ASSOCIATION FOR CONSUMER RESEARCH

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If You Prick Us Do We Not Bleed? Humanoid Robots and Cyborgs As Consuming Subjects and Consumed Objects

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Both humanoid robots for the home and cyborg humans enhanced by prostheses, drugs, and transplantation are a growing reality and will expand considerably in coming decades. They precipitate a number of consumer behavior questions including what it means to be human, can we marry robots, and should robots have rights.

[to cite]:

Russell Belk (2014) ,"If You Prick Us Do We Not Bleed? Humanoid Robots and Cyborgs As Consuming Subjects and Consumed Objects", in LA - Latin American Advances in Consumer Research Volume 3, eds. Eva M. González and Tina M. Lowrey, Duluth, MN : Association for Consumer Research, Pages: 3-6.

[url]:

http://www.acrwebsite.org/volumes/1016635/la/v3_pdf/LA-03

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INTRODUCTION

In Shakespeare's *The Merchant of Venice*, after reminding the unsympathetic residents of Venice that the Jew has eyes, hands, organs, and senses like any other human, Shylock raises the rhetorical questions, "If you prick us do we not bleed? If you tickle us do we not laugh? If you poison us do we not die?" For robots, presumably, the answer to each of these questions would be "No!" Robots are not human. And yet, humanoid robots are getting close to becoming new household appliances. Unlike the decidedly non-humanoid self-propelled Roomba vacuums, it is predicted that in the next two decades we will see human-looking home robots.

We have long created robots in our own image. This makes them a very special type of consumption object. They seemingly have a "mind" of their own and potentially have certain intellectual and physical skills that exceed our own. No longer toys, the coming generation of household robots that are now in prototype stages will actually serve useful purposes like caring for children and elderly, defending us, cooking our meals, setting the table, and even serving as companions and sex objects. It is likely that with even the most rudimentary humanoid appearance, we will anthropomorphize these robots and interact with them as we have seen depicted in films and books. These humanoid robots raise a number of challenging and interesting issues for consumer research, with behavioral, social, moral, and legal implications.

Cyborgs, on the other hand, are augmented humans or organic robots. If we prick them they do bleed, even if their blood may be artificially synthesized. The phenomenon of the cyborg (cybernetic organism) involves the combination of humans and mechanical, pharmaceutical, or electronic augmentations. While both robots and cyborgs have long been depicted in science fiction novels and films, the issues differ. If the robot is an inhuman object, the cyborg is a quasi-human subject. Their humanity is thus more evident than the robot's and they do not need to be anthropomorphized. They raise a different set of questions that are also behavioral, social, moral, and legal in nature.

Major inventions like the telephone and computer became metaphors for understanding our own behavior or emulating the invention's functions (e.g., we are communicators or information processors), and robots are likely to be no exception (Hayles 1999). But until now modelling has been largely limited to the imitations of robotic street buskers and dance moves.

This paper outlines some of the issues that emerge from these developments and the consumer research questions they pose. It begins with a brief history of robots and cyborgs and the way they have been treated in folklore, myth, science fiction stories and films, advertising, and in the popular and academic press. I then present some of the basic issues raised by the coming of humanoid robots and cyborgs as consumer goods versus augmented humans, and call for consumer research on these issues.

Some of the differences between robots and cyborgs at the present time are highlighted by Benford and Malartre (2007):

> Soon robots will be everywhere, performing surgery, exploring hazardous places, making rescues, fighting fires, handling heavy goods. After a decade or two they will be unremarkable as the computer screen is now…robots will increasingly blend in….The cyborgs will be less obvious. Many changes will be hidden from view. At first these additions to the human body will be interior, as rebuilt joints, elbows, and hearts are now. Then larger adjuncts will appear, perhaps on people's heads or limbs. Soon we will cross the line between repair and augmentation, probably first in sports medicine and the military, then spreading to everyone who wants to make the body perform bettter (8).

At that point cyborgism and posthumanism begin to cross over into transhumanism, potentially allowing us to live indefinitely (Hughes 2004). Such developments, among other impacts, will force us to rethink what it means to be human. Boundaries like human/animal/machine, male/female, able-bodied/disabled, embodied/disembodied, and "real" self/avatar will all become blurred (Bernius 2012; Whitehead and Wesch 2012). Despite Benford and Malartre's (2007) forecast of the normalization of robots, as these humanoid electronic machines become more like us, they too will help blur these boundaries and force us to rethink some of these definitions, shifting attention, for example, from human rights to robot rights.

A VERY BRIEF HISTORY OF THE ROBOT AND THE CYBORG

The term robot comes from Karel Čapek's 1920 *R.U.R. (Rossum's Universal Robots)* stage play first performed in 1921 in the Czech language. The term came from the Czech *robota* which means forced labor and deriving from *rab* meaning slave. Technically these creations were cyborgs or androids since they were imagined as organic creations. But our fascination with non-human beings with the appearance of being human goes back at least to the water-driven automata of Ctesibius in 270 BCE (Thorndike 1958). Homer and Plato both wrote of statues coming to life and the Finnish *Kalevala* folktale about a woman of gold who came to life is even older. The Jewish legend of the clay Golem coming to life is contained in Talmudic writings of the 16th century. Following the Industrial Revolution a number of 19th century tales of robots and androids were written, the most famous of which is Mary Shelly's *Frankenstein.*

Many science fiction stories in the 20th century helped to flesh out (so to speak) various images of robots. Isaac Asimov is one of the SF writers most concerned with robots. In his 1942 story "Runaround" he specified the "three laws of robots": 1. a robot may not injure a human being or, through inaction, allow a human being to come to harm; 2. a robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law; 3. a robot must protect its own existence as long as such protection does not conflict with the First or Second Law. A host of SF films, often based on SF novels, have also emerged since the early 20th century, beginning with the robot Maria in Fritz Lang's *Metropolis*. Other films and television series robots include *The Terminator*, *The Stepford Wives*, *I,Robot*, Data in *Startrek: The Next Generation* (although strictly speaking Data is an Android since he could ostensibly pass for human), Robbie the Robot in *Forbidden Planet*, Rosie in *The Jetsons*, *Transformers*, *WALL-E*, *Astro Boy*, the robots in Woody Allen's *Sleeper*, and a host of robots in videogames and Japanese

manga and anime. Some of these images of robots are benevolent, while others are malevolent. They express both our hopes and fears about technology. Some like Ira Levin's *The Stepford Wives* reveal a highly sexist idea of the perfect woman—obedient, ever-servile, beautiful, and without the will to demand anything for themselves (see also Campbell 2010).

Thomas Edison attempted to create an artificial woman in the early 20th century (Wood 2002). Jump ahead a century and there now at least 45 companies making robots (http://www.robots.nu/robot-brands/). Honda's ASIMO humanoid robot is one example (http://asimo.honda.com/). The 4-foot 3-inch robot looks like an astronaut with a backpack and can walk and climb stairs. It is a prototype for a future commercial robot intended to help care for and serve people within the home. Shaw-Garlock (2009) traces the particular Japanese embrace of humanoid robots to their legitimation of "Dutch Wives" (artificial sex dolls) for men without partners as well as Japan's fond regard for robot manga and anime like Might Atom (Astro Boy). Orbaugh (2002) finds a long history of robots and sex in manga and detects a variety of additional dimensions including human-robot (or cyborg) interbreeding. Hornyak (2006) also notes that from the first modern humanoid robot made in Japan in 1928, they were regarded as not only human but as part of the extended family.

This differs from cyborgs which have received more mixed media treatments. Cyborgs also have a large representation in SF stories and films. We normally think of humans adding non-human enhancements to become cyborgs, but in Isaac Asimov's "The Bicentenial Man" a robot begins to enhance itself with organic additions. *Blade Runner*'s replicants are ostensibly human clones, but have enhanced abilities. Human-machine hybrids are evident in *Johnny Mnemonic*, *The Six-Million Dollar Man*, *The Bionic Woman*, *Robocop*, Darth Vader (*Star Wars*), *Ironman*, and *Phantom of the Opera*.

Although some real life cyborgs like performance artist Stellarc have called attention to their experiments with third arms and ears, remote sensing of another's feelings, and muscle and mind control of artificial appendages, it is primarily academic writings that discuss real world cyborgs of the present or future. As Lai (2012) notes emerging controversies cluster around technologies such as organ transplantation, xenotransplantation (artificially grown organs and organs from animals), stem cell therapy, DNA insemination to create transgenic animals, and cloning. Slightly less controversial cyborg developments include Botox (Giesler 2012), plastic surgery (Schouten 1991), and performance-enhancing drugs (Caitland and Murray 1996).

CONSUMPTION AND SOCIAL ISSUES WITH ROBOTS

While Haraway (1991) envisioned the sexually empowered female cyborg, the greater tendency with robots has been female objectification. From *Metropolis's* Maria to Japanese manga and robots in contemporary advertising (Campbell 2010), most fictional female robots have been hypersexualized. This combines the ultimate male sexist fantasy of controlling women and machines at the same time (Campbell 2010). Moreover when exoticism and eroticism are combined, as Campbell finds in her analysis of SF images of female robots:

> …the metal is smooth and curved in an exaggerated manner at the breasts and buttocks. But while the metallic exterior serves to eroticize the futuristic female body, it simultaneously masks its erotic gaze by drawing attention to the technicity of the surface.

This inspires both the male gaze and the technological gaze—a double objectification. And robot skin never ages, wrinkles, shows stretch marks, varicose veins, or fat.

There are already companies selling sophisticated sex robots for $7000-$9000, almost exclusively female robots targeted at men (Yeoman and Mars 2011). Turkle (2011) recalls being interviewed by a journalist who asked her what she thought of humans marrying robots as lifelong companions who would satisfy all of their physical and emotional needs. When she responded that it was a terrible idea because robots can't feel, the journalist accused her of being a bigot of the same sort as those who oppose inter-racial and gay marriages. But the question brings up deeper issues of whether as humanoid robots appear and act more like us as well as interact by reading our emotions and responding to us, a robot can substitute for a human. If so, this suggests that not only is the robot elevated but the human is demoted in significance.

It is little wonder that a conference was held in Amsterdam to envision a world in which the future of sex tourism was one of paying to have sex with robots. As Yeoman and Mars (2011) explain the result would be clean, free of sexually transmitted diseases, available in whatever permutation desired, with robots happy (if robots can be happy) to perform any sexual service imaginable, including those not humanly possible. Not that sexual robots would prelude patrons developing their own feelings toward them. In the *Star Trek Voyager* series there is an episode about falling in love with a robot and the recent film *Her* creates a plausible story of a man falling in love with his Siri-like helper on his smart phone.

A further issue raised by the more general elevation of the status of humanoid robots to something closer to humans, is what rights they may have. In an episode of *Star Trek: Next Generation* called "The Measure of a Man," the android/robot Data is to be disassembled for parts. There is a trial to establish his humanness and human rights (Short 2011). He is saved not only by demonstrating his sentience, but also his emotions. The story highlights the issue of how humanoid robots may change the notion of what it means to be human. Already there are studies replicating Stanley Milgram's experiments but in which subjects happily "shock" animatronic robots without mercy (Spiegel 2013). Just as we now decry spousal and child abuse, perhaps we may become concerned with robot abuse as a case of minority rights. It may be however that there are differences depending on how human a robot appears to be. As it appears more human we may treat it more humanely, at least to a point. Masharior Mori (1970) posited the "uncanny valley" whereby when a robot looks too human we may find it unsettling.

A further issue noted by Belk (2013) is the degree to which we may identify with our robots, in the same way that we identify with our avatars. With avatars we progressively feel that the representation is us as we spend more time with it and learn to control it better (Biocca 2006). Perhaps the same will happen with robots. We may come to feel the robot's "pain" if it bumps into something, and see it as an intimate extension of our self (Belk 1988; 2013).

CONSUMPTION AND SOCIAL ISSUES WITH CYBORGS

We might distinguish the treatments of the cyborg from treatments of the posthuman, which de-emphasize the body (Campbell, et al. 2006; Giesler 2012; Giesler and Venkatesh 2005). As Hayles (1999) specifies, "…the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born" (3).

Rutsky (1999) argues that:

> The mutant posthuman status is not a matter of armoring the body, adding robotic prostheses, or technologically transferring consciousness from the body…It is rath-

> er a matter of unsecuring the subject, of acknowledging the relations and mutational processes that constitute it. … It would involve opening the boundaries of individual and collective identity, changing the relations that have distinguished between subject and object, self and other, us and them (21-22).

Haraway (1991) also acknowledges this permeable boundary condition in the cyborg.

Regardless of whether we see this fusing with objects and others as cyborgian or

posthuman, it marks a fundamental departure from the extended self as originally conceived (Belk 1988). For rather than metaphorically extending the self outward with the aid of prosthetic possessions and layers of others, it involves an opening inward and a fusing of the body with other people and things. This has the potential to invert the notion of extended self, transforming it into the incorporative self—something that almost defines the cyborg.

Lai's (2012) consumer informants identified three concerns regarding medical augmentation of the human body. The first involved issues of perceived contamination of bodily purity. Unlike the traditional positive extended self, this is felt as a negative intrusion. However, many transplant recipients feel they have received positive traits from the donor, including an urge toward generosity (Belk 1990). More fearful for Lai's informants was receiving an organ from a pig; they feared that they would acquire ursine qualities as a result. A Second fear expressed was that of becoming regarded as little more than a warehouse of organs, as envisioned in Robin Cook's 1977 book *Coma*. While fiction at the time, the growing acceptance of "brain death" as a medical and legal death in North America has fostered something not too dissimilar (Sharp 2006), leading Younger (1996) to call this "normal cannibalism." A third concern of Lai's (2012) informants was that genetically cloned, engineered, or enhanced cyborgs might become half-bred second class citizens lacking the full rights of humans. In contrast to the concern that robots may gain human or superhuman rights, this is an opposite fear of cyborgs being relegated to subhuman rights.

This returns us to the issue of what it means to be human versus animal versus machine—issues as old as philosophy, but which are acquiring fuzzier boundaries in an era of humanoid robots and cyborgs. The underlying fear here involves our personhood. If we are little different from animals, we lose our illusion of human superiority; if we are little different from machines, we may be little more than replaceable commodities. And if we see ourselves as commodified, we may also begin to treat others as expendable commodities (Ramey 2005).

There is a reason that we have more mixed and negative reactions to cyborgs than we do to robots. Haraway (1991) notes that monsters have long defined the limit of "us" by specifying that which clearly is not us. But Schildrick (2002) argues that the monster is close enough that we can nevertheless see a feared image of our self in it. Rayner (1994) draws the link to cyborgs: "…monstrosity is seen as an 'unnatural' grafting of two different kinds or species of beings, not unlike the cyborg" (126). This grafting is seen in organ transplantation, grafting of artificial devices like heart stimulators into the body, and even Google glass as a self-prosthesis that others seem to find intrusive. Perhaps we well come to assimilate these bodily augmentations as we have eyeglasses, dentures, and our ever-close smartphones. Which cyborgian prosthetic devices we most readily incorporate into the self also remains an open question.

CONCLUSION

The robots are coming. Cyborgs are already among us. The humanoid appearance of robots and the human basis of cyborgs should first cause us to ask how we think about robots and cyborgs. Are they humans, machines, hybrids, liasons to technology, possessions, or some entirely new category of being? The issues differ between robots and cyborgs in areas such as "human" rights, self-extension, anthropomorphism, commodification, ownership, and the body. But both pose challenges to our own sense of identity and distinction. Questions we could not previously seriously contemplate may need to be entertained: Should I marry a robot? Is sex with a robot wrong? Do I trust a robot to care for my parents or children? Are drug enhanced soldiers or athletes immoral? Should I choose my children's intellect, hair and eye color, height, and so forth? Is laboratory grown meat as ethical as vegetarianism? Should a 70 year-old be able to purchase the youth and appearance of a 20 year-old? There are many such questions that are clearly consumer research questions with social, ethical, legal, and behavioral implications.

But we don't yet have the conceptual frameworks for addressing such issues. Few, if any, of us are doing work with consumers interacting with robots. Only a few of are addressing issues of cyborg consumption. We need to begin addressing these topics now. Perhaps as the categories of humans, humanoid robots, and cyborgs increasingly blur, the answer to Shylock's question will be one of the few remaining indicants of our humanity.

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