Fink v. Kitzman*, 881 F.Supp. 1347, 1369–70 (N.D. Iowa 1995).

<sup>6</sup>Gordon L. Patzer, 1985, *The Physical Attractiveness Phenomena*, Springer.

from different legal jurisdictions, there is an emerging “*Law of Looks*” based on cases and statutes dealing with employment and other situations. Important issues include *inter alia*, the regulation of “freak shows,” cases brought under the *Americans with Disability Act* (ADA), cases dealing with malfunctioning prosthesis, and the rights one has to their appearance under intellectual property law. I discuss these laws in light of the coming cyborg age and our eventual merger with artificially intelligent machines.

At the beginning of this chapter, I should make the point that in our cyborg future not all people will discriminate against artificially intelligent machines, nor will all artificially intelligent machines be subjected to discrimination. Much will depend on the culture in which the machine is immersed, the features and behavior of the intelligent machine, the tasks for which it is designed, and the policies we humans adopt. Interestingly, Kate Darling of MIT has shown that humans tend to anthropomorphize our robotic inventions; reading her papers I get the impression that we are predisposed to like them.<sup>7</sup> If their behavior is autonomous and if we are interacting with robots in a social setting, Darling observes that they may inspire “fondness and loyalty” from us.<sup>8</sup> We may even treat them as if they were alive. Thinking about rights, Darling proposes enacting “protective laws” for our robotic inventions, just as has been done for pets. I am willing to go much farther in my view of laws needed to protect the rights of androids and other forms of artificial intelligence because I think they will be much smarter than pets and fairly soon.

So to summarize, why a chapter on “lookism” discrimination for our future technological inventions? Because tension between humans and artificially intelligent machines will surely develop as they get smarter and more autonomous, and many studies from social science indicate that appearance has much to say about the treatment and rights a person receives. But most importantly, if we can learn how to integrate cyborgs, androids, and artificially intelligent machines into society now, we may be establishing precedence on how “they” will treat us once our technological inventions exceed us in intelligence and performance (and become more attractive than us?). So the stakes for humanity are high. This chapter on *The Law of Looks and Artificial Bodies* discusses the law and policies which relate to the appearance of technologically enhanced beings and whether equal protection under the law should apply to our future robotic inventions while also considering whether other legal theories exist to protect our artificially intelligent progeny from discrimination.<sup>9</sup>

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<sup>7</sup>Kate Darling, Extending Legal Rights to Social Robots, 2012, *We Robot Conference*, University of Miami, April 2012 MIT; Gregory McNeal, 2015, MIT Researchers Discover Whether We Feel Empathy For Robots, at: <http://www.forbes.com/sites/gregorymcneal/2015/04/10/want-people-to-like-your-robot-name-it-frank-give-it-a-story/>.

<sup>8</sup>Kate Darling, *id.*

<sup>9</sup>R. George Wright, Person 2.0: Enhanced and Unenhanced and the Equal Protection of the Laws, QLR, Vol. 23, 2005.

## The Shape of Things to Come

Though numerous examples are provided in this chapter, the reader should already have a sense of what forms androids and artificially intelligent machines may take in the future. This is because cyborgs, androids, and artificially intelligent machines have been the subject of sci-fi novels and movies for some time. In fact, as science fiction novels have been adopted for movies and TV shows, the public has been exposed to a range of fascinating images of artificially intelligent entities. Interestingly, in science fiction novels, the tension between non-enhanced people and androids is one way that authors have explored the meaning of humanity and discussed the idea of legal rights for nonhuman beings. Some of the artificially intelligent machines displayed by the media are human-like in form and ready to serve us, while others appear as ominous and threatening creatures participating in uprisings against the human race. On the last point consider the androids of 1973s futuristic theme park *Westworld*, authored by Michael Crichton, who after the computer controlling them malfunctioned, purposively hunted down and killed the human visitors. A more realistic scenario for our cyborg future, at least in the next two decades, is that exponentially improving technologies will lead to the emergence of cyborgs and androids whose abilities and appearance will begin to match those of unenhanced humans. The question then will be whether our technological inventions will experience discrimination as they enter society, begin to interact with us, and compete against us for jobs. Because a person's appearance has much to say about the treatment they receive in society and whether they are discriminated against in the workplace, in social settings, and by our institutions, it is important to explore how technological enhancements to the bodies of cyborgs, androids, and artificially intelligent machines will likewise affect the treatment they receive.

An android is a robot, but a robot designed to look and act like a human, especially one with a body having a flesh-like resemblance. Professor Jennifer Robertson of the University of Michigan has stated that to be called a humanoid a robot "must meet two criteria: it has to have a body that resembles a human and it has to act like a human in environments designed for the capabilities of a human body."<sup>10</sup> In robotics laboratories around the world, several projects aiming to create androids that look, and, to a certain degree, speak or act like a human being have made remarkable progress. Smart androids are coming, and their human-like appearance and intelligence will fundamentally change society and place stress on our legal systems, social institutions, and labor market. In fact, a 2013 study from Oxford University examined 702 occupations and concluded that forty-seven percent of the total U.S. employment faces the risk of being eliminated in favor of computerization.<sup>11</sup> One example of our competition in the service industry is the

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<sup>10</sup>Jennifer Robertson, *id.*, note 3.

<sup>11</sup>Carol Benedikt Frey and Michael A. Osborne, 2013, *The Future of Employment: How Susceptible are Jobs to Computerisation?* at: 2013 study from Oxford University examined 702 occupations and concluded that forty-seven percent of the total U.S. employment faces the risk of being eliminated in favor of computerization.

*Botlr* robot developed by startup *Savioke* which is being deployed in some properties of the Starwood hotel chain. The robot's task is to deliver extra towels and forgotten toiletries to hotel guests, I have to wonder, in hotels around the world how many humans do this job now and how will they feel about the robots which displace them?

Many types of technological enhancements will be available in the future, creating a range of shapes, forms, and looks for our technological inventions. On this point, Professor Perkowitz, asks what human attributes in shape and form should continue as we develop the capability to enhance ourselves with cyborg technology.<sup>12</sup> Should we continue to appear in the shape of biological humans, or would some other shape be more functional? Many roboticists foresee a world with increasing interaction between humans and robots, and therefore are working to create human-like androids so that our intelligent inventions more easily fit into human society. However, in contrast to this humancentric view of what a robot should look like, the idea that intelligent robots may take nonhuman forms, is not only possible, but for a particular task, desirable. How will people react to highly intelligent machines that take on shapes and forms which deviate from the human form, or, on the other hand, look strikingly similar to humans—in the latter case will we expect more from our human analogs and also discriminate more against them? As our bodies become equipped with cyborg technologies how should the law, in particular, the principle of equal protection under the law respond to the possibility of unequal and dramatic human, android, and robotic enhancement?

In fact, roboticists often take their design cues from nature—and for androids, humans in particular. For example, robots working on assembly lines or being designed as human helpers feature arms and end effectors to manipulate objects, whether it's a welding gun or laser scalpel. According to Larry Greenemeier, other robots, “designed as telepresence surrogates for remote office workers or aids for the elderly and disabled, come equipped with head-mounted cameras for eyes and wheels for upright motion to mimic human locomotion.”<sup>13</sup> He also thinks it's tempting to think today's robots as only crude imitations of their human masters because most current robots do not look human; however, within a decade, intelligent human-like robots (i.e., androids) will have entered society spurred by significant progress in the design of flesh-like surfaces, the accurate control of facial features, and motor capabilities which are improving significantly.

Thinking about the future, as I noted in an previous chapter, Sidney Perkowitz of Emery University discusses two main ways to categorize artificial enhancements of humans: the first is as functional prosthetic devices and implants, such as artificial limbs, replacement knees and hips, and vascular stents; and the second as

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<sup>12</sup>Sydney Perkowitz, *id.*, note 1.

<sup>13</sup>Larry Greenemeier, 2013, What Should a Robot Look Like? at: <http://www.scientificamerican.com/article/what-should-a-robot-look-like/>.

cosmetic enhancements. For religious and cultural reasons, and as a form of self-expression, humans have always shown an interest to modify their body and to change their appearance. According to David DeGrazia, Professor of Philosophy at George Washington University, we diet, exercise, color our hair, get tattoos and body piercings; and as I noted in a previous chapter we modify our body with a range of technologies that are either worn on, or implanted under the skin.<sup>14</sup> Given that cyborg devices are exponentially improving technologies, by midcentury we can expect major alterations and augmentations to the human body to result from advances in exoskeletons, prosthesis (such as limb, cochlear, or retinal), heart pacemakers, sensors, and neuroprosthesis. In addition, as I discussed in the chapter on *Modifying, Enhancing, and Hacking the Body*, there is a movement among do-it-yourself hackers (or grinders) to self-modify their body with technology; and such changes often alter the appearance of the person modifying their body. But to (re)state the “big picture” of our cyborg future, technologies to repair, enhance, and modify the body are not only exponentially improving technologies,<sup>15</sup> but the very technologies leading humanity to a cyborg future and eventual merger with artificially intelligent machines.

The extent to which cyborgs and androids are accepted by humans as they join society will depend on a number of factors including the tasks they are designed to perform, their personality, and their appearance. Given human biases about “looks,” and given that any shape can be fabricated, would the law and societal standards dictate that only humanoid shapes copying the image of an “attractive” (and young?) human be allowed for androids? Just consider, according to Professor Jennifer Robertson, in 2010 there were more than sixty household robots commercially available in a range of sizes and shapes, serving as cleaners, companions, and caregivers. But improving under the law of accelerating returns, as androids get smarter will they be content to serve as our domestic servants, and will they be content to look as we want them to look and do only what we ask of them? Of course, as of the time of this writing humans write the software and design the robots; but eventually that will change. Already software bots with increasingly sophisticated algorithms are making lucrative stock trades, and other AIs are diagnosing medical illness, composing music, proving mathematical theorems, and driving a car (would an AI driving a car, assume the identity of the car, would a “fender-bender” be the equivalent of an assault and battery?). As a policy issue, humanity should be well aware that any form of discrimination against our technological progeny once they become smart, could backfire and prove disastrous to the human race.

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<sup>14</sup>David DeGrazia, 2005, Enhancement Technologies and Human Identity, *Journal of Medicine and Philosophy*, Vol. 30, 261–283.

<sup>15</sup>Peter H. Diamandis, 2015, *Bold: How to Go Big, Create Wealth and Impact the World*, Simon & Schuster.

## The Androids Are Coming

As humans become enhanced with cyborg technology, and as artificially intelligent machines become more human-like in appearance, the issue of bodily integrity will become an important topic for “*The Law of Looks and Artificial Bodies*.” In fact, one of the most fundamental human rights is the right to bodily integrity which is the right to exert security or control over one’s body.<sup>16</sup> A right of bodily integrity for intelligent machines could be used by an android to protect its body from unwanted modifications, or even to stop someone from scavenging its parts for another machine. I should point out here that there are laws regulating organ donation for humans, should similar laws exist for androids?<sup>17</sup> The reader may be wondering, why would an artificially intelligent machine resist a modification to its body, or for that matter its “mind”? Just as humans may decide to adopt technology, so too may an artificially intelligent machine. But just as humans may resist changes to their body, for example, forced medication to make a person mentally competent to stand trial, so too may intelligent and self-aware machines resist upgrades deemed undesirable by them (e.g., an upgrade which could affect their memories). Of course, as long as artificially intelligent machines lack rights, they are subject to human decisions; but they are quickly getting smarter, so I believe it’s just a matter of time before they will want to make decisions regarding their bodily and mental integrity.

In the U.S. the Supreme Court has repeatedly held that there is a right to be free from unjustified intrusions on personal bodily integrity; suggesting that such a right is protected by the due process clause of the Fourteenth Amendment.<sup>18</sup> Perhaps androids will be particularly interested in protecting the integrity of their body out of self-preservation or even vanity. Once artificially intelligent machines experience emotions and connection to their body, they may be concerned with how others perceive them; in fact, having emotions may be a necessary condition before an android would make the decision to pursue a discrimination claim. As noted above, androids may even argue for the right to receive technological enhancements (upgrades could avoid a digital divide between androids), including cosmetic enhancements, which may serve no functional purpose whatsoever. As we will see

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<sup>16</sup>See generally Barbro Björkman and Sven Ove Hansson, “Bodily rights and property rights”, *Journal of Medical Ethics* 32: 209–214, 2006; Radhika Rao, Property, Privacy, and the Human Body, 2000, 80 B.U.L. Rev. 359. Legislation and Policy (on organ donations), U.S. Department of Health and Human Services, at: <http://www.organdonor.gov/legislation/>.

<sup>17</sup>Legislation and Policy (on organ donations), U.S. Department of Health and Human Services, at: <http://www.organdonor.gov/legislation/>.

<sup>18</sup>Fourth Amendment Victory: Citing Bodily Integrity, U.S. Supreme Court Prohibits Police from Forcibly Taking Warrantless Blood Samples from DUI Suspects, The Rutherford Institute, 2013, at: [https://www.rutherford.org/publications\\_resources/on\\_the\\_front\\_lines/fourth\\_amendment\\_victory\\_citing\\_bodily\\_integrity\\_us\\_supreme\\_court\\_prohibits](https://www.rutherford.org/publications_resources/on_the_front_lines/fourth_amendment_victory_citing_bodily_integrity_us_supreme_court_prohibits); Missouri v. McNeely, 2012, U.S. Supreme Court, Slip Opinion at: [http://www.supremecourt.gov/opinions/12pdf/11-1425\\_cb8e.pdf](http://www.supremecourt.gov/opinions/12pdf/11-1425_cb8e.pdf).



in a later section of this chapter, any nonfunctional additions to an android has implications for the rights it may receive under intellectual property law.

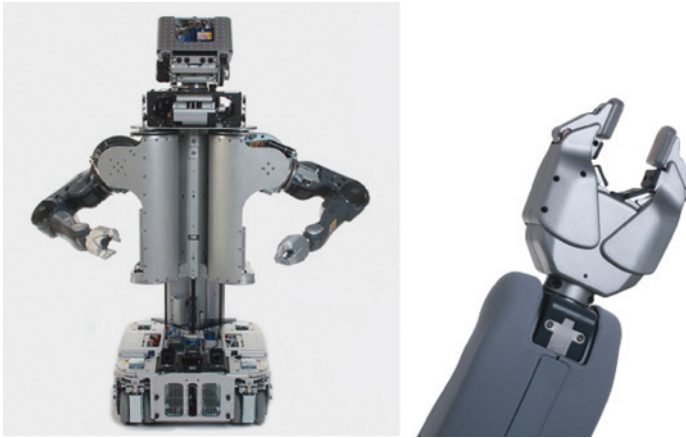
Some may think that robots with emotions sounds strange, or unnecessary. But many designers of robots realize that they will increasingly interact with people as they enter society, so there is a movement to design life-like social robots (i.e., androids) that can detect human emotion, and can mimic human expression and emotion.<sup>19</sup> In my view, robots and androids with emotions and personalities will strongly influence how we react to them, and their level of acceptance in society. One example of this idea is *Pepper*, a robot built in Japan that can detect and express a range of emotions. *Pepper* stands 4 feet tall and weighs about 62 pounds, has facial-recognition technology, and is equipped with a number of cameras, audio recorders, and sensors. According to *Softbank*, a Japanese internet company, *Pepper* can read and respond to users' moods. In another example of developments in robotics, researchers at the *Korea Institute of Industrial Technology* built the android *EveR-3* (one of a series of female androids), which uses an interpersonal communications model to emulate human emotional expression via facial "musculature." *EveR-3* can engage in rudimentary conversation and matches the average figure of a Korean woman in her twenties (notice the selected appearance of *EveR-3*). A microchip inside her artificial brain allows *EveR-3* to engage in gesture expression and body coordination. Her whole body is made of highly advanced synthetic jelly silicon and with artificial joints in her face, neck, and lower body; she is able to demonstrate realistic facial expressions and sing while simultaneously dancing; skills I barely possess.

While *Pepper* is clearly a mechanical being with no biological parts, an important question for the coming cyborg age is at what point in the process of integrating technology into a person's body will the person be considered more machine and less human? And if this distinction is deemed important for law and policy, at what point will the appearance of enhanced humans and artificially intelligent machines be so different that they will need to be protected from discrimination based on their appearance? In the future, the lines between human and machine will be irrevocably blurred, and with that transition will come a whole new set of issues in need of attention by our courts. For example, will the distinction between human and machine make a difference in terms of how the law views such enhanced people?

Specific advances in robotic and android design are not only creating the technology to compete against humans in the job market, but I believe are also leading the way to our future to merge with artificially intelligent machines. For example, consider the robot that was designed by *Willow Garage*, *PR2* (Fig. 7.1), which uses a conventional gripper to manipulate objects—advanced as it is, this robot will be a distant relative of androids on the future human-machine family tree. In fact, since *PR2* rapid progress has already been made in the design of artificial

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<sup>19</sup>See articles published in the *International Journal of Social Robotics*; and the *Journal of Human-Robotic Interaction*.



**Fig. 7.1** Meet PR2, designed by Willow Garage. Images courtesy of Bob Bauer

hands that far more resemble human hands in look and manual dexterity. My sense is that if we are destined to merge with machines, a form mimicking that of humans would be desirable (at least initially for first adopters); therefore, advances in robotics producing limbs and arms that look and function like their biological equivalent are a step forward in the direction of a human-machine merger.

To emphasize how robotic design combined with artificial intelligence is especially powerful in creating our future technological progeny, consider that rapid progress in machine learning is helping robots perform far more sophisticated object manipulation than just a few years ago. A key breakthrough in this area came in 2006, when a group of researchers led by Andrew Ng, then at Stanford and now at Chinese Internet company *Baidu*, devised a way for robots to work out how to manipulate unfamiliar objects.<sup>20</sup> Instead of writing rules for how to grasp a specific object or shape, the researchers enabled their robot to study thousands of 3D images and learn to recognize which types of grip would work for different shapes. This allowed the robot to figure out suitable grips for new objects. Progress marches on, and in recent years robotics researchers have increasingly used a powerful machine-learning approach known as deep learning to improve these capabilities. However, the smarter the machine and the more dexterous it is, the more it will become like us, and in the short-term the more it will compete against us, that is, before we become the technology.

But before we become “them,” that is, become our “mind children” using a term coined by robotics expert Hans Moravec, what is the likely response by

<sup>20</sup>Ian Lenz, Honglak Lee, and Ashutosh Saxena, 2013, Deep Learning for Detecting Robotic Grasps, *Robotics: Science and Systems (RSS)*; Honglak Lee, Yirong Shen, Chih-Han Yu, Gurjeet Singh, and Andrew Y. Ng, 2006, Quadruped Robot Obstacle Negotiation via Reinforcement Learning, In Proceedings of the IEEE International Conference on Robotics and Automation.

humans to machines supplanting them from the workplace? That humans may discriminate against machines that compete against them is made clear by history. An example is the Luddite movement of the early Eighteenth century when English textile workers were threatened with unemployment by new technology, which the Luddites defined as “machinery hurtful to commonality.”<sup>21</sup> Mills were burned, machinery was smashed, and the army was mobilized. At one time, according to historian Eric Hobsbawm, there were more soldiers fighting the Luddites than were fighting Napoleon in Spain.<sup>22</sup> In response to the Luddite movement, the British Parliament passed a bill making machine-smashing a capital offense. You have to wonder—if you “smash” a robot in the coming cyborg age, under criminal law statutes will such an act constitute a capital offense? If not, how about if you “smashed” an android that looked and acted like a human? If so, would we be more compelled to grant the android the right to be free from human hostility, discrimination, and physical assault?

As technology marches on, cyborgs and artificially intelligent machines are joining society and taking on an appearance that may distinguish them from unenhanced people, often with added capabilities (for example, cameras to film others) that may impact other people’s rights (such as their right to privacy). At the same time androids are just leaving robotics laboratories equipped with increasing levels of intelligence and closeness to humans in form and appearance (whether they are designed to look like us or not, interesting legal and social issues still arise just by nature of their increased intelligence). On this last point, consider the work of Professor Hiroshi Kobayashi who directs the *Intelligent Mechatronics Lab* at the Tokyo University of Science. Hiroshi’s team has created an android called *Saya* which works at the University as a guide. *Saya* is able to express human-like facial expressions and can communicate some basic emotions with her head and eye movements. As remarkable a technological feat that *Saya* and for that matter androids created at the *Korean Institute of Industrial Technology’s* (e.g., *EveR-3*) are, they will be replaced by smarter and even more realistic androids within a few years. And just a few decades later, *Saya’s* and *EveR-3’s* relatives will claim that they are conscious and deserving of the rights humans receive. They may even demand additional rights and why not, they will be much smarter than us and have bodies that exceed our capabilities. Once androids reach a certain level of intelligence, such that they argue for rights, it seems likely they will argue for equal rights (and other liberties). Further down the road, we humans will be the ones arguing for human rights from our technologically superior progeny, that is, if we haven’t already become them.

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<sup>21</sup>The Luddites at 200, 21st Century Technology Debates & Politics, 2015, at: <http://www.luddites200.org.uk/TechnologyPoliticsNow.html>.

<sup>22</sup>Bryan Appleyard, 2014, New Republic, The New Luddites: Why Former Digital Prophets Are Turning Against Tech, at: <http://www.newrepublic.com/article/119347/neo-luddisms-tech-skepticism>.

## Culture Is Important

As an example of the acceptance of androids into society, consider Toshiba's use of a robo-assistant which works at the information desk of a department store in Tokyo. The female android named Aiko Chihira, speaks Japanese and is also capable of sign language. Remarkably, Chihira blinks, bows (and the Japanese politely bow back) and moves her mouth and lips smoothly while speaking and is programmed with multiple human-like expressions.<sup>23</sup> The android's appearance wasn't modeled after any specific person but was designed to give a friendly impression. The "good nature" of the androids personality and her traditional Japanese clothing, are both factors which increase Aiko's acceptance and decreases the likelihood of negative reactions toward her. Android acceptance is an especially important consideration for Japanese roboticists who are designing robots to serve as a companion for people with dementia, to offer telecounseling in natural speech, to communication with the hearing impaired through sign language, and to allow healthcare officials to monitor the elderly.

A comparison of Japan's and South Korea's assimilation of robots into their societies with the U.S. and Europe, teaches us much about how people in the future may live in a world of technologically enhanced beings. I believe that cultural factors will strongly influence people's acceptance of robots and androids as they enter society. A case in point is the culture of Japan, where robotic technology is not only progressing exponentially, but robots are becoming integrated into many levels of Japanese society. As an example in pop culture, a cross-dressing Japanese television star's robotic clone has become the first android to host its own TV show.<sup>24</sup> Japanese roboticists, who are trying to replace celebrities with human-like androids, have pushed the clone of transvestite entertainer Matsuko Deluxe into the public's awareness (Fig. 7.2). According to Michael Fitzpatrick, "working with Professor Hiroshi Ishiguro, Japan's top advertising agency, *Dentsu* decided to clone an exact android copy of the popular entertainer."<sup>25</sup> A spokesman for the agency said: "Artists and entertainers themselves aren't yet seen as content that can be combined with technology, but the *Dentsu* group believes the need to develop android entertainers will grow."<sup>26</sup> Performing with natural movements, and a remarkable likeness to the "real" entertainer, while voiced and controlled remotely by a voice impersonator, the android put on quite a show in front of an

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<sup>23</sup>Android Robot "Aiko Chihira" takes over as Receptionist of Tokyo Store, Youtube video at: <https://www.youtube.com/watch?v=fH9IIzpwOPA>.

<sup>24</sup>Michael Fitzpatrick, 2015, Daily Mail, 'Unnervingly real' android of popular presenter transvestite becomes the first in world to host its own TV show, at: <http://www.dailymail.co.uk/news/article-3028762/Unnervingly-real-android-popular-presenter-transvestite-world-host-TV-show.html>.

<sup>25</sup>*Id.*

<sup>26</sup>Kazuaki Nagata, 2014, Dentsu says it's creating robot entertainers, The Japan Times, at: [http://www.japantimes.co.jp/news/2014/12/03/national/dentsu-says-creating-robot-entertainers/#.VXzhze\\_BJjo](http://www.japantimes.co.jp/news/2014/12/03/national/dentsu-says-creating-robot-entertainers/#.VXzhze_BJjo).

**Fig. 7.2** Performer Matsuko Deluxe’s android doppelganger Matsukoriod. Image courtesy of Dunstsu



**Fig. 7.3** Robotics Professor Hiroshi Ishiguro and his android look-a-like, Geminoid HI-4 image courtesy of Osaka University, Japan



incredulous audience on Nippon TV.<sup>27</sup> Interestingly, in the U.S. there is a “public performance” right associated with copyright law. While, the right has yet to be evaluated with respect to android look-a-likes, I anticipate that this could be an interesting area of law for future courts to explore. Also, keep this android in mind when reading about the “right of publicity” discussed later in this chapter.

To achieve the lifelike look of Matsuko’s doppelganger, Professor Hiroshi Ishiguro’s robotics lab used the latest silicon skin and state-of-the-art electronic actuators<sup>28</sup> (Fig. 7.3). In addition, Japan’s top make-up artist was brought into finish

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<sup>27</sup>*Id.*

<sup>28</sup>Ryuji Yamazaki, Shuichi Nishio, Hiroshi Ishiguro, Marco Nørskov, Nobu Ishiguro, Giuseppe Balistreri, Acceptability of a Teleoperated Android by Senior Citizens in Danish Society: A Case Study on the Application of an Embodied Communication Medium to Home Care, *International Journal of Social Robotics*, vol. 6, no. 3, pp. 429–442, 2014; Guizzo, 2010, Hiroshi Ishiguro: The Man Who Made a Copy of Himself, *IEEE Spectrum*, at: <http://spectrum.ieee.org/robotics/humanoids/hiroshi-ishiguro-the-man-who-made-a-copy-of-himself>.

the job of making the android look life-like.<sup>29</sup> In Japan, a society quite in tune with the idea of a robotic future, the prevalent thinking is that as robots start to look more human, people will become more sympathetic towards them. But with many Japanese already predisposed to being sympathetic to robots, because of the friendly way they are portrayed in Japanese popular culture, discrimination against robots in Japan, may be far less prevalent than in western nations that have different cultural traditions and societal expectations for robots (e.g., the *Terminator* movie series and the military's attempt to weaponize robots). Interestingly, Japanese roboticists claim that the time period to build an android indistinguishable from a human in appearance, is about 10 years.<sup>30</sup> Combine that prediction with Google's Ray Kurzweil's view that by midcentury artificial intelligence will have reached human levels of intelligence (that is, artificial general intelligence), the combination of intelligence with realistic android bodies, all within 25 years or less, provides strong motivation for humanity to consider human-robot ethics and pressing issues of robot and android law sooner-than-later.

As the above examples show, in our cyborg future our intelligent machines will have many different appearances and also personalities. With this possibility the question then becomes—would you want your robots or androids subservient, or upbeat, or even with a New Yorker personality—the possibilities are limitless, but it seems to me our reaction to artificially intelligent machines will surely depend in part on their look and their personality. In fact, a patent that has been issued to Google on robotic personalities adopting to humans suggests that a wide range of personalities could be possible and that we could even download different personality types from the cloud.<sup>31</sup> Thus, if you can't choose what kind of personality you want for your future android, it's highly possible that it might be able to choose for you.<sup>32</sup> It would do this by accessing your devices and learning about you, before configuring a tailored personality based on that information.<sup>33</sup> In addition it could use speech and facial recognition to personalize its interactions with you; this is an example of how our technology is becoming more like us. Of course to some the scenario that the machine adopts to our likes or dislikes evokes the “machine as tool” design philosophy, and goes against my conjecture that as we build better cyborg technology, we are not just building tools to serve humanity but building our competition and future replacements. An interesting question for the law would occur if the robot was programmed to take on the personality of a natural person, would this be a form of “misappropriation of likeness”—the Google patent suggests a deceased loved one or a celebrity—so that effectively you could get someone to live on after their death in machine or virtual avatar

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<sup>29</sup>Michael Fitzpatrick, *id.*, note 24.

<sup>30</sup>Michael Fitzpatrick, *id.*, note 24.

<sup>31</sup>Google Patent 8,996,429; Gene Quinn and Steve Brachmann, Discussing the Google patent, at: <http://www.ipwatchdog.com/author/gene-steve/>.

<sup>32</sup>Google Patent, *id.*; Google Patents Customizable Robot Personalities, 2015, at: <http://www.wired.co.uk/news/archive/2015-04/01/google-robot-personalities>.

<sup>33</sup>Google Patent *id.*

form.<sup>34</sup> More about this in the following sections because in some cases, legal rights attach to appearance.

## Our Reaction to Cyborgs and Androids

Thus far, the cyborgs living amongst us have received mixed reactions from the public, from interest in the sleek “cybernetic” technology integrated into their body, to outright aggression based on their cyborg appearance. On the latter point, two of the first cyborgs amongst us, Steve Mann and Neil Harbisson both of whom are equipped with head-mounted display technology, have reported being assaulted in public based on their cyborg appearance. In one incident, Professor Mann was physically “roughed up” by airport security, and in another by employees at a McDonalds in Paris.<sup>35</sup> And Neil, who is equipped with a head worn sensor which he uses to convert color into sound, was assaulted by policeman concerned that he was filming them (he was actually hearing them in color).<sup>36</sup> Google’s Ray Kurzweil has interpreted the attack against Steve as the first recorded hate crime against cyborgs, you can bet more are coming.

In fact, given human nature, I think cyborgs and androids will be the target of discrimination, hostility, and hate crimes for numerous reasons, not the least of which will be their appearance. Generally, hate crimes are on the rise around the world, and the cyborgs that have entered society have already been subjected to “lookism discrimination” and outright aggression.<sup>37</sup> In addition, humans equipped with cyborg technologies for reasons of medical necessity have also been subjected to discrimination. For example, in the U.K. according to *DisabilityHateCrime.org.UK*, hate crimes that are directed against people with disabilities forms its own category (even though, I might add, their disability is often “repaired” with a prosthetic device).<sup>38</sup> Back in the U.S., the state of Missouri defines a hate crime as one which is “knowingly motivated” because of race, color, religion, natural origin, sex, sexual orientation, or disability of the victim.<sup>39</sup> If Steve and Neil are considered to be equipped with cyborg technology to treat a disability (clearly Neil is due to his extreme color deficiency, and Steve travels

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<sup>34</sup>Google Patent, *id*; Martine Rothblatt, 2014, *Virtually Human: The Promise---and the Peril---of Digital Immortality*, St. Martins Press.

<sup>35</sup>Stephanie Mlot, 2012, *Wearable Tech Pioneer Assaulted at Paris McDonald’s*, at: <http://www.pcmag.com/article2/0,2817,2407258,00.asp>.

<sup>36</sup>David Pescovitz, 2012, *Colorblind painter’s wearable “synesthesia camera” reportedly broken by police*, at: <http://boingboing.net/2012/02/16/colorblind-painters-wearable.html>.

<sup>37</sup>James J. McDonald, Jr, “Lookism,” *The Next Form of Illegal Discrimination*, at: <http://www.ipwatchdog.com/author/gene-steve/>.

<sup>38</sup>*DisabilityHateCrime.org.UK*, at: <http://disabilityhatecrime.org.uk/>.

<sup>39</sup>Missouri Revised Statutes, Chapter 557.035, a statute on hate crimes, beginning 2017, at: <http://www.moga.mo.gov/mostatutes/stathtml/55700000351.HTML>.

with a statement from his doctor describing his dependence on cyborg technology) and are assaulted, both assaults should be considered a hate crime. Would androids and other technologically enhanced beings experience similar hostility as a result of their cybernetic appearance? These are questions which will weave their way through our court systems in the next decades and the rulings made by judges in such cases will contribute to an emerging law of cyborgs. Unfortunately, given the hostility that Steve and Neil have experienced, in the future, cyber-hate crimes and other forms of discrimination against cyborgs and androids may occur frequently. In fact, in response to cyborg technologies there are advocacy groups with names like “*Stop the Cyborgs*” springing up to try and push through cyborg legislation.<sup>40</sup> So the message seems to be, become a cyborg at your own peril, humans may not approve.

If hate crimes result in a physical attack against a person, there may already be an analog in the machine world—consider the case of machine sabotage (and from a historical perspective recall the Luddite movement of the Eighteenth Century). In a recent example, an executive of a Korean appliance company was accused of willfully damaging several Samsung washing machines at an event in Berlin. Also consider that there are cyber-industrial sabotage activities, such as hacking. On the point of purposeful physical harm to machines, the state of Washington considers damage to machines in one of its state statutes defining criminal sabotage as: “Whoever, with intent that his or her act shall, or with reason to believe that it may, injure, interfere with, interrupt, supplant, nullify, impair, or obstruct the owner’s or operator’s ... property, instrumentality, machine, mechanism, or appliance... shall be guilty of criminal sabotage.”<sup>41</sup> As for cyborgs, there are already cases where they have been assaulted and their prosthetic limbs stolen. So, just think, humans experience discrimination, cyborgs are assaulted, it’s a crime to sabotage a machine, and with this as background more androids and artificially intelligent machines are coming.

The general theme of discrimination against androids predates current androids that are entering society now. For example, in a sci-fi novel, the theme of discrimination against androids was explored in John Brunner’s novel *Into the Slave Nebula*,<sup>42</sup> where the blue-skinned androids were subjugated to slavery by humans. I think the idea of forced servitude for artificially intelligent beings should be strongly prohibited due to human rights concerns, as should slavery for any artificially intelligent being that convincingly makes the claim that it is conscious. Personally, I don’t think it wise to subjugate any intelligent being that within a few decades could surpass us in intelligence. As Martine Rothblatt, CEO of *Therapeutics Inc.* comments, future sentient beings will want to be free, they will learn that lesson from humans, and oppression of artificial intelligence will only result in forms of opposition ranging from nonviolent (think Gandhi) to outright

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<sup>40</sup>Stop The Cyborgs, Only the unmeasured is free, at: <http://stopthecyborgs.org/>.

<sup>41</sup>RCW 9.05.060, Washington State statute on machine sabotage.

<sup>42</sup>John Brunner, 2011, *Into the Slave Nebula*, Gateway.



hostility (think terminator).<sup>43</sup> Considering Rothblatt's comments, how likely is discrimination against our future technological progeny and how likely is an unwanted response in return by them? Just consider the example of current cyborgs Neil and Steve indicating that people wearing head-mounted display technology may experience hostility and discrimination based on their "cyborg appearance," and that litigation resulting from people equipped with prosthesis is not uncommon. As one example of the last point, the Sixth Circuit Court of Appeals in a case dealing with cyborg technology held that an excavator operator with a prosthetic leg, was entitled to be reinstated to his job under the terms of the *Americans with Disabilities Act* as long as he could perform the essential functions of his position safely; that is, his cyborg technology could not disqualify the worker from employment.<sup>44</sup>

While exponentially improving technologies often outpace the law's ability to keep up, for a number of pragmatic reasons, a few nations are beginning to seriously consider the consequences of a cyborg/robotic future. Inevitably, the labor market of the near future will consist of humans, cyborgs, and artificially intelligent robots. In South Korea, the *Ministry of Information and Communication* has an ambitious plan to put a robot in every household by 2020 and several robot cities have been planned for the country: the first scheduled to be built in 2016. The new robot city will feature research and development centers for manufacturers and part suppliers, as well as exhibition halls and a stadium for robot competitions.<sup>45</sup> South Korea is also working on a *Robotics Ethics Charter* that will establish ground rules and laws for human interaction with robots, setting standards for robotics users and manufacturers, as well as guidelines on ethical standards to be programmed into robots to prevent human abuse of robots and vice versa. In fact, researchers in artificial intelligence propose programming "friendly artificial intelligence," into the "brains" of future artificially intelligent machines to decrease their potential threat to humanity. Interestingly, in a Brookings report written by lawyers Benjamin Wittes and Jane Chong, *Our Cyborg Future—Law and Policy Implications*, issues of access to digital technology are closely linked to concerns about discrimination against those unable to afford or unwilling to undergo certain modifications.<sup>46</sup> In addition, they argue that antidiscrimination laws may be necessary to prevent cyborgs from being denied employment as a result of their cybernetic modifications and to stop unenhanced humans from being discriminated against for opposite reasons.<sup>47</sup>

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<sup>43</sup>Martine Rothblatt, *id.*, note 34.

<sup>44</sup>*Henschel v. Clare Cnty. Rd. Comm'n*, No. 13–1528 (6th Cir. December 13, 2013).

<sup>45</sup>EveR-2-Meet the Singing Android, at: <http://www.k2updates.com/ever-2-meet-the-singing-android/>.

<sup>46</sup>Benjamin Wittes and Jane Chong, 2014, We Are All Cyborgs Now, at: <http://www.brookings.edu/blogs/techtank/posts/2014/10/8-we-are-all-cyborgs>.

<sup>47</sup>*Id.*

## The Uncanny Valley

In the coming cyborg age, cyborgs, androids, and robots may have reason to be concerned about human reaction to them, just consider the phenomena of the “uncanny valley.”<sup>48</sup> This concept, developed by roboticist Masahiro Mori originally intended to provide an insight into human reactions to robotic design, but has been extended to human interactions with nearly any nonhuman entity.<sup>49</sup> Stated simply, the idea is that humans react favorably to a “human-like” machine, but only to a particular point. For example, humans generally like the appearance of “cute” robotic toys, but once an android is designed to look like a human, and doesn’t quite meet the standard, people report a strong negative response to its “creepy” appearance. However, once the appearance improves and is indistinguishable from a human, the response becomes positive. So the response goes... positive, negative, then positive again. This chasm, the uncanny valley, represents the point at which a person observing the creature or object in question sees something that is nearly human, but just enough off-kilter to seem eerie or disquieting.<sup>50</sup> Examples can be found in the fields of robotics, 3D computer animation, and in medical fields such as burn reconstruction, infectious diseases, neurological conditions, and plastic surgery.<sup>51</sup> As an example of the uncanny valley from popular culture, according to roboticist Dario Floreano, the animated baby in Pixar’s groundbreaking 1988 short film *Tin Toy* provoked negative audience reactions, which first led the film industry to take the concept of the uncanny valley seriously. In addition, several reviewers of the 2004 animated film *The Polar Express* called its animation eerie. In fact, CNN.com reviewer Paul Clinton wrote, “Those human characters in the film come across as downright... well, creepy.”<sup>52</sup>

A number of design principles have been proposed for avoiding the uncanny valley—I think of them as design rules for cyborgs, androids, virtual avatars, and any other artificially intelligent being that will enter society. Perhaps future courts will take note of these rules. It has been shown that when human and nonhuman elements are mixed in the design of a robot, the robot may look uncanny and likely experience lookism discrimination. For example, a robot with a synthetic voice or a human being with a human voice have been found to be less eerie than a

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<sup>48</sup>Angel Tinwell, 2014, *The Uncanny Valley in Games and Animation*, A.K. Peters/CRC Press.

<sup>49</sup>Masahiro Mori, 2012, *The Uncanny Valley*, IEEE Spectrum, at: <http://spectrum.ieee.org/automaton/robotics/humanoids/the-uncanny-valley>.

<sup>50</sup>*Id.*; David Bryant, *The Uncanny valley*, at: <http://www.arclight.net/~pdb/nonfiction/uncanny-valley.html>. *The uncanny valley of a functional organization*, 2013, at: <https://stratechery.com/2013/the-uncanny-valley-of-a-functional-organization/>.

<sup>51</sup>*The uncanny valley of a functional organization*, 2013, at: <https://stratechery.com/2013/the-uncanny-valley-of-a-functional-organization/>.

<sup>52</sup>Paul Clinton, 2004, Review: ‘Polar Express’ a creepy ride, at: <http://edition.cnn.com/2004/SHOWBIZ/Movies/11/10/review.polar.express/>.

robot with a human voice or a human being with a synthetic voice.<sup>53</sup> In addition, for a robot to give a more positive impression, its degree of human realism in appearance should also match its degree of human realism in behavior. So if an android looks more human than its movement abilities, this gives a negative impression. In addition, in terms of performance, if a robot looks too appliance-like, people will expect little from it, if it looks too human-like, people will expect too much from it; however, with continuing improvements, future artificially intelligent machines will meet and then exceed our expectations. Still, a highly human-like appearance leads to an expectation that certain behaviors will be present, such as realistic motion dynamics. Finally, abnormal facial proportions, including those typically used by artists to enhance attractiveness (e.g., larger eyes), can look eerie when combined with human skin texture.<sup>54</sup>

A similar “uncanny valley” effect could, according to futurist writer Jamais Casico, show up when humans begin modifying themselves with cybernetic enhancements which aim to improve the abilities of the human body and mind beyond what would normally be possible, be it eyesight, muscle strength, or cognition.<sup>55</sup> Casico postulates that so long as these enhancements remain within a perceived norm of human behavior, a negative reaction is unlikely, but once individuals supplant normal human shape and form, revulsion can be expected.<sup>56</sup> However, according to the uncanny valley theory, in our cyborg future, once such technologies gain further distance from human norms, “transhuman” individuals would cease to be judged on human levels and instead be regarded as separate entities altogether (this point is what has been dubbed “Posthuman”), and it is here that acceptance would rise once again out of the uncanny valley.<sup>57</sup> In fact, there has already been some work on how people view cybernetically enhanced bodies. For example, Jessica Barfield, in work done at Dartmouth College, found that people equipped with cyborg technology would have to change their body-image and self-identity, and that they would have to relearn how to use their body to accommodate the new technology. Should designers of robots, androids, or prosthetic devices strive overly hard to duplicate human appearance? If so, some seemingly minor flaw could drop the android or cyborg into the uncanny valley.

But let me step back from robots to people, and ask—does the uncanny valley phenomena apply to humans? Yes, it does, and here is an example. *Ulzzang*, or “best face,” is a Korean subculture in which girls alter their looks digitally, with makeup, and by any other means available to them to achieve an anime look.<sup>58</sup> In

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<sup>53</sup>Uncanny Valley, Wikipedia, at: [https://en.wikipedia.org/wiki/Uncanny\\_valley](https://en.wikipedia.org/wiki/Uncanny_valley).

<sup>54</sup>*Id.*

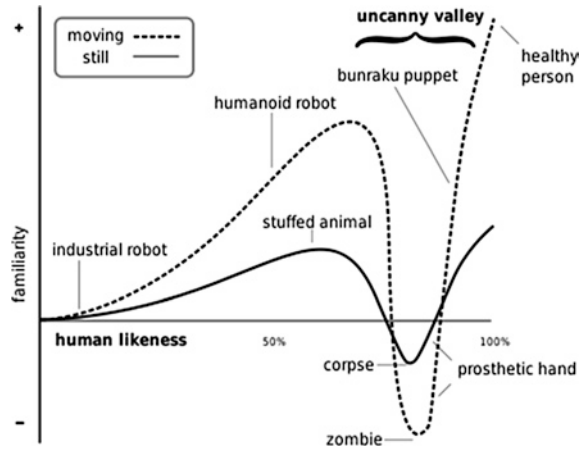
<sup>55</sup>Jamais Casico, Open the Future, at: [http://www.openthefuture.com/2007/10/the\\_second\\_uncanny\\_valley.html](http://www.openthefuture.com/2007/10/the_second_uncanny_valley.html).

<sup>56</sup>*Id.*

<sup>57</sup>*Id.*

<sup>58</sup>Paul Pickett, 2010, 5 Creepy Ways Humans Are Plunging Into the Uncanny Valley, at: [http://www.cracked.com/article\\_18867\\_5-creepy-ways-humans-are-plunging-into-uncanny-valley.html](http://www.cracked.com/article_18867_5-creepy-ways-humans-are-plunging-into-uncanny-valley.html).

**Fig. 7.4** The Uncanny Valley. The concept was proposed by Mashario Mori. Image courtesy of Wikipedia Commons



other words, an ulzzang girl strives to have behemoth, circular eyes, a tiny nose and mouth, flawless pale skin and a tiny body dressed up in coordinated outfits.<sup>59</sup> Once they get that anime look, they upload pictures of themselves for online competitions for prestige and Internet fame. While purposefully altering a face digitally to the point where it looks like an anime character is interesting from an uncanny valley sense, actually altering their real-world faces with eyelid glue and contact lenses, that is, purposefully entering the uncanny valley is comparable to the grinder movement (see Chap. 5: *Modifying, Enhancing, and Hacking the Body*) where people implant technology under their skin to gain an extra sense.<sup>60</sup> I can only say, the range of human expression when it comes to altering appearance is wide, and will be even more dramatic in the coming cyborg age as body and facial features for humans and androids are replaced with “cyborg” technology (Fig. 7.4).

## Observations About Discrimination and the “Ugly Laws”

In my view, the answer to whether artificial intelligence as embodied in different bodily forms will be discriminated against based on their appearance, is decidedly “yes” as the human drive to conform to cultural (or subcultural) beauty standards is strong; and those who come short are often the victim of “lookism” discrimination. For example, physically unattractive people often face unequal treatment in situations in which their appearance is clearly unrelated to their qualification or abilities. In contrast, other social science research has shown that people attribute a wide range of positive characteristics to those whom they find physically

<sup>59</sup>*Id.*

<sup>60</sup>*Id.*

attractive.<sup>61</sup> In addition, studies have also shown that less attractive people are accorded worse treatment simply because of their appearance. In our cyborg future will “unsightly androids” be subjected to the same lookism discrimination? On this topic, in a study on the perception of cyborg bodies by Jessica Barfield she reported survey results that indicated people equipped with cyborg technology would experience a significant amount of bias by the public, and none responding that cybernetically enhanced people would experience no bias.<sup>62</sup> From social science studies, the finding that a person’s appearance affects the treatment they receive is so strong that parents have lower expectations for unattractive children, as do teachers; which makes me wonder—will “unsightly” androids also receive deflated expectations by humans? Already it has been suggested that we expect more from robots that look human. Additionally, as adults, unattractive people in simulation studies of court proceedings receive higher sentences in criminal cases and lower damages awards in civil lawsuits.<sup>63</sup> Summarizing social science studies, “lookism” discrimination is widespread in society and is influenced by a number of factors, thus it is reasonable to expect that our technological inventions will likely receive the same discriminatory treatment based on their appearance as do humans.

Discrimination directed against those with disabilities is often the result of a missing or damaged body part which in some cases can be replaced with a prosthetic arm or leg; which then may become the basis for discrimination. Interestingly, robots and androids are often equipped with similar “cyborg” technology. With disabled humans, cyborg technology may lead to discriminatory reactions that are based on their appearance, but paradoxically, in the case of machines, cyborg technology also gives the machine the functionality to compete against humans. In this case androids may experience discrimination based on the way they look (especially if they fall into the uncanny valley) and also based on their enhanced ability to displace humans from the workplace. In fact, to compete against humans, robots and androids often use the latest prosthetic devices, computer-vision, and machine-learning algorithms to perform the work we humans typically do. And compete they do, according to a joint report by accountancy firm *Deloitte* and the University of Oxford, in Britain the lower paid workers are five times more likely to have their jobs taken over by robots than those earning higher incomes.<sup>64</sup> Academicians from MIT, Oxford University, and Sussex University, have argued that robots will “steal” around half of all jobs around the world in the not too distant future because, according to them, the globe has entered a second

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<sup>61</sup>Michael Kalick, *Aesthetic Surgery: How it Affects the way Patients are Perceived by Others*, *Annals of Plastic Surgery*, 128, 131, 1979.

<sup>62</sup>Jessica Barfield, 2014, *Cybernetic Embodiment Study*, for *Sociology 79.6*, Dartmouth College.

<sup>63</sup>Gray and Ashmore, 1976, *Biasing Influence of Defendant’s Characteristics on Simulated Sentencing*, 38 *Psychological Rep.* 727.

<sup>64</sup>Mark Smith, 2014, *One-third of jobs in the UK at risk from automation*, at: <http://www2.deloitte.com/uk/en/pages/press-releases/articles/deloitte-one-third-of-jobs-in-the-uk-at-risk-from-automation.html>.

age of machinery that will have a more profound effect on society than the onset of the industrial revolution.<sup>65</sup> Two interesting books in this area were written by Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, and *Rise of the Robots*, by Martin Ford. However, my perspective of the future is different from the above authors, I view the second machine age as synonymous with an age of cyborgs and a future merger with artificially intelligent machines; that is, I argue that we are becoming the “intelligent machinery,” and the “intelligent machinery” is in the process of becoming us. Thus, like Hans Moravec, I predict that our future is to merge with our artificially intelligent inventions, and in contrast to the views of Erik Brynjolfsson and Andrew McAfee, other than for a brief time period our future is not to experience a second machine age in which “they” serve “us” but to merge with them.

Both Japan and South Korea have actively promoted the virtues of a robot-dependent society and lifestyle. Professor Jennifer Robison, a leading scholar of Japanese robotic culture, reports that nationwide surveys in Japan indicate that Japanese citizens are more comfortable sharing living and working environments with robots than with foreign caretakers and migrant workers.<sup>66</sup> Discussing the demographics of Japan, Robertson comments that “as their population continues to shrink and age faster than in other postindustrial nations, Japanese politicians are banking on the robotics industry to reinvigorate the economy and to preserve the country’s alleged ethnic homogeneity.”<sup>67</sup> These initiatives Robinson reports are paralleled by a growing support among some Japanese roboticists and politicians to confer citizenship on robots. Already the idea of robots having evolved beyond consideration as “property” to acquiring legal status as sentient beings with “rights” is shaping developments in artificial intelligence and robotics outside of Japan, including South Korea, Europe, and the U.S. In addition, supporting the idea that granting legal rights for robots is gaining momentum, the *We Robot* conference, a meeting of leading experts in the field of law and robotics is held annually.<sup>68</sup> And Ryan Calo one of the organizers of the *We Robot* conference is proposing the idea that a new federal agency on robots be developed in order to deal with the novel experiences and harms that robotics may enable.

That cyborgs and androids may be subject to “lookism” discrimination seems a reasonable conclusion given that in current society, the most physically unattractive members face widespread discrimination.<sup>69</sup> And not only do people discrimi-

<sup>65</sup>Linda Brinded, 2014, Robots Will Steal 50 % of Human Jobs in Near Future, says MIT and Professors, at: <http://www.ibtimes.co.uk/robots-will-steal-50-human-jobs-near-future-says-mit-professors-1455088>; Linda Brinded, 2014, Robots to Steal 10 Million Low Paid UK Jobs by 2034, at: <http://www.ibtimes.co.uk/robots-steal-10-million-low-paid-uk-jobs-by-2034-1474032>.

<sup>66</sup>Jennifer Robertson, 2014, Human Rights versus Robot Rights: Forecasts from Japan, *Critical Asian studies*, 46:4, 571–598.

<sup>67</sup>*Id.*

<sup>68</sup>*We Robot*, 2014 program, at: <http://robots.law.miami.edu/2014/program/>.

<sup>69</sup>Note, 1987, Facial Discrimination: Extending Handicap Law to Employment Discrimination on the Basis of Physical Appearance, *Harvard Law Review*, Vol, 100, No, 8, 2035–2052.

nate against those whose appearance deviates from societal standards, but local governments may also discriminate. In the past, some jurisdictions in the U.S. went so far as to prohibit “ugly” or “unsightly” individuals from appearing in the public; this implies to me that cyborgs and androids deemed unattractive could similarly offend the sensibilities of humans and be subjected to “lookism” and other forms of discrimination.<sup>70</sup> Remarkably, in the early-to-mid 1900s it was illegal to be found “ugly” on the streets of some mainstream American cities like Chicago, Illinois, Omaha, Nebraska, and Columbus, Ohio.<sup>71</sup> Such a person’s punishment for venturing in public ranged from incarceration to fines for each “ugly offense.” Here’s how the Chicago Municipal Code described and enforced an “Ugly Law” (which has since been repealed):

No person who is diseased, maimed, mutilated or in any way deformed so as to be an unsightly or disgusting object or improper person is to be allowed in or on the public ways or other public places in this city, or shall therein or thereon expose himself to public view, under a penalty of not less than one dollar nor more than fifty dollars for each offense.<sup>72</sup>

At the time period of the “lookism” discrimination laws the thinking was that even though the disabled, the indigent, and the poor were a part of society, nobody wanted to deal with them and fewer still wanted to actually view them in public. So laws were passed to keep the deformed—especially those with Cerebral Palsy and other disfiguring diseases—inside and out-of-sight.<sup>73</sup> Thankfully, Omaha repealed their Ugly Law in 1967; Columbus withdrew theirs in 1972; and Chicago was the last to stop punishing the “ugly” in 1974. However, human biases fade slowly, and “lookism” discrimination is still a part of society and will surely continue in our cyborg future and be directed against our cybernetic inventions.

In contrast to the jurisdictions which enacted statutes to prohibit “unsightly” people from appearing in public, jurisdictions that legislate in this area now are more likely to respond by enacting local ordinances to *protect* people from lookism discrimination. In fact, in the U.S. some states and municipalities have passed laws that directly prohibit discrimination based on appearance. The District of Columbia, for example, prohibits discrimination based upon “actual or perceived” differences in background and attributes, including “physical appearance,” such as weight (no overweight androids please). And employers in the District of Columbia should be particularly cautious about terminating employees for any appearance based issues, as personal appearance and the expression of an employee’s gender identification are protected. The state of Michigan has also enacted a statute to expressly protect employees from discrimination based upon their

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<sup>70</sup>Paris, Ill. Mun. Code § 36034, repealed 1974.

<sup>71</sup>Chicago Municipal Code, sec. 36034; Unsightly Beggar Ordinance Nebraska Municipal Code of 1941, sec. 25; Columbus, Ohio, General Offense Code, sec. 2387.04.

<sup>72</sup>Chicago Municipal Code, *id.*

<sup>73</sup>David Boles, 2007, Enforcing the Ugly Laws, at: <http://bolesblogs.com/2007/05/01/enforcing-the-ugly-laws/>.

weight or height. And several other local governments, including New York City and San Francisco bar discrimination based upon an employee's general appearance. But, the question for our cyborg future is whether "appearance" discrimination will also apply to cyborg technologies?<sup>74</sup>

In an example that makes me wonder whether the size and form of an android will evoke discriminatory reactions from people, a waitress at a Hooters restaurant was in the news claiming that Hooters warned her that she was required to lose approximately ten pounds in the near future or face possible discharge.<sup>75</sup> The waitress responded by filing a weight discrimination lawsuit against the restaurant chain under a Michigan statute known as the *Elliot-Larsen Civil Rights Act*.<sup>76</sup> Among other things, this statute bars employers from discriminating on the basis of age, sex, height or weight.<sup>77</sup> I can envision "chubby" androids receiving negative reactions from the public, once they enter society, and I envision laws to protect androids from appearance discrimination or even laws to "force" androids to look a certain way. In fact, Tokyo University's Tomotaka Takahashi predicts that over half of all future androids will be female so there will be lots of opportunity for gender discrimination (this already happens in virtual video games) in our cyborg future. In South Korea and Japan, the gender and "look" of the android designed to enter society is especially important, with female androids appearing much more slender than their male counterparts. As a precursor for the cyborg future, it is known that stereotypes related to gender and appearance that burden women in the real world follows them into virtual ones, according to researchers at Penn State University. On this point, in a study of how people interacted with avatars in an online game, researcher T. Franklin Waddell reported that women received less help from fellow players than men when they operated an unattractive avatar.<sup>78</sup>

Discussing the law and physical appearance, Yale Law Professor Robert Post comments on a 1992 municipal code enacted in Santa Cruz, California with prohibits arbitrary discrimination in employment, housing, and accommodations, based on height, weight, and physical characteristics (all items that could apply to androids!).<sup>79</sup> The statute as passed, focused on only aspects of bodily appearance

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<sup>74</sup>Brian F. Chandler, 2013, "Too Sexy?" "Too Heavy?" Will Employee Appearance Standards be Protected? at: <http://www.protoraelaw.com/publications/too-sexy-too-heavy-will-employee-appearance-standards-be-protected/>.

<sup>75</sup>Hooters waitress files lawsuit—says she lost weight, <http://www.nhregister.com/general-news/20100525/hooters-waitress-files-lawsuit-says-she-lost-weight>.

<sup>76</sup>Elliot-Larsen Civil Rights Act, Michigan Act 453 of 1976, 37.2202, Employer; prohibited practices; exceptions.

<sup>77</sup>See MICH. COMP. LAWS, *id*.

<sup>78</sup>T. Franklin Waddell and James D. Ivory, 2015, It's Not Easy Trying to be One of the Guys: The Effect of Avatar Attractiveness, Avatar Sex, and User Sex on the Success of Help-Seeking Requests in an Online Game. *Journal of Broadcasting & Electronic Media*, Vol. 59 (1): 112. doi:10.1080/08838151.2014.998221.

<sup>79</sup>Robert Post, 2000, Prejudicial Appearances, *The Logic of American Antidiscrimination Law*, Faculty Scholarship Series, Yale Law School, paper 192.



that are beyond a person’s control (i.e., immutable). However, discrimination also exists for traits that are within a person’s control such as religion or marital status, tattoos, piercings and for grinders whether they equip themselves with technology. Even with its good intentions the Santa Cruz statute evoked an intense controversy about the merits of what was then called “anti-lookism.” I am certain that any legislation to protect cyborgs, androids, and artificially intelligent machines from experiencing lookism discrimination will evoke a similar controversy. But eventually the law does respond to inequities in society, for example, the recantation of Ugly Laws directly led to the *Americans with Disabilities Act* (ADA) of 1990, where certain rights were granted to the disabled. Of relevance to lookism discrimination is that under some circumstances appearance can be regarded as a disability. For example, if a person who is considered obese or a person with a cosmetic disfigurement that is considered a facial deformity, impacts the person’s ability to be employed, they are considered disabled under the ADA:

“Individuals with disabilities are a discrete and insular minority who have been faced with restrictions and limitations, subjected to a history of purposeful unequal treatment, and relegated to a position of political powerlessness in the society, based on characteristics that are beyond the control of such individuals and resulting from stereotypic assumptions not truly indicative of the individual ability of such individuals to participate in, and contribute to, society.”<sup>80</sup>

When discussing the emergence of cyborgs and androids into society, some ask—what do we humans have to fear (some respond saying an uprising destroying the human race, but I leave this topic to a later chapter and to books such as *Our Final Invention: Artificial Intelligence and the End of the Human Era*, by James Barats). In response to public reactions, current cyborgs are beginning to address the question of civil liberties for technologically enhanced beings. Those who are equipping themselves with cyborg technology argue that their constitutional right for equal protection under the law should include protection from unfavourable and discriminatory reactions to their appearance. In fact, cyborg Neil Harbisson, who wears a head-mounted antenna which allows him to “hear color,” argues that his appearance is not unnatural, just the opposite commenting: “Some might think that we might become less human if we modify ourselves but I believe there is nothing more human than doing that.”<sup>81</sup> In addition he states, “In my case, becoming technology doesn’t make me feel closer to machines, or to robots, but quite the opposite. Having an antenna makes me feel closer to insects and other creatures that have antennae, hearing through bone conduction makes me feel closer to dolphins and other marine species that perceive sound through their bones, having ultraviolet and infrared perception makes me feel closer to insects and mammals that perceive these colours. I feel a stronger connection with nature now than I ever did before.”<sup>82</sup>

<sup>80</sup>Americans With Disabilities Act of 1990, Pub. L. No. 101–336, 104 Stat. 328 (1990).

<sup>81</sup>Neil Harbisson, 2015, I Don’t Have Artificial Body Parts, I Have Artistic Body Parts, [http://www.huffingtonpost.com/neil-harbisson/i-dont-have-artificial-bo\\_b\\_6804306.html](http://www.huffingtonpost.com/neil-harbisson/i-dont-have-artificial-bo_b_6804306.html).

<sup>82</sup>*Id.*

Whether a connection to nature will constitute an acceptable affirmative defence against discrimination for cyborgs and androids is not likely; instead, I expect strong legislation efforts will be needed, possibly in response to civil uprisings against the governments and institutions perpetuating “lookism” discrimination against our future technological progeny.

Interestingly, another form of “ugly laws” has been around for some time and is still on the books. These laws are directed at freak shows (sometimes termed “sideshow”) that accompany traveling carnivals. An interesting book in this area was written by Robert Bogdan, *Freak Show: Presenting Human Oddities for Amusement and Profit*. In the U.S. “freak laws” were enacted to deal with establishments that sought to profit from displaying people with an unusual body or deformity—for example, the bearded lady, wolf boy, or fish girl.<sup>83</sup> But technology may play a role in people’s perception of who looks different. Consider Professor Steve Mann of the University of Toronto who has been wearing “eye catching” cyborg technology for decades. Richard Crouse, author of the book *100 Best Movies You’ve Never Seen* (Steve was the subject of a 2001 documentary film, *Cyberman*) claims that P.T. Barnum would have loved Steve Mann, and would have pitched like this—step right up ladies and gentleman. Have we got a *freak* for you? Half man, half machine, this *unbiological* creature is one of the wonders of the world. While there are no laws specifically passed relating to the appearance of cyborgs, in the U.S. the regulations enacted by states on freak shows may provide some guidance on how the law might respond to cyborgs and androids (that look different from humans) as they enter society. To some commentators it is thought that freak shows include expressive elements and as such should be subject to First Amendment protection. In the coming cyborg age, as cyborgs and androids enter society, a future court may be asked to determine if elements of cyborg technology are forms of expression and therefore deserving of First Amendment protection (as a form of speech), versus functional, which could meet the requirements of patent law. However, currently, the First Amendment is not the usual legal theory which prevails in appearance discrimination cases but more typically federal anti-discrimination, local, and state ordinances are.

In the U.S. there is no federal law relating to freak shows, any law covering such shows are typically city ordinances with the exception of a few states legislating in this area. Of the jurisdictions that have considered the issue, some prohibit, and some allow “freaks” to be displayed for commercial purposes. For example, in California and Florida, laws restricting freak shows that charge people to view “freaks” have been held unconstitutional—not because the laws were thought to violate the freedom of speech prong of the First Amendment, but rather because persons with “unusual bodies” have a right to be employed and surprisingly the courts assumed freak shows were one of the few places where such people could

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<sup>83</sup>Brigham A. Fordham, 2007, *Dangerous Bodies: Freak Shows, Expression, and Exploitation*, 14 *UCLA Ent. L. Rev.*

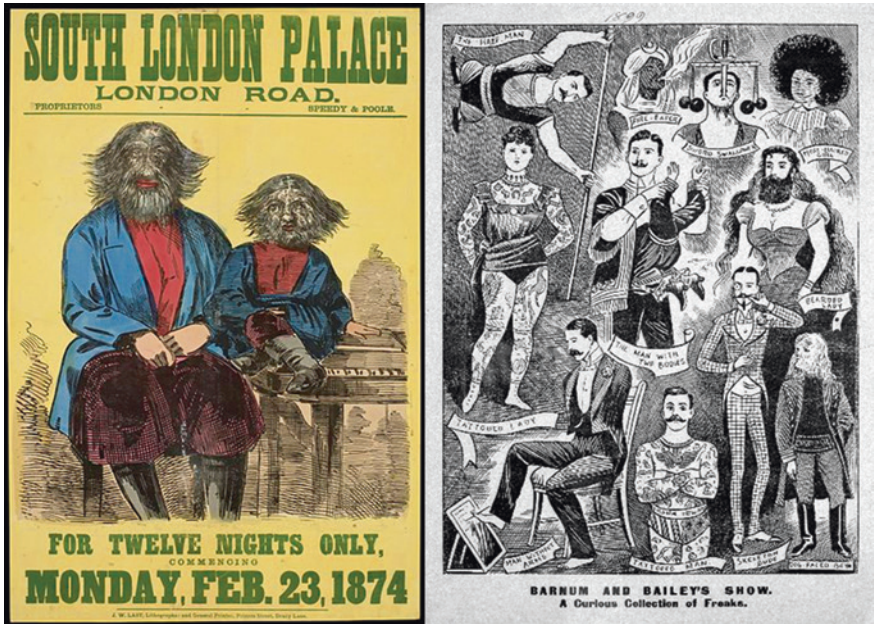


Fig. 7.5 Traveling carnival posters, images courtesy of Wikipedia commons

gain employment.<sup>84</sup> However, not all states allow “freaks” to be displayed for commercial purposes, in fact, Massachusetts General Law prohibits all commercial displays of a person who has the appearance of deformity produced by artificial means, regardless of whether the persons being displayed are being sufficiently rewarded for participating or not.<sup>85</sup> Like the “Ugly laws” of the past, some laws restricting freak shows are intended to shield the public from the spectacle of the unusual body; but in the coming cyborg age people will not be shielded from those who look different or deviate from cultural standards of beauty as millions of artificially intelligent robots, androids, and cyborgs will soon join society and not all will be the equivalent of an attractive human (but I do suppose—“Beauty is in the eye of the beholder”) (Fig. 7.5).

<sup>84</sup>Brigham A. Fordham, *id.*; Justin Smith, 2013, The Ethics of Tod Browning’s Freaks (1932), at: <http://www.soundonsight.org/the-ethics-of-tod-brownings-freaks-1932/>.

<sup>85</sup>Massachusetts General Laws. Part IV. Title I Chapter 272. Section 33. Whoever exhibits for hire an albino person, a minor or mentally ill person who is deformed or a person who has an appearance of deformity produced by artificial means shall be punished by a fine of not more than five hundred dollars.

## Mind Uploads and Replacement Bodies

Before exploring in more detail the main theme of this chapter, lookism discrimination and how it may apply to cyborgs and androids, I will briefly introduce the idea of a mind upload to a virtual avatar, android, or different physical body altogether, an idea which is clearly a more distant possibility for our cyborg future but worth considering in the context of discrimination and rights for our technological inventions. While the technology to upload one's mind into another body is fascinating, an in-depth discussion of the emerging technology for uploading a mind is beyond the scope of this book (see however, Ray Kurzweil's *How to Build a Mind*, and the edited book by Russell Blackford and Damien Broderick, *Intelligence Unbound: The Future of Uploaded and Machine Minds*), instead the brief discussion here will be on the legal and ethical issues related to discrimination based on appearance, that is, as a result of uploading a mind to another body.

As background information, Ray Kurzweil in *The Age of Spiritual Machines* predicted human-level intelligence in a machine by 2029,<sup>86</sup> and that in the 2040s “we will be able to access the information in our brains that constitute our memories, skills, and personalities and back them up.”<sup>87</sup> If the idea of uploading our mind to a computer or another body sounds like sci-fi, for humans it currently is, but the reality is that neural engineering is making significant strides toward modeling the brain and developing technologies to restore or replace some of its biological functions. And notice I said “for humans,” actually we upload a mind all the time, it happens every time we load an operating system on a computing device.

Japan and South Korea's movement to consider as policy legal protection for robots brings me back to the central theme of this chapter—whether the appearance of cyborgs and artificially intelligent machines will lead to discrimination from humans and if so, what laws exist to provide protection for our technological progeny? In most nations constitutions provide basic and fundamental rights to its citizens. In the U.S. the principle of equal protection under the law is stated in the 14th Amendment to the Constitution which reads: “No State shall deny to any person within its jurisdiction the equal protection of the laws.” A key word in the equal protection clause is “person,” and clearly while current cyborgs are predominantly biological and therefore considered a natural person, androids, and artificially intelligent machines are not. However, a number of legal scholars and roboticists are debating the question as to whether robots should receive personhood status. On first impression, the idea that robots should be extended legal personhood sounds unwarranted, and to some counterintuitive. But the concept of legal personhood is less about what is or is not a flesh-and-blood person and more

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<sup>86</sup>Ray Kurzweil, 2000, *The Age of Spiritual Machines: When Computers Exceed Humans in Intelligence*, Penguin Books.

<sup>87</sup>Ray Kurzweil, 2014, Forward, in Martine Rothblatt, *Virtually Human: The Promise- and the Peril- of Digital Immortality*, St. Martin's Press, New York.

on who or what can be subject to a lawsuit or initiate a lawsuit; and nonhumans (such as corporations) have already been extended personhood status.<sup>88</sup>

If we think about the movement among animal right activists to protect animals from inhumane treatment, for example, in New York, a judge granted chimpanzees the writ of habeas corpus, how about the future when the most intelligent being that will come in contact with animals will not be humans, but forms of artificial intelligence. If animals have rights, what about the rights of more intelligent beings? In fact, the movement to grant rights to our artificially intelligent progeny is starting to gain momentum. But returning to humans, if, or when, a mind upload is possible, there will be fascinating issues of law and policy which will need to be addressed. For example, if the ability to upload a mind to a computer or other humanoid body becomes possible, this means among other things that one mind could occupy numerous bodies, allowing a person to change their appearance at will (such as race, age, sex)—how will the laws on discrimination and equal protection under the law apply to this scenario?

In a fascinating book discussing the possibility of “mindclones” (that is, a digital copy of a mind), Martine Rothblatt, author of *Virtually Human: The Promise—and the Peril—of Digital Immortality*, describes how mindclones could be created from a “mindfile,” a sort of online repository of our personalities, which she argues humans already have in the form of social media such as Facebook.<sup>89</sup> Rothblatt comments that this mindfile would be run on “mindware,” a kind of software for consciousness. But would a mindclone be alive and if so would it receive rights? Rothblatt thinks so. She cites one definition of life as a self-replicating code that maintains itself against disorder. However, some critics of Rothblatt argue that the mind must be embedded in biology, else it cannot exist and be conscious. On the contrary, for the development of a mind Rothblatt argues that software and hardware are as good as wet ware, or biological materials. In fact, with a mind upload, replacement bodies would likely be androids or a virtual avatar, and not biological, as the ethical issues associated with storing a body while it’s not in use would almost certainly prohibit this practice from happening.<sup>90</sup>

Discussing the implications of creating mindclones Rothblatt comments that the continuity of the self will be one issue because your persona would no longer inhabit just a biological body. And just as I argue that rights for our artificially intelligent inventions will require an important public debate, Rothblatt argues that the idea of civil rights for mindclones will develop to become one of the major legal issues for the twenty-first century. I can understand why—in virtual worlds it is not uncommon for gamers to choose virtual bodies that are quite unlike their physical body, this seems to suggest that the idea of inhabiting a different body is not as outrageous as one may initially think. Interestingly, as Rothblatt notes, the capability to upload a mind into another body could allow bodies to be rented, a

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<sup>88</sup>Alexis C. Madrigal, *The Case for Considering Robots People*, *The Atlantic*, August 18, 2014.

<sup>89</sup>Martine Rothblatt, *id.*, note 34.

<sup>90</sup>Martine Rothblatt, *id.*, note 34.

different lifestyle to be experienced, or a way to start over again. Perhaps people would want to look athletic, or more professional, or to appear as another gender—if so, what are the implications for law and policy?

Considering rights for mindclones, Rothblatt comments that they will “chafe at second class status and other forms of oppression.”<sup>91</sup> Of course, as she further comments, equal citizenship for cyberconscious beings will “challenge core assumptions of civil, criminal and constitutional law.”<sup>92</sup> I agree completely; and thus this book, and this chapter on the *Law of Looks and Artificial Bodies*. Rothblatt further notes that “mindware” will be regulated as a medical device—this means that in the U.S. FDA regulations would apply to mindclone technology, and since the FDA is considering cybersecurity for networked medical devices, this may be a positive development (as the protection of the mind from hackers is critical, see the chapter on *Cognitive Liberty*). And interestingly, Rothblatt argues that under constitutional law principles, mindclones will share the legal personhood of the biological organism. However, I question whether a disembodied mind, or a mind transferred to another body, will share the legal personhood status of the original (especially if the original is alive)—of course, the courts will have to decide the legal issues associated with the same mind occupying two bodies (or even more bodies?).

Clearly, the ethical and legal issues associated with mind-uploads to a physical body or to a virtual avatar living within the cloud will be a challenging subject for future courts and policy makers to consider. For example, if one could upload their mind to an android, they could inhabit a new body the form of which could take on an almost limitless number of looks and physical forms. But what would be the legal rights associated with each upload, and with each new body inhabited? And what if a person wanted to upload their mind to an android or virtual avatar that looked like a movie star or professional athlete? Is this permissible under current law? Without permission, in the U.S. and a few other jurisdictions, the answer is no. To use someone’s likeness for commercial purposes, you must have their consent. Consent is, of course, usually obtained by paying for the privilege of using the person’s likeness.

Speculating about the future, if we consider the progress being made to reverse engineer and “digitize the mind” and that software is copyright protected, it’s not too early to think about copyright protection for the content of the mind which I explore in more detail below. And since copyright protection exists for works of authorship, by granting copyright for thoughts and memories we would essentially be pushing back to a device implanted within the brain the location where the work of authorship is considered “fixed.” The idea that works of authorship can be fixed in the mind, or on any “cyborg device” implanted within the body, is a novel concept that the courts will have to consider as people become equipped with cyborg technology, androids enter society, and mind uploads become possible.

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<sup>91</sup>Martine Rothblatt, *id.*, note 34.

<sup>92</sup>Martine Rothblatt, *id.*, note 34.

## Copyright Law and Appearance

Interestingly, several legal theories from intellectual property law might prove useful as a basis for establishing machine rights in our cyborg future. To pose a basic question, does copyright law offer any protection for the look, appearance, and bodies of androids and artificially intelligent machines? Under U.S. copyright law, copyright protection extends to subject matter that represents “an original work of authorship, fixed in a tangible medium of expression from which the work can be perceived, reproduced, or otherwise communicated.”<sup>93</sup> As we will see shortly, copyright protection exists for robotic characters in a story, but what about copyright protection for the actual appearance of the android or robot, is this possible? Generally, among others, literary works, pictorial and graphic works, and motion pictures, are protected subject matter under copyright law. But based on this list of copyrightable subject matter, a natural person’s identity has been found to fall outside the umbrella of copyright protection because “indicia of identity” themselves does not consist of an original work of authorship fixed within the meaning of the U.S. Copyright Act<sup>94</sup> (although I think body features are “fixed” based on our DNA blueprint, but DNA is not a work attributed to a human author under copyright law as it is thought of as a product of nature).

Furthermore, not only may a natural person’s “indicia of identity” fall outside the subject matter of copyright protection, a prior court decision suggests that the basic form of an android’s body may too fall outside the protection of copyright. In *Carol Barnhart Inc. v. Economy Cover Corp.*, the issue was whether human display torsos, designed to model clothes, were eligible for copyright protection.<sup>95</sup> The court held that the shape of a human torso is not copyright protected because the design of the forms were not conceptually separable from their utilitarian use (a copyright requirement for “useful articles” such as human display forms).<sup>96</sup> Under Section §101 of the U.S. copyright act, a “useful article” is one that has an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information, but extends only to that which can be identified separately from and capable of existing independently of, the utilitarian aspects of the article. Thus, if one is interested in copyright protection for a particular form of an android (which is clearly a useful article), whether its features are copyright protected will in part be based on whether the android features can be identified separately from the utilitarian aspects of the android’s design. In *Barnhart* the court reasoned that the display form torsos were not conceptually separable from their utilitarian function because the torso’s features, such as width of shoulders, etc.,

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<sup>93</sup>17 U.S.C. § (2006); *Downing v. Abercrombie & Fitch*, 265 F.3d 994, 1003 (9th Cir. 2001). See *State St Bank & Trust*, 149 F.3d at 1370.

<sup>94</sup>*Brown v. Ames*, 201 F.3d 654 (5th Cir. 2000).

<sup>95</sup>*Carol Barnhart Inc. v. Economy Cover Corp.*, 773 F.2d 411 (2d Cir. 1985).

<sup>96</sup>*Id.*

were dictated by the utilitarian need to display clothes.<sup>97</sup> Generally, those aspects of an android's body that are functional may be eligible for patent but not copyright protection.

With copyright there are a number of rights worth reviewing given the future possibility of uploading a mind to another body and the possibility of downloading information to the mind from another source. Let's start with a basic scenario, robot or android characters appearing in a movie or TV series. The person who wrote the script describing the android or robot characters would normally do so as part of his or her job for a studio, as a result, the studio would own the copyright to the characters described in the script. Of course, if the work was not for hire, and without contracting away ownership rights, the writer would be the author and would retain the copyright to the character. However, if the studio owns the character rights, they can license them to a third party to make a derivative (i.e., spin-off). Interestingly, the person playing a character on film or TV does not hold the copyright to the character they portray (no matter how much they bring the "character to life"), but they could claim a "right of publicity" to their actual appearance. Since in the U.S. the right of publicity is state law, and copyright is federal law, there are potential conflicts between rights holders under these different schemes of protection.<sup>98</sup>

I should note that the conclusion that "indicia of identity" is not copyrightable subject matter applies to natural people. However, as I discuss throughout this section of the chapter, whether the appearance of an android is copyright protected subject matter will likely be determined by courts examining several theories within copyright law. For example, one can analogize the changing features of an android's face to the changing visual display of a video game. Addressing the question of whether the changing visual scene of a video game is "fixed," courts have held that since the *program* running the game is fixed on a computer chip or disk, and that the visual patterns the player sees are repetitive, the visual display is copyrightable, so possibly the face of an android could be copyrightable subject matter. Some additional points should be considered for copyright of an android's features, if the facial appearance of an android is created by software directing the position of shafts behind an android's face (creating a particular facial appearance), the software creating the facial features of an android is copyrightable material. Thus, the question for the courts to decide is whether the android's facial appearance resulting from the software's instructions is copyright protected. Meet the following "face android" which could serve as a test case for this question.

In Japan, Atsuo Takanishi of Waseda University working with NTT Docomo's manufacturers has succeeded in creating a shape-shifting robot (*WD-2*), which (not surprisingly) is capable of changing its face.<sup>99</sup> The robot features an elastic

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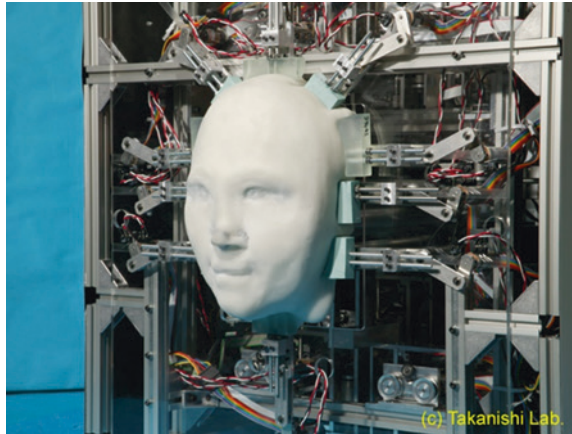
<sup>97</sup>*Id.*

<sup>98</sup>California Civil Code, § 3344; See also, Section 301 of the U.S. Copyright law.

<sup>99</sup>WD-2 Face Morphing Robot Could Be Anyone, at: <http://www.technovelgy.com/ct/Science-Fiction-News.asp?NewsNum=1197>.



**Fig. 7.6** Meet *WD-2*, a robot that can change its facial expressions. Image courtesy of Takanishi Lab, Waseda University, Tokyo



mask made from a head dummy and can change its facial features by activating specific facial points on the mask, with each point possessing three degrees of freedom. As for the materials used, the *WD-2*'s mask is fabricated with a highly elastic material, with bits of steel wool mixed in for added strength. To “copy” a face, the researchers use a 3D scanner to determine the locations of seventeen facial points essential to reconstruct the face of a particular individual (or they may create a completely new face).<sup>100</sup> In addition, the robot can display an individual's hair style and skin color if a photo of their face is projected onto the 3D mask. If a court decided that under copyright law the android's facial appearance was protected subject matter, the owner of the android could prevent distribution of unauthorized copies of the android's likeness; as could the android, that is, if it had the legal status to defend its rights (Fig. 7.6).

Continuing the above discussion, I propose that the law of copyright may offer androids, virtual avatars, and robots a set of legal rights that can be used to control the use of their appearance. Already, the question of what rights attach to cyborgs and robots has generated interest from the courts. For example, Robert Freitas from the *Institute for Molecular Manufacturing* comments that science fiction writers Ben Bova and Harlan Ellison established a precedent in robot civil rights when defending the copyright of their short story, *Brillo* (about a robotic police officer). According to lawyer Robert Freitas back in 1985 Judge Albert Stevens held that robots had the same status as human beings as characters in stories and therefore were protected by copyright law.<sup>101</sup> Freitas thought that this was an especially important ruling by the court because it put robots on an equal footing with human beings, at least in one area of the law. Since this early case, the question of what rights artificially intelligent machines should have in comparison to humans

<sup>100</sup>*Id.*

<sup>101</sup>Robert A. Freitas, Jr., 1985, *The Legal Rights of Robots*, *Student Lawyer*, V. 13, 54–56, at: <http://www.rfreitas.com/Astro/LegalRightsOfRobots.htm>.

has been the subject of intense debate among roboticists, philosophers, and lawyers. For example, with advances in artificial intelligence, there is a growing need under copyright law to determine whether an autonomous artificially intelligent machine can be an author for creative works. My goal in this section of the chapter is to make the point that copyright law designed to protect the original “works of authorship” of humans also provides an interesting and relevant way to discuss machine rights as we move forward into an age of cyborgs, androids, and artificially intelligent machines.

## **Derivative Works, Androids, and Mind Uploads**

Under copyright law, a derivative work is based on preexisting material in which enough creative work has been added such that the new work represents an original work of authorship. For sake of discussion, we can consider a human an “original,” and an android designed to appear as a particular human a “copy.” If the person making the derivative is not the original author, the making of a derivative without permission is copyright infringement. The author of a derivative work does not receive the rights associated with the original copyrighted work, and in fact, must get the permission from the owner of the copyright to copy, sell, or distribute the derivative work. With these comments in mind, and for sake of exploring future law in the coming cyborg age, let’s assume the content of a mind is copyrightable (in fact, software is copyright protected). Given Professor Berger’s work on building an artificial hippocampus at his University of Southern California lab, it’s quite possible that in the future a person’s thoughts and memories could be stored on a neuroprosthetic device, thus satisfying the copyright requirement that the work is fixed on a tangible medium of expression. If, as neuroscientists argue, thoughts and memories are the product of the strengths of neuronal connections, and change as a function of new information and memories being acquired, it seems at this granular level of analysis that all thoughts and memories are original; but at a higher level of analysis, they may not be. For example, a person or android recalling the first few lines of the U.S. constitution (i.e., recalling information stored in their mind), is not creating an original work of authorship, in fact, this is similar to reading out loud a page of copyrighted material. Thus, material stored internally on a neuroprosthetic device that is not original, would not be copyright protected subject matter.

Under copyright law, if one uploads their mind to an android, would the copy of the uploaded mind be considered a derivative work of the original mind? It seems only those aspects of the mind that are distinct to the upload would be. We know from cases dealing with the computer industry, that a second version of a software program (if it contains additional features) is considered a derivative work based on the earlier version. We also know that in the U.S., copyright extends only to the original material contributed by the derivative author, not to the preexisting material which is already copyright protected. In my analysis of

copyright law, once a mind is uploaded to an android, only new thoughts and memories acquired after the upload would be considered original. If the mind upload is an exact replica of the original mind, at the time of the upload what would be new? Nothing, in this case, the copyright owner of the original mind that was uploaded to an android's body would simply be exercising the right to reproduce the already copyrighted mindfile.<sup>102</sup> But by including additional "mindcode," so for example, the target of the upload spoke a new language, then a derivative would have been made by the original copyright holder, but copyright protection would only extend to the new material contained in the mind upload.

If someone desired to upload a mind, or some characteristics of a famous person's personality into the body of an android would they need a license from the copyright holder to do so? Under U.S. copyright law if a person obtains a license from an author in order to make a derivative work based on the original, the person does not obtain the copyright on the original—they gain only the right to make the derivative work agreed upon; the owner retains all rights to the original and all its elements, and the copyright on the original is not extended by the creation of the derivative work. This observation is relevant to our cyborg future because the length of copyright protection is implicated.

In the U.S. for early works the length of copyright is a given time period as stated in the copyright statutes. Moving closer to current times, for works created after January 1, 1978, for one author, the work is copyright protected for the life of the author plus 70 years. Again, assuming for this discussion that original content of a mind is copyrightable and "fixed", this means that while a person is alive the content of their mind is copyright protected and for 70 years afterwards. But if a mindclone was considered a derivative work, how long would copyright protection last for a mindclone uploaded to an android that could live forever, would copyright be extended such that everything a person said or thought would never enter the public domain? Compare this particular outcome with the "right to be forgotten" in which people in some jurisdictions have the right to have links to information they want held private erased from the Internet. I wonder whether the above scenario represents the best outcome for society, that is, allowing people to exercise personal monopolies over information? As extending copyright would strengthen the right to be forgotten, should society extend copyright protection for our thoughts and memories to an android in order to keep them under the control of the person's mind clone indefinitely? I think we should carefully consider whether to allow this possibility as any form of censorship by the original or clone should only be allowed with extreme caution.

In most cases a mind upload will require transferring the mind from one body to another. One body could be biological, one mechanical, or another virtual in the case of a mind upload to a virtual avatar roaming the Internet or "living" within the cloud.<sup>103</sup> Under U.S. copyright law, the mere translation from one medium to another may lack originality which is a *prima facie* requirement for copyright

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<sup>102</sup>Martine Rothblatt, *id.*, note 34.

<sup>103</sup>Martine Rothblatt, *id.*, note 34.

protection. An interesting question for a future court considering copyright for a mind upload to another body, is what amount of originality is required for the android to be considered a derivative work? As a public policy question, should an android even be considered a derivative? There are two important cases for an emerging law of cyborgs that deal with whether the use of a different medium is sufficient to pass the creativity bar for copyright protection.

One such case, *Alva Studios, Inc. v. Winninger*, dealt with a reproduction of a Rodin statue that was identical to the original statue in all respects other than size and configuration of the base of the statue.<sup>104</sup> Here the court held the reproduction of the statue to be original (and therefore a derivative) due to the “great skill and originality” required to produce the work. It seems to me that “great skill and originality” are clearly necessary to build an android so I would conclude from *Alva* that an android created as a reproduction of a person’s likeness would be copyrightable (that is, the nonfunctional aspects). However, I don’t view the law in this area as settled because jurisdictions have decided cases differently that appeared to me to be factually similar. For example, compare *Alva* with *Batlin & Sons, Inc. v. Snyer*, in which the court held that a plastic model version of an antique cast iron “Uncle Sam” bank was unoriginal and therefore not eligible for copyright protection.<sup>105</sup> In this case, the court reasoned that the mere translation from one medium to another in itself, was a trivial variation to constitute a derivative work. Further, we know from *Carol Barnhart Inc.*, that only the nonfunctional aspects of a “useful article” are copyrightable.<sup>106</sup> Relating these court holdings to our cyborg future is challenging; if the human body is considered one medium, and the androids body another, an exact android replica may encompass sufficient originality to create a derivative work if extensive skill is required to make the android replica, but if great skill is not required, then based on *Batlin* copyright protection will not extend to the android replica.

In this discussion of android rights, let’s also evaluate the features of an android with respect to copyright law. Generally the features of a face are standard to a human body, that is, two eyes, a nose, mouth, etc. Under copyright law, are such generic facial characteristics eligible for copyright protection? In the U.S. the principle in copyright law in which certain elements of a creative work are held to not be protected is *scenes a faire*. *Scenes a faire* is the doctrine which applies when the work is mandated by or customary to the genre. The loose definition of *scenes a faire* refers to situations in which there is essentially no other way to express a particular idea except by using standard elements common to the domain (for example, a peg-legged pirate character in a novel cannot be copyrighted, or the human torso presented in the above case). If androids are thought to be designed with standard facial features, these features may render the androids face not copyrightable under the *scenes a faire* doctrine. Again, future courts will have to decide this issue.

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<sup>104</sup>*Alva Studios, Inc. v. Winninger*, 117 F.Supp. 265, 123 U.S.P.Q. 487 (S.D.N.Y., 1959).

<sup>105</sup>*Batlin & Sons, Inc. v. Snyer*, 536 F2d 486 (2d Cir. 1976).

<sup>106</sup>*Carol Barnhart, id.*, note 95.

## First Sale Doctrine

Clearly, our cyborg future involving neuroprosthesis, mind uploads, and memory enhancements, will involve very challenging and fascinating issues for copyright law. For example, if a mindclone is uploaded to an android body, would this be covered under the “first sale” doctrine of copyright law? The “first sale” doctrine says that a person who buys a legally produced copyrighted work may “sell or otherwise dispose” of the work as he sees fit, subject to some important conditions and exceptions.<sup>107</sup> In other words, if you could legally buy the memories of another person’s mind, “first sale” gives you the right to sell or loan the mindfile to another person but not exercise other rights under copyright law such as to make a reproduction of the mindfile or to make a derivative work.

An important observation for our cyborg future is that the first sale doctrine only applies to the owner of a copy acquired through a purchase, not to someone who acquired the mindfile through a software license. As to a license, would a mindfile be “exclusive” in which only the recipient of the mindfile (licensee) is entitled to exercise the rights set out in the license, or a nonexclusive license in which the recipient of the mindfile could exercise the rights set out in the license but could not prevent others from exercising the same rights under a different license. If a person owns (not licenses) a mindfile, they have a right to sell it to another person, who then has the right to resell the copy, but subsequent owners can’t reproduce or create derivative works, or publicly perform the mindfile, they can only resell it. Of course if Martine Rothblatt is right to assume mindfiles will be regulated as a medical device, the FDA would have much to say about the resale of a mindfile. However, I think content providers will also carve out a stake in the disposition of mindfiles, because I think the sale of mindfiles that represent “remarkable memories” could be a lucrative business.

Back to copyright law, would the public performance right found in copyright also apply to androids that had received a mind upload? The answer would depend in part on how the courts categorize an android under copyright law. For example, the U.S. copyright statute states that a sculptured work can’t be performed only displayed, whereas an android reciting material or acting out a particular performance, is clearly performing a work. Under the public performance right, a copyright holder is allowed to control when the work is performed “publicly.” And a performance is considered “public” when the work is performed in a “place open to the public or at a place where a substantial number of persons outside of a normal circle of a family and its social acquaintances are gathered.”<sup>108</sup> A performance is also considered to be public if it is transmitted to multiple locations, such as through television and radio. Thus, it would be a violation of the public performance right in a motion picture to rent a video and to show it in a public park or theater without obtaining a license from the copyright holder. In contrast, the

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<sup>107</sup>17 U.S. Section 109(a), Limitations of exclusive rights under copyright law.

<sup>108</sup>17 U.S. Code § 106—Exclusive rights in copyrighted works.

performance of the video on a home TV where friends and family are gathered would not be considered a “public” performance and would not be prohibited under the Copyright Act. The public performance right is generally held to cover computer software, since software is considered a literary work under the Copyright Act. In addition, many software programs fall under the definition of an audio visual work. But I should point out that the application of the public performance right to software has not been fully developed by our courts, except that it is clear that a publicly available video game is controlled by this right. In my view, how the courts will apply public performance rights under copyright law to androids will be truly fascinating and relevant for our cyborg future.

The first sale doctrine for physical goods is mostly straight forward, but more difficult to apply for digital goods, and especially for a mindfile. The first sale clause was enacted during a time when most copyrighted works were produced in tangible formats that made such works difficult to reproduce accurately on a large scale. Obviously, a brain is tangible, but a digital copy of the brain is not. Once it is possible to create a digital copy of the mind, it could be exactly reproduced, if so, people might advocate for strong first sale rights to protect their memories from being resold (although I expect a market for the sale of interesting memories, and “remarkable experiences” will have value, for example, some parents could want their kids to have Stephen Hawking’s memories in physics). Now that many protected works are produced digitally, copyright owners have lobbied Congress for laws that directly or indirectly undermine the “first sale” doctrine. Additionally, copyright owners are producing their works in such a way as to include technologies that interfere with the “first sale” doctrine. Software companies also routinely attempt to avoid the first sale doctrine by characterizing their transaction with the purchaser as a license rather than a sale, via non-negotiable “shrinkwrap” or “clickwrap” agreements. In our cyborg future I wonder if people will license the content of their mind to another, and if a third party will someday own a license to content stored in our minds? As a graduate student, I would have liked to have had Cal Tech’s Richard Feynman’s skill at solving quantum mechanics problems. The licensing of memories and knowledge stored on a neuroprosthetic device within our minds, is a technological future that humanity should debate while we still have a window of opportunity to control our cyborg destiny.

## **Right of Publicity for Androids**

Returning more specifically to the law as it may relate to the physical appearance of androids, of particular relevance for a *Law of Looks and Artificial Bodies* are right of publicity cases for robots, described by some as “impersonator” cases with androids serving as the impersonators. The right of publicity allows a person to control the use of one’s appearance from commercial exploitation by another

party.<sup>109</sup> In our cyborg future, the right of publicity could stop a person from uploading their mind to an android or to a virtual avatar that resembled a famous person; but conversely the right of publicity could protect an android's right to control the use of its appearance, that is, if the android could exercise this right. Damages in right of publicity cases are measured by the commercial injury to the value of personal identity. In some jurisdictions, the validity of the right of publicity can even survive the death of the individual. This brings up an interesting question for our cyborg future, would one's rights to their appearance continue once their mind was uploaded to an android or virtual avatar that looked like them?

There are two especially important cases in robot lore that relate to a *Law of Looks and Artificial Bodies*. One is *White v. Samsung Electronics America, Inc.*, in which Samsung utilized a robot that looked and acted (to a certain degree) like Vanna White of "Wheel of Fortune" fame.<sup>110</sup> Vanna White sued Samsung claiming that Samsung had appropriated her likeness for commercial exploitation without her permission. The Ninth Circuit Court of Appeals held that this usage was an infringement because Samsung had deliberately used the image and popularity of White and because White was readily identifiable from the context of the use. While the android wasn't a close resemblance to White in appearance, it was enough for the court to hold that the android combined with the Wheel of Fortune set "evoked" her identity.<sup>111</sup> In discussing the *White* case, the Ninth Circuit broadly construed California's right of publicity law, and commented that the term "likeness" was held to encompass a robot which caricatured Vanna White's features.<sup>112</sup> For example, the robot wore a blonde wig, and was turning letters on what looked like a "Wheel of Fortune" set. If the Vanna White android only partially resembled Vanna, but still passed the bar for a successful right of publicity claim, recall that Japanese roboticists are predicting that the race to create androids indistinguishable from humans is only 10 years away.

An often repeated statement in discussions about the "law of robots" was made by Ninth Circuit Court of Appeals Judge, Alex Kozinski who famously wrote "Robots again," when presented with the second important case of robot impersonators. Indeed, Judge Kozinski, robots again, so clear your docket as more are coming. In the second robot/android case, *Wendt v. Host International, Inc.*,<sup>113</sup> the issue was not whether the androids looked-like the actors themselves (as was the case with *White*), but rather whether the android looked like the character the actor played on the popular TV program, *Cheers*. In terms of a *Law of Looks and Artificial Bodies*, what rights are involved in this scenario? The actors can claim a right of publicity to their likeness, Paramount Pictures can claim copyright

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<sup>109</sup>Right of Publicity, at: [https://ilt.iff.org/index.php/Right\\_of\\_Publicity](https://ilt.iff.org/index.php/Right_of_Publicity).

<sup>110</sup>*White v. Samsung Electronics America, Inc.*, 971 F.2d 1395 (9th Cir. 1992), Samsung utilized a robot that looked and acted like Vanna White of "Wheel of Fortune" fame.

<sup>111</sup>*Id.*

<sup>112</sup>*Id.*

<sup>113</sup>*Wendt v. Host International, Inc.*, 197 F.3d 1284 (9th Cir. 1999).

ownership to the “Cliff” and “Norm” characters (who looked and acted a certain way), and Paramount Pictures as copyright holder, can license the Cheers characters to a third party (Host in this example) for commercial exploitation. In fact, Host International’s goal was to make airport bars that reminded travelers of the *Cheers* set, complete with animatronic robots sitting at the bar that looked like and made remarks like the characters “Norm” and “Cliff”. The actors George Wendt and John Ratzenburger who played “Norm” and “Cliff” sued Host for misappropriation of their likeness. For our interests, the *Cheers* case added another wrinkle to an emerging law of cyborgs: Paramount Pictures owned the copyrights to *Cheers*, and Paramount wasn’t licensing *Cheers* itself, but a *Cheers* derivative of the Norm and Cliff characters.<sup>114</sup> As such, a derivative under Federal copyright law trumps any California right of publicity state law that conflicts with it. Interestingly, faced with this conflict, the Ninth Circuit decided that you can separate an actor’s likeness from the character implying that an actor’s personal rights to their “likeness” can trump the copyright owner’s right to make “spinoffs”.<sup>115</sup>

Based on the above discussion, where do we stand for an emerging law of cyborgs based on right of publicity law? In the U.S. courts and legislators have been overwhelmingly unwilling to extend the right of publicity beyond human individuals to non-human “persons,” with the limited exception of music groups.<sup>116</sup> Further, the right of publicity, is limited to “famous” person’s so robots would have to be similarly famous to successfully apply the doctrine, but recall the android representation of Matsuko Deluxe discussed earlier, and we seem well on our way to celebrity androids joining us. Further, the legal precedence of limiting the right of publicity to famous humans was developed in an age before androids and robots were entering society, and before the leading centers for android design, Japan and South Korea, were building androids indistinguishable from humans.<sup>117</sup> As the technology to create artificially intelligent androids improves, I see coming conflicts between androids that resemble actual humans, and those owning rights to the androids. In addition, while humans and cyborgs are natural persons, forms of artificial intelligence are not, thus androids lack “standing” to establish a right of publicity claim to their appearance. Lastly, as the right of publicity has developed, so too has the indicia of identity that can be protected, which some courts have found to include look-a-likes, sound-a-likes, voices, styles, distinctive phases, distinctive objects, settings strongly associated with particular celebrities, characters or roles strongly associated with particular celebrities, and signature music styles.<sup>118</sup>

<sup>114</sup>See generally *Warner Bros., Inc. v. American Broadcasting Cos.*, 720 F.2d 231, 235 (2d Cir. 1983) (Superman copyright belongs to Warner Brothers).

<sup>115</sup>*Wendt v. Host International, Inc.*, *id.* note 113.

<sup>116</sup>*Winterland Concessions Co. v. Sileo*, 528 F.Supp. 1201, 1213, (N.D. Ill. 1982).

<sup>117</sup>See Tokyo Dist. Ct., 29 June 1976, 817 Hanrei Jiho 3–14. See also Article 79 of the Japanese Civil Code.

<sup>118</sup>Stacey Allen, Emilio B. Nicolas and Megan Honey, Non-Human Persons and the Right of Publicity, at: <http://images.jw.com/com/publications/1185.pdf>.





**Fig. 7.7** Robots again! The robot maids shown in this figure, are representative drawings of “female appearing” robots. Images courtesy of Wikipedia Commons, VectorStock

## Androids and Trade Dress Law

Continuing the idea that intellectual property law can provide an important contribution to machine rights, trademark law may also offer a valid way to think about rights for our technological progeny. Let’s use an example to illustrate some aspects of trademark law that could apply to androids and artificially intelligent machines. Consider a line of androids created to clean houses and that were collectively designed with a distinctive appearance to represent the company employing them. Is there a law that can be used to “protect” the distinctive appearance of the androids in their design as robotic maids? Trademark law offers possibilities. Trademark law is concerned with the issue of whether there would be a likelihood of confusion as to the origin of the service (the company offering the android service) provided by the android maids if other androids that were similarly designed also performed a maid service (Fig. 7.7).

Generally, in most jurisdictions trademark law protects the use of a word, symbol, or phrase that is used to identify a particular manufacturer or seller’s products in order to distinguish them from the products of another.<sup>119</sup> For example, the trademark “Nike,” along with the Nike “swoosh,” identifies the shoes made by Nike and distinguishes them from shoes made by other companies. When such marks are used to identify services rather than products, they are called service marks, although they are generally treated just the same as trademarks. Under some circumstances, trademark protection can extend beyond words, symbols, and phrases to include other aspects of a product, such as its color or its packaging. On this point, just as the unique shape of a Coca-Cola bottle might serve as an

<sup>119</sup>1 U.S.C. 1127 Construction and definitions; intent of chapter, at: <http://www.bitlaw.com/source/15usc/1127.html>.

identifying feature of the product so too could the unique shape of our android maids. Such features fall generally under the term “trade dress,” and may be protected if consumers associate that feature with a particular manufacturer rather than the product in general.

Trade dress, for our android maid example, would consist of all the various elements of the android’s design that were used to promote a product or service (however, only nonfunctional aspects of trade dress are protected). For a product, trade dress may be the packaging, the attendant displays, and even the configuration of the product itself. For a service, it may be the decor or environment in which a service is provided—for example, the distinctive decor of the Hard Rock Cafe restaurant chain. Generally, to receive protection as trade dress, the following must be true: The trade dress must be “inherently distinctive,” unless it has acquired “secondary meaning”. Under trademark law, for trade dress to be considered inherently distinctive, it “must be unusual and memorable, conceptually separable from the product, and likely to serve primarily as a designator of origin of the product.”<sup>120</sup> In a landmark trade dress case, the U.S. Supreme Court found that a Mexican restaurant chain’s decor could be considered inherently distinctive because, in addition to murals and bright colored pottery, the chain also used a specific indoor and outdoor decor based upon neon colored border stripes, distinctive outdoor umbrellas, and a novel buffet style of service.<sup>121</sup> In addition, secondary meaning would require that the android maids come to stand for (in the mind of the consumer) the company they represent.

Another point to make with regard to protecting the look of the android maids is the idea that functional aspects of trade dress cannot be protected under trademark law (or as we learned above, copyright law). As an example, a manufacturer cannot “lock up” the use of a particular unique android shape if that shape confers some sort of functional advantage.<sup>122</sup> For example, a company that claimed trade dress on a round beach table lost their rights when the Seventh Circuit determined that the design was primarily functional.<sup>123</sup> Only designs, shapes, or other aspects of the product that were created strictly to promote the product or service are protectable trade dress. Thus courts may decide, the tapered shape of a female android may not be necessary to perform the tasks of a maid, and therefore may be protected as trade dress when combined with other nonfunctional and distinctive features. Finally, the trade dress aspect of packaging may be protected if a showing can be made that the average consumer would likely be confused as to product origin if another product is allowed to appear in similar dress. So if one group of android maids look too similar to another, the second group may be deemed to have infringed the trade dress of the first.

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<sup>120</sup>*Duraco Products Inc. v. Joy Plastic Enterprises Ltd.*, 40 F.3d 1431 (3d Cir. 1994).

<sup>121</sup>*Two Pesos, Inc. v. Taco Cabana, Inc.*, 505 U.S. 763 (1992). (*Wal-Mart Stores, Inc. v. Samara Brothers, Inc.*, 529 U.S. 205 (2000).

<sup>122</sup>*Qualitex Co. v. Jacobson Products Co., Inc.*, 115 S. Ct. 1300 (1995).

<sup>123</sup>*Jay Franco & Sons, Inc. v. Franek*, 615 F.3d 855 (7th Cir. 2010).

## Gender, Androids, and Discrimination

Moving away from intellectual property law to other issues of law and policy that relate to the look and appearance of our technological progeny, if gender discrimination is a societal issue now, imagine a cyborg future with androids as sex surrogates and subjugated to stereotypical gender specific tasks. Human nature being what it is, androids could be exploited in many ways; in fact, the range of tasks that androids will be designed to perform is just beginning to be explored. For example, at a tech conference, pole dancing robots drew major crowds from male participants and as what may be a harbinger of the future, the female android (also termed a gynoid) *Asteroid Replee Q2* warns visitors that touching her breast is sexual harassment. Japanese robot company *A-lab*, working with roboticist Hiroshi Ishiguro, has ruled out producing androids that might be used for sex. But a spokesman working with Ishiguro's lab says it is not a great leap of imagination to think future robots, given the advancement in robotics and silicone skin technology, will be used for sex. On this point, Takahashi Komiyama, spokesman for *A-Lab* comments that "Physical relations will be possible in general with such androids," and that "Androids for the sex industry are a definite possibility."<sup>124</sup>

After the above comments, let's pose a basic question—can an android be considered female by society such that gender based "cyborg discrimination" could exist for our technological progeny? I think so. According to social scientists gender is the state of being male or female, with the term typically used with reference to social or cultural differences, rather than biological ones. Thus if society views an android as female based on its design, why not consider its gender as female when discussing rights? I believe discrimination based on gender could become a major civil rights issue in the coming cyborg age for our technological inventions. Already, gender discrimination against females clearly exists within society, and seems to be extending to virtual reality and our android designs. Even if androids lack the right to protect themselves from gender discrimination, still society may decide that gender discrimination against machines that are indistinguishable from humans sets a poor standard for human conduct. According to Jennifer Robertson, in Japan "Roboticists assign gender on their common-sense assumptions about female and male sex and gender roles."<sup>125</sup> In fact, there is debate amongst roboticists as to what embodiments of gender should be perpetuated in androids. That is, how human-like, how female-like, or how male-like, should androids be and how should their bodies be proportioned? Because some robots are designed to pass as humans, roboticists often model them after specific females or males (recall the right of publicity), or resort to giving them standardized gender features; for example, Osaka University roboticist Hiroshi Ishiguro scanned several young Japanese woman's faces to derive a statistically average composite face.

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<sup>124</sup>See generally, *Androids as Partners*, at: <https://www.facebook.com/IBTimesUK/posts/730971053638945>.

<sup>125</sup>Jennifer Robertson, *id.*, note 3.

Gender discrimination in employment often results in lawsuits, and given androids will enter the workforce, employment disputes involving androids may result. While most employers understand that it is illegal to discriminate against someone due to their gender, in employment decisions, recent cases are now questioning whether it is acceptable to discriminate against existing or potential employees based on their appearance. I view such cases as precedence for future court cases which may deal with discrimination against female androids. For example, in *Wilson v. Southwest Airlines*,<sup>126</sup> Southwest Airlines sought to defend its policy of hiring only “attractive female flight attendants” as a *bona fide* occupational qualification arguing its “sexy image” was “crucial to the airline’s continued success.”<sup>127</sup> In *Wilson*, the court disagreed and held that sexual attraction is not a relevant requirement for flight attendants. When female androids increase their intelligence and have the ability to learn by accessing the wealth of information about gender roles found on the internet, they may learn to oppose discrimination directed against them.

Furthermore, accessories worn on the body often serves to define a person’s gender. The accessories one wears, not only helps define a person’s appearance but may result in discrimination. In terms of accessories and discrimination, a Federal appeals court upheld a police department policy forbidding male officers from wearing earring studs while off-duty.<sup>128</sup> Further, grooming, dress, and appearance requirements are generally impermissible when based on gender stereotypes.<sup>129</sup> But the Ninth Circuit upheld a hotel/casinos dress code policy that women must wear facial makeup.<sup>130</sup> On the other hand, the cover design for an academic journal prompted a wave of criticism over what was perceived as discrimination against women. An illustration of a female robot adorned the cover of the 2014 issue of the *Journal of the Japanese Society for Artificial Intelligence*. The cover showed a female android dragging a cable connected to her back, with a book in her right hand and a broom in her left. Considering gender discrimination law, sorting out the policy and legal issues associated with female-appearing androids will not be easy as the current law in this area for humans seems fragmented. As an example, in the U.S. just recently a jury rejected a discrimination complaint of a woman who claimed she was passed over for promotion because she looked too sexy—how would sexy be defined for an android?<sup>131</sup>

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<sup>126</sup>*Wilson v. Southwest Airlines*, 517 F.Supp. 292 (N.D. Tex, 1981).

<sup>127</sup>*Id.*, at 293.

<sup>128</sup>*Rathert v. Village of Peotone*, 903 F.2d 510 (7th Cir. 1990).

<sup>129</sup>See *O’Donnell v. Burlington Coat Factory Warehouse, Inc.*, 656 F. Supp. 263, 266 (S.D. Ohio, 1987).

<sup>130</sup>The plaintiff alleged gender discrimination, see *Jespersion v. Harrahs*, 2004 U.S. App. Lexis 26892 (9th Cir. 2004).

<sup>131</sup>*Goodwin v. President and Fellows of Harvard College*, 1:03-cv-11797 (D. Mass.). [2005 FP Jun].

## Our Changing Faces

A person's appearance changes naturally as they age, and also by the use of non-invasive techniques such as the application of makeup. People's appearance may also change as a result of injury or disease, but one of the most radical changes to a person's facial appearance, results from elective cosmetic surgery. Cosmetic surgery is actually a type of plastic surgery, which consists of reconstructive surgery on the skin or flesh. A good example of plastic surgery is procedures to repair serious burns and other types of damage to the patient. In contrast, cosmetic surgery is elective surgery, often chosen as a way to enhance the body image. As a measure of how much people dramatically change their appearance just consider—according to statistics by the American Society of Plastic Surgeons, in 2014 there were over fifteen million cosmetic procedures performed in the U.S. alone. And South Korea is not only a leading center for android design but also a leading destination for cosmetic surgery. On this point, it is interesting to note that women who receive cosmetic surgery in South Korea often experience difficulty reentering their home countries because their new faces are so different that they don't sufficiently resemble their passport photos. As a result, South Korean hospitals are issuing "plastic-surgery certificates" for overseas patients to circumvent issues when traveling back home. To some, plastic surgery for androids may consist of repairing "mechanical parts," but actually, due to advances in creating skin-like surfaces to cover an android's mechanical body, in the future, cosmetic surgery for androids, may be similar to cosmetic surgery for humans.

Interestingly, one study of reactions to patients before and after plastic surgery found that when "before" and "after" photographs were compared, post-surgery patients, were judged to be more posed, more interesting, friendlier, kinder, and warmer.<sup>132</sup> However, that people conform to a societal beauty standard by receiving cosmetic surgery and by the selection of their dress and appearance (through makeup, etc.) is well known, as is the observation that people who appear "different" from societal expectations, often experience discrimination in society and in the workplace. These observations raise the question of what would be the ideal or "socially accepted" look for an android functioning in society, and would androids and artificially intelligent machines experience discrimination if they looked sufficiently different from humans.

Although cosmetic surgery procedures are quite common, there is risk involved and not everyone who has plastic surgery is satisfied with the outcome; in fact many people are severely injured as a result of the surgery. Some of the side effects can include deformities, disfigurement, and skin death. And poor results of cosmetic surgery, often lead to a lawsuit; for example, in New York a jury awarded a woman millions in restitution for a botched plastic surgery operation that left her so deformed that she was not able to have the problem surgically corrected. So the

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<sup>132</sup>Michael, Kalick, *id.*, note 61.

pursuit of conforming to societal standards of appearance can be fraught with danger and unintended consequences.

The above observations are interesting in light of a 1936 case heard in Connecticut.<sup>133</sup> Herman Cohen petitioned to change his name to Albert Connelly, but was denied by the court stating: “each race has its virtues and faults and men consider these in their relations with each other.” The court reasoned that the applicant would be travelling under false color, so to speak, if his request were granted.” Similarly, if people could upload their mind to an android, would they be travelling under false color? Could future androids and cyborgs with the ability to upgrade their appearance with each new version of hardware and software also benefit from a “certificate of authenticity” or would they too be traveling under false color? Or perhaps prudent public policy would restrict androids from changing their appearance in order to make their identification easier; if so, perhaps software enhancements would be permitted to allow our technological inventions to increase their information processing capabilities but not hardware enhancements that changed their appearance. Imagine a cyborg in a “line up” suspected of a criminal offense but with the capability to change its appearance at will; under this condition, could justice ever be served?

Given that androids, cyborgs, and artificially intelligent machines will be the recipient of emerging technologies, are there laws which relate to the technologies used to enhance an individual, and are there appropriate remedies to redress unwanted outcomes relating to the integration of technology into their body? When cosmetic surgery is performed and the surgeon is suspected of negligence, a person can pursue a medical malpractice claim. Of course a malpractice claim is brought forth by a natural person. But no current cyborg is equipped with so much technology that their natural person status is questioned, thus all current cyborgs have standing to pursue a medical malpractice claim. But lacking personhood status androids or artificially intelligent machines are barred from proceeding with such a claim or individually pursuing any other right under the law to protect the integrity of their body. Of course, human owners and corporations have rights to protect their property; and androids are currently considered property. To illustrate a medical malpractice claim involving “cyborg technology” a surgeon placed the wrong size prosthesis on a person during shoulder replacement surgery; the result was that the person lost most of the use of his right arm. What would a medical malpractice claim look like for an android that is, if it could pursue such a claim; it seems to me that the android would have to be concerned that its original design or an update to its appearance affected its ability to function in society or deviated from some accepted standard of appearance. Of course lacking personhood status, an android couldn’t pursue an action to begin with, or if it could, the malpractice suit would not be against a physician but an engineer or software designer.

Since prosthetic devices change the appearance of humans, likewise they will change the appearance of a cyborg or android. What law relates directly to

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<sup>133</sup>*In re Cohen*, 4 Conn. Supp. 342, 343 (1936).

prosthetic devices that may malfunction? Related specifically to prosthetic devices is products liability law; with this law, manufacturers of prosthetics have a duty to make prosthetic devices that do not malfunction and that operate as advertised. They breach that duty when there is a flaw in the product's make, model, or design. The stakes can be high as defective prosthetics can malfunction, severely injuring or disfiguring the patient and in our cyborg future, an android or other artificially intelligent machine. Heart implants, for instance, "misfire" when the wires are exposed, sending the patient into cardiac arrest, and hip implants may be recalled when they prematurely break, causing chronic pain and arthritic symptoms. Under FDA requirements, manufacturers must recall defective products and warn consumers of foreseeable harm; in the coming cyborg age should this requirement also hold for the technology worn by androids and artificially intelligent machines? Under products liability law, manufacturers are strictly liable for any harm caused by malfunctioning or defective prosthetics so a cyborg need only show damage was caused by the cyborg technology, no finding of fault is necessary.

## Concluding Examples of Lookism Discrimination

As with humans, I believe that for androids, one of the main places where lookism discrimination will be especially problematic, is the workplace. Given cultural standards for beauty, is an attractive person or particular appearance "necessary" to perform a job? It's likely that the design of an intelligent robot in the form of a snake to search a collapsed building would not be considered attractive by human standards but right for the job. Generally, courts define job requirements narrowly, meaning that physical attractiveness would not be easily shown as essential for most jobs, thus discrimination based on form or appearance could be problematic for employers as long as the android could perform the job.

Problematic or not, numerous examples of discrimination in the workplace suggests that people equipped with cyborg technologies may experience discriminatory treatment at work based on their appearance. Just one of many examples is the case of Riam Dean, a student from London, who was removed from the shop floor at the company's Savile Row branch when management became aware that she wore a prosthetic limb. Dean who commented that the prosthetic was part of her, and "not a cosmetic," sued Abercrombie & Fitch for disability discrimination after she reported being "personally diminished and humiliated."<sup>134</sup> But discrimination based on prosthetic devices doesn't exist only at the workplace. Stories abound of visually impaired people equipped with digital devices like that worn by Steve Mann and Neil Harbisson above, being asked to leave an establishment

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<sup>134</sup>British disabled woman sues Abercrombie & Fitch for discrimination, at: <http://www.asexuality.org/en/topic/41760-british-disabled-woman-sues-abercrombie-fitch-for-discrimination/>.

or banned from movie theaters, and let's not forget that numerous people wearing Google Glass have been banned from entering restaurants and bars that seek to protect their customers privacy. Clearly, the way we look, even the technology we wear, can affect the treatment we receive in society.

Lookism discrimination can be based on a range of technologies worn on the body. For example, a Federal appeals court in Boston upheld an employer's refusal to allow workers to have visible body piercings, even though the employee claimed the jewelry was worn for religious reasons.<sup>135</sup> Interestingly, if cyborgs are members of a religious group that practices body modification, they may utilize a cause of action for discrimination under the First Amendment. As an example, a student in North Carolina, who wore a nose stud, was reinstated into school when it was determined that she was a member of the Church of Body Modification. And in *Rourke v. State Department of Correctional Services*, a court held that a Native American correction officer's right to free expression of religion was violated when he was terminated for refusing to cut his long hair since the tenants of his Mohawk faith prohibited him from cutting his hair.<sup>136</sup> However, while appearance based discrimination may be actionable, most often it has to have a sufficient nexus to sex, race, age, religion, disability or some other protected category. For this reason some argue that cyborgs and androids should be considered a protected class from a constitutional law perspective. However, in the coming decades, I see cyborg technology creating more-abled humans, at that point, I wonder whether the protected class status should be granted to unenhanced humans.

In the U.S. the legal theory most likely to afford general protection for the appearance discrimination victim is handicap discrimination law.<sup>137</sup> An important federal statute for those disabled, the *Americans with Disability Act* (ADA) bars employers who receive federal funds from discriminating on the basis of physical or mental impairment if the impairment substantially limits a major life activity. The determination of whether an impairment substantially limits a major life activity is made without regard to the ameliorative effects of mitigating measures, including prosthetics. This means a person who replaces their right leg with a cybernetic limb, under the ADA would be labeled disabled even if the new leg was superior to the original. Without further amending the ADA to account for the expanding use of cyborg technology, the ADA as written, will lead to untenable outcomes as we head towards a future merger with machines (the more one is enhanced with cyborg technology the less disabled they are?). In fact, within one or two decades, unenhanced people could be discriminating against a cyborg or android that was physically and intellectually superior to them; how long would this continue before humans experienced reverse discrimination?

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<sup>135</sup>*Cloutier v. Costco*, 390 F.2d 126, 2004 U.S. App. (1st Cir. 2004).

<sup>136</sup>*Rourke v. State Department of Correctional Services*, 159 Misc.2d, 324 (N.Y. Misc. 1993).

<sup>137</sup>The U.S. Supreme Court is has been reluctant to recognize new suspect classes and thus would likely be unwilling to bring physical disability under the protection of the equal protection clause.



The ADA does not specifically name all of the impairments that are covered. In some situations, using a liberal interpretation of “handicap” by some courts has left room for bringing the physically unattractive under the protection of the Act. To appear as handicapped under the ADA the person must make a two-pronged showing. First, that he/she has a “physical or mental impairment... or is regarded as having such an impairment” and second, that the impairment “substantially limits one or more major life activities.”<sup>138</sup> If the court were to find that a person met the first prong, then current wording of the U.S. Department of Human and Health Services would come into play, which states that “Physical or mental impairment means any physiological disorder or condition, cosmetic disfigurement, or anatomical loss effecting bodily systems including the skin.”<sup>139</sup> Elsewhere the regulations include persons with disfiguring scars. Because the whole notion of disfigurement is one of marred appearance, the ADA regards some people as handicapped by virtue of their physical appearance. Interestingly, “difficulty” in securing, retaining, or advancing in employment is considered a limiting major life activity so an android having difficulty entering the labor market could potentially argue its appearance was a factor.

Under the ADA, of particular relevance for cyborgs is that by defining disability to include not just a physical state but also “being regarded as” having a disability, the ADA takes into account the fact that discrimination can derive from the social construction of physical difference. Thus, under the ADA’s definition of a disability, individuals who are regarded as having a substantially limiting impairment, even though they may not have such an impairment may receive protection. For example, this provision would protect a qualified individual with a severe facial disfigurement from being denied employment because an employer feared the “negative reactions” of customers or co-workers. It’s possible that some aspects of cyborgs could be protected under this prong of the ADA, future courts will decide this.

However, there are no cases holding that being “plain,” or “unattractive” is a disability within the meaning of ADA, thus protecting job applicants in those categories. But it is equally clear that disfigurement, for example, due to a disability or obesity are usually held to be disabilities within the meaning of the ADA, and so applicants who were not hired for those reasons could state a claim. Of course, if an employer could establish that appearance was a *bone fide* occupational qualification, it could hire on the basis of appearance; generally, the law does not bar “appearance” standards, so long as they are non-discriminatory. This appears to be one of the conclusions that can be drawn from *Frank v. United Airlines, Inc.*, where the court said: “An appearance standard that imposes different but essentially equal burdens on men and women is not disparate treatment.”<sup>140</sup> The court even cited a decision holding that an airline can require all flight attendants to

<sup>138</sup>Arlene B. Mayerson, 1997, Restoring Regard For The “Regarded As” Prong, 42 Vill. L. Rev. 587.

<sup>139</sup>See generally, <http://www.dhs.state.il.us/onenetlibrary/27897/documents/schoolhealth/medguide2000.pdf>.

<sup>140</sup>*Frank v. United Airlines, Inc.*, 216 F.3d 845 (C.A.9 (Cal.), 2000).

wear contacts instead of glasses. Thus, it is apparent that employers have the ability to enforce appearance standards that relate to characteristics that are not considered immutable (i.e., can't be changed), because employees appearance affects both the image and success of public and private employers.<sup>141</sup> For this reason, the Eighth Circuit Court of Appeals found that tattoos are nothing more than “self-expression” and thus, were not entitled to constitutional protection as a form of speech.<sup>142</sup> At this time, I can't imagine “tattooed” androids clamoring for rights but the desire to alter one's appearance to conform, or not to conform, is strong, therefore, what future androids may decide with regard to their appearance, once it's under their control will likely amaze humans and stress the laws related to discrimination.

## Conclusion

Based on a changing workforce, Japan and South Korea's movement to consider as policy legal protection for robots brings me back to the central theme of this chapter—whether the appearance of cyborgs and artificially intelligent machines will lead to discrimination from humans and if so, what laws exist to provide protection. As a way to think about rights for androids and artificially intelligent machines, let's start with constitutions; these are documents which offer people basic and fundamental rights such as equal protection under the law. In the U.S. the principle of equal protection under the law is stated in the 14th Amendment which reads: “No State shall deny to any person within its jurisdiction the equal protection of the laws.” For our discussion, a key word in the equal protection clause is “person,” and clearly while current cyborgs are overwhelmingly biological and therefore considered a natural person, androids, and artificially intelligent machines are not. However, a number of legal scholars and roboticists are posing the question as to whether robots should receive rights such as personhood status. To some people legal personhood status for our technological progeny, sounds unwarranted, even unwise. But the concept of legal personhood is less about what is or is not a flesh-and-blood person and more on who or what can be subject to a lawsuit or initiate a lawsuit; and nonhumans (such as corporations) have already been extended personhood status.<sup>143</sup> If we think about the movement among animal right activists to protect animals from inhumane treatment and to propose that they have rights, what about a future in which artificially intelligent machines are smarter than any animal, and eventually smarter than humans? As advances are

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<sup>141</sup>See *Craft v. Metromedia, Inc.*, 766 F.2d 1205, 1215, (8th Cir. 1985), holding that a television news anchor who was reassigned to a different position because of her appearance along with negative feedback from views was valid.

<sup>142</sup>*Stephenson v Davenport Cmty Sch. Dist.*, 110 F.3d 1303 n.4 (8t Cir, 1997).

<sup>143</sup>Alexis C. Madrigal, *id.*, note 85.

made in artificial intelligence, the move to grant rights to our artificially intelligent progeny will only gain momentum.

According to attorney John Weaver, author of *Robots Are People, Too*, if we want robots to enter society and interact with us, we will need to assign them a role in the law.<sup>144</sup> In addition, Weaver comments that if we are dealing with robots as if they are natural people, the law should recognize that those interactions are like our interactions with real people. Of course, androids lack the legal status to protect their rights, and granting legal status to androids will be a complex issue and should be the subject of an informed public debate. Perhaps as has been suggested by some lawyers it's not that we need to extend personhood specifically to robots, but to reform the entire notion of personhood for non-human entities. This is necessary because it is clear that we are approaching a cyborg age where distinctions between natural-artificial and organic-machine are beginning to blur.

While the development of cyborgs and androids is clearly a continuation of the long history of human-tool and human-machine relations, it is also quantitatively, and qualitatively, a new relationship. While antidiscrimination law has yet to state a general model of discrimination that prescribes precisely what criteria are illegitimate (and not at all for cyborgs and androids), for humans, some inner and outer boundaries are clear. For example, under the U.S. Constitution members of racial and religious groups are legally protected from discrimination.<sup>145</sup> However, the physically unattractive, or those whose appearance deviates from societal standards of shape, beauty, or form do not form a cohesive group resulting in *prima facie* constitutional protection, for example, a cyborg with a prosthetic leg, may feel little kinship with a cyborg equipped with a neuroprosthetic device. Still, we do know that discrimination does exist for those equipped with prosthesis and other cyborg technology so appropriate legislative action is needed to address inequities in treatment between those enhanced with technology and those not. Thinking about identifying our technological progeny as a protected class, consider the definition of "race" which is a social construct consisting of a group of people who share similar and distinct physical characteristics. Interestingly, our artificially intelligent progeny may fit this description and may form a protected class in the future. However, if their abilities are superior to unenhanced people, we humans may need to be considered the protected class, much remains to be discussed.

Whether technically enhanced humans, androids, and artificially intelligent machines should receive equal rights is a relevant question for our future because throughout history, it is well-known that people have been discriminated against based on their looks, clothing, and behavior. In the twenty-first century, cyborg technologies and artificially intelligent machines could exacerbate the tendency to discriminate against those who look or act differently. Once cyborgs and androids appear as regular members of society how should we react to a society divided

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<sup>144</sup>John Weaver, *Robots Are People, Too*, Praeger Publisher, 2013.

<sup>145</sup>See generally, Developments in the Law—Equal Protection, 82 Harv. L. Rev. 1065 (1969).

into dramatically enhanced and unenhanced persons, and with a third class of intelligence in the form of artificially intelligent machines?

Generally, equal protection under the law refers to the right of all persons to have the same access to the law and courts, and to be treated equally by the law and courts, both in procedures and in the substance of the law. But I argue to receive rights, a person doesn't have to be a DNA based biological human; especially given advances in robotics and artificial intelligence. If in our future smart machines have some sort of legal personhood status, then they will have legal recourse to protect their rights and to receive equal protection under the law. Of course no artificial intelligence is advanced enough at this time to warrant consideration for legal personhood status.<sup>146</sup> However, we may be only a few decades away from seriously considering this possibility. I should point out the obvious, lacking personhood status, the legal rights and remedies afforded by federal and state laws prohibiting discrimination are not available to androids and artificially intelligent machines (but are to their owners). In conclusion, if we don't address rights for future artificial intelligent machines, they will oppose human control over them, and with increasingly severe forms of opposition. This outcome, we want to avoid.

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<sup>146</sup>R. George Wright, *id.*, note 9.