spectra

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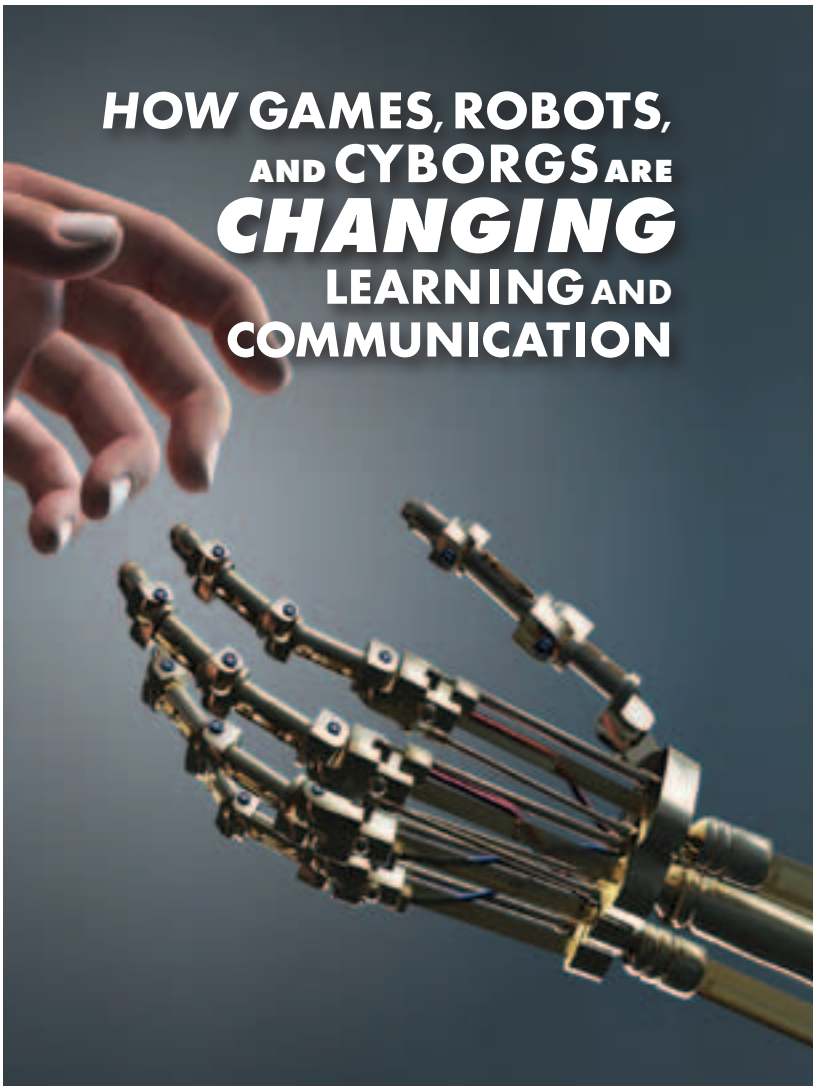

HOW GAMES, ROBOTS, AND CYBORGS ARE CHANGING LEARNING AND COMMUNICATION

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Spectra, the magazine of the National Communication Association (NCA), features articles on topics that are relevant to Communication scholars, teachers, and practitioners. *Spectra* is one means through which NCA works toward accomplishing its mission of advancing Communication as the discipline that studies all forms, modes, media, and consequences of communication through humanistic, social scientific, and aesthetic inquiry.

NCA serves its members by enabling and supporting their professional interests. Dedicated to fostering and promoting free and ethical communication, NCA promotes the widespread appreciation of the importance of communication in public and private life, the application of competent communication to improve the quality of human life and relationships, and the use of knowledge about communication to solve human problems.

All NCA members receive a *Spectra* subscription. The magazine also is available via individual print subscription for non-members at the annual cost of $50; to subscribe, send an email to memberservice@natcom.org.

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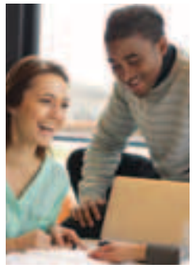

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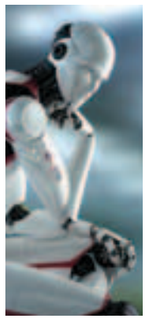

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spectra? DID YOU KNOW

NCA has recently established a Games Studies Division, focused on the scholarly examination of all aspects of gaming in relation to contemporary communication and culture.

THE *Political Economy* OF *Higher Education*—PART 2

By Carole Blair, Ph.D.

My first NCA presidential column in *Spectra* (March 2015) addressed problems faced by most institutions of higher education, focusing on conditions that confront all faculty because of the continuing "replacement" of tenured or tenure-track faculty with contingent labor. This "casualization" of the work force, as it's often called, is based on the assumption that faculty do or should serve educational institutions only as the institutional need arises for them to teach classes. The casualization phenomenon is hardly new, but it has expanded to such a degree that nearly two-thirds of faculty at U.S. colleges and universities are now contingent *(AFT Higher Education Data Center.* http://highereddata.aft.org/instit/national/instr_staff.cfm). As I suggested last time, this constitutes a serious problem for contingent faculty to be sure, but also to all faculty and to our institutions of higher learning. Observing these conditions, a recent report by the Delphi Project on the Changing Faculty and Student Success (see http://www.thechangingfaculty.org/) notes that tenure-track faculty have increasing and "unsustainable" levels of responsibility as a result of their decreasing numbers. More alarming still, the report concludes that it "will soon be the case that our institutions are no longer able to satisfy their complex missions, which extend well beyond teaching alone to encompass the demands of policy makers and the public."

In truth, the unmet demands are likely to reach far beyond the political realm—to corporate and industrial concerns that depend increasingly upon knowledge workers, as well as to our current and future students—the cadre of knowledge workers who are, according to the Delphi report's analysis of research in the area, already affected negatively by the casualization of the academic labor force. The report notes that the increasing reliance on contingent faculty "has a negative effect on student retention rates, successful transfers from two- to four-year institutions, student grade point averages, and graduation or completion rates." The first-level effects are on students, in other words, and these effects translate into the quality of their lives and livelihoods, and also have an impact on their contributions to the public good and to the economy.

That is why NCA's leadership has committed to a multi-year initiative to address the "political economy of higher education," which certainly encompasses the working conditions of faculty, but also takes account of the massive and intricate web of interrelated stakeholders in the higher education "industry." Our focus on this web also acknowledges that this is not merely a matter of economics, but one of a political economy. The casualization of academic labor was well underway before the post-2008 economic woes in the United States. Communication departments were among the early disciplinary entrants into the contingent labor market because of the growing demands of a democratized system of higher education with perpetually increasing numbers of students, and also because of academic requirements stipulated by states, accrediting agencies, and institutions. But the problem was exacerbated by the economic downturn and by the spectacular expansion of "for profit" universities, which employ almost exclusively contingent faculty members.

Complicating these conditions is the fact that even while shrinking in size, most academic faculties have been required to take on ever more tasks—the "unfunded mandates" we all talk about in the hallways. Demands for assessment have reached into both undergraduate and doctoral programs. Most of those demands cannot be met except by tenure-track and tenured faculty members, who are often also now working with diminished staff support. Meanwhile, institutions rely more and more upon outside assessments not just of their academic programs, but also of faculty who are eligible for promotion and tenure. Many institutions also demand excessive numbers of such external faculty assessments (e.g., 10 or more outside tenure letters), and at increasing frequency (e.g., requiring outside assessment for reappointment or merit cases). And that, of course, means less time to devote to research and teaching responsibilities.

These are simply examples of the problems many faculty face. The NCA initiative, which will call for cooperation with NCA's sister academic associations, is daunting because of the number of stakeholders and their interconnections, and also because the network of interconnections is so large and far-reaching. But at stake is the future of U.S. higher education. The entire public realm, not just those connected directly to colleges and universities, will be affected negatively if the current conditions are allowed to prevail or worsen. And yet, everyone stands to benefit if institutions of higher learning can be preserved and supported in ways that are necessary to the missions they serve and the well-being of those who are their center—the academic faculty. ■

NCA's leadership has committed to a multi-year initiative to address the "political economy of higher education," which certainly encompasses the working conditions of faculty, but also takes account of the massive and intricate web of interrelated stakeholders in the higher education "industry."

Spotlight

DATA ABOUT THE DISCIPLINE

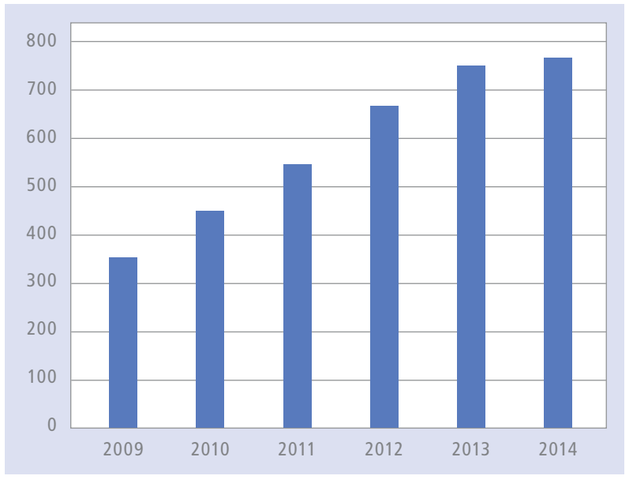
Employment Outlook Positive for Communication Faculty and Administrators

The National Communication Association (NCA) annually collects data about academic hiring in Communication from advertisements in the NCA Career Center, the CRTNET listserv, and *Spectra* magazine. These outlets serve as centralized repositories for advertising academic positions in Communication, and are used broadly by colleges and universities seeking Communication faculty and administrators.

NCA's most recent report using these data can be found at www.natcom.org/data. The report's primary finding is that the current job market for academic positions in Communication continues to increase in strength. The total number of advertisements for academic positions in Communication has more than doubled from 2009 to 2014. There were 351 jobs advertised in 2009, followed by a steady increase over time to 752 in 2014.

The report also details the rank and types of positions being advertised. Sixty-six percent of the 2014 job postings sought individuals for tenured or tenure-track positions, with 44 percent of the postings seeking an assistant professor. Non tenure-track positions (Instructor and Visiting/Temporary) accounted for another 27 percent of the job postings in 2014. Seven percent of the postings sought individuals for administrative positions, with 35 percent of administrative position postings seeking a department chair.

Number of Advertisements for Academic Positions in Communication



IN OUR JOURNALS

Richard Dillio, "A Critical Miss: Video Games, Violence, and Ineffective Legislation," *First Amendment Studies* 48 (2014): 110-130.

In examining four major video-game violence cases, Dillio studies court responses to the social science research presented by legislators in favor of restricting access to games. He concludes that the use of social science research in this context is unpersuasive and generally a failed tactic used by legislators in their efforts to restrict video game access. Dillio posits that moral panic may be partially responsible for the push to limit access. He explains that those concerned about violent video games are influenced by vague research that promotes the attitude that violent video games lead to aggression, particularly among youths. Thus, legislators and other concerned citizens assert that a strong correlation exists between violent video game play and aggression, with little sound scientific evidence to support restricting game access.

Cerise L. Glenn, "'Activism or Slacktivism?' Digital Media and Organizing for Social Change," *Communication Teacher* 29 (2015): 81-85.

Glenn's essay outlines the benefits of a class exercise focused on teaching students about the role of digital media in influencing social change. In this exercise, students analyze notions of activism and "slacktivism," a term created from the combination of slacker and activism that is used in both scholarly articles and popular media. This three-part activity introduces students to critical theory and activism, after which they watch the *Kony 2012* video, which promoted the charity's "Stop Kony" movement to make African cult and militia leader, indicted war criminal, and International Criminal Court fugitive Joseph Kony globally known in order to have him arrested by the end of 2012. After watching the film, students apply their knowledge of theory and activism to analyze it. This exercise enhances student understanding of critical theory, activism, digital media, and how digital media can affect efforts to organize change.

Matthew Grizzard, Rob Tamborini, John L. Sherry, Rene Weber, Sujay Prabhu, Lindsay Hahn, and Patrick Idzik, "The Thrill Is Gone, but You Might Not Know: Habituation and Generalization of Biophysical and Self-Reported Arousal Responses to Video Games," *Communication Monographs* 82 (2014) 64-87.

This article discusses the outcomes of two studies aimed at examining the relationship between habituation and generalization and biophysical and reported arousal to video games. The authors conducted both a single-exposure study and a repeated exposures study. Findings show that repeated video game play leads to habituation, as reported in both biophysical and self-reported response. This indicates that video games have a stronger effect during initial exposure, before players habituate to game play. However, players may be unaware of the habituation response and seek arousal from other sources, a finding that is particularly important as game developers continue to generate more visceral content to attract and maintain players. This study has implications for the study of aggression as well, as habituation potentially reduces one motivating factor for aggression in players.

PUBLIC PRESENCE

NCA Participates in National Higher Education Meetings and Advocacy Days

Several NCA members and staff recently attended two conferences that focused on advocating for funding and public support of the humanities and social sciences.

More than 100 people attended the Consortium of Social Science Associations (COSSA) Annual Meeting and Advocacy Day, held March 9-10 in Washington, DC. During a day of discussion on federal issues that are impacting social and behavioral science research, attendees heard from National Science Foundation Director France Córdova and Acting Director for the National Institutes of Health Office of Behavioral and Social Sciences Research William (Bill) Riley. Both speakers described the research and activities their agencies are funding.

On the second day of the conference, attendees visited Capitol Hill for Social and Behavioral Science Advocacy Day. They discussed the value and importance of social and behavioral science research with their congressional delegations.

The week after the COSSA meeting, we headed to the National Humanities Alliance (NHA) Annual Meeting and Advocacy Day. Focused on the importance of public engagement at the local level as an essential tool for advocacy, the conference featured NHA's work in promoting how university partnerships with local institutions, including state humanities councils, museums, libraries, and others, are demonstrating the value of the humanities. *Inside Higher Ed* Founding Editor Scott Jaschik delivered a keynote address that highlighted the challenges confronting humanities disciplines as they seek to preserve funding for research and to enhance their legitimacy and viability on college campuses and in society at large. Dr. Bro Adams, the new Chairman of the National Endowment for the Humanities (NEH), also served as a featured speaker at the NHA meeting, discussing the history of the NEH and its important contributions to society over time.

NHA attendees spent the second day of the conference on Capitol Hill, communicating the value and place of the humanities and asking their congressional representatives to preserve funding for critical humanities programs.

(Above) National Humanities Alliance (NHA) Executive Director Stephen Kidd addresses attendees at the NHA Annual Meeting and Advocacy Day.

(Right) National Science Foundation Director France Córdova delivers an address at the Consortium of Social Science Associations Annual Meeting and Advocacy Day.

HOW GAMES, ROBOTS, AND CYBORGS ARE CHANGING LEARNING AND COMMUNICATION

When my children were in high school, I used to marvel at my older daughter's complete absorption with technology. Sitting on the living room couch with her laptop, she would watch the evening news with one eye, while simultaneously doing her homework, playing the then-popular Collapse!® video game, Instant Messaging with her many friends, browsing a multitude of Facebook pages, updating her Xanga page, and researching the products she saw on television commercials. I quickly learned that she could be fairly effective at all of this activity, but I worried about her communication skills. Her attention was so fractured and enmeshed in the digital world that I assumed she would never develop the ability to speak in complete sentences, write coherently, or connect deeply with others. I was wrong.

What I should have been worried about was my own ability to keep pace with technology. Influenced as it has been by the digital revolution, my daughter's mode of learning and communication is today's norm. I should have paid more attention to the science fiction movies and books I enjoyed in my childhood—they heralded a world of interaction with machines and digital entertainment and learning devices that in many ways underestimated the impact sophisticated technologies would have on life in the 21st century. Communication scholars have, of course, been examining these issues for years, and their work is explored in this special issue of *Spectra*.

In her opening article, Jaime Banks writes that in the last year alone, "digital games scholarship has been published in more than half of NCA's journals." There are myriad connections between games and gaming and the interests of Communication scholars, Banks says, writing about the impact games are having on identity, social interaction, and contemporary culture. For example, Banks notes, avatars—digital representations of human gamers—"can play important roles in identity construction." She concludes that there are "remarkably rich opportunities for game studies collaborations among Communication scholars with different interests, from identities and social interaction to culture and serious applications."

Indeed, gaming theory already has entered the teaching and learning sphere in full force. Barry Fishman and Caitlin Holman describe their work in bringing what they call "gameful design" into the classroom. Unlike recent applications of games in the classroom, gameful design is aimed at "increasing *engagement*, not trying to make learning fun." "In a gameful classroom," they write, "students are offered multiple pathways to success, and *they* choose which pathway they will follow."

With machines having become ubiquitous in every facet of life, scholars have also been studying how we are interacting with and learning to trust machines to provide us with accurate information, to work alongside us in the workplace, and even to help teach our children. In their innovative work with developing the hitchhiking robot, hitchBOT, Frauke Zeller and David Harris Smith take the next logical step in these studies by helping to answer the question, "Can humans trust robots?" They conclude that if designers create sufficiently attractive and social robots, people will both trust them and engage with them in ways that are similar to how we engage with one another.

Thomas Frentz, who calls himself "one of the last living Luddites on the planet," examines the evolution of cyborgs as depicted in films, and relates this evolution to humans' increasing dependency on and comfort with technology. Frentz raises the scary proposition first predicted by Ray Kurzweil—that there may come a time "when humans will have evolved into post-humans, meaning that all biological parts and functions will have been superseded by… technological replacements." Should any form of post-humanity come to pass, Frentz warns, the discipline of Communication will be "radically other than what it is right now, or than what it has ever been in the past."

Already, my children's cell phones seem parts of not only their hands, but their brains as well, serving their information, communication, and relational needs with startling regularity. I would not like to think that my future grandchildren will become actual cyborgs or, banish the thought, even post-humans. But surely the fascinating trends noted by our authors will continue to evolve. We (and our avatars) hope you enjoy this issue of *Spectra*. ■

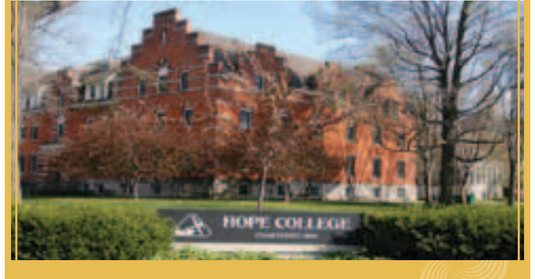
—Wendy Fernando
NCA Director of External Affairs and Publications

PLAN *NOW* TO ATTEND

THE NCA FACULTY DEVELOPMENT INSTITUTE (The "Hope" Conference)

July 19-25, 2015
Hope College, Holland, Michigan

The NCA Institute for Faculty Development, also known as the Hope Conference, helps undergraduate Communication faculty stay current with theory and research as they guide curricular development in a variety of areas. The 2015 conference will be held at Hope College in Holland, Michigan. Speakers/teachers will include: Carole Blair (Rhetoric), Tamara Afifi (Interpersonal Communication), Srivi Ramasubramanian (Global Media), Andrew Wolvin (Listening), Stan Deetz (Organizational Communication), and Barry Brummett (Popular Culture). Barbara Biesecker will be the 2015 Scholar-in-Residence.



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DIGITAL GAMES
AS COMMUNICATION AND CULTURE

By Jaime Banks, Ph.D.

For more than half of the people in the United States, digital games—from casual and mobile games such as *Candy Crush*, to massive online multiplayer environments including *World of Warcraft*—are a part of contemporary life.

Since Ralph Baer (a German-born television engineer lauded as the father of video games) first played with the idea that the television could be used for something other than broadcast viewing, video games and culture have become deeply intertwined. Just as metaphors of analog games and play have made their way into everyday language—"luck of the draw," "that's a home run," "throw in the towel"—digital game terminology has made its way (however leisurely) into popular vernacular. You may have heard someone call a rookie a "noob," a difficult situation made easier has been "nerfed," and an increase in skill or ability is a "power-up." For more than half of the people in the United States, digital games—from casual and mobile games such as *Candy Crush*, to massive online multiplayer environments including *World of Warcraft*—are a part of contemporary life.

Despite the intimate links between pop culture and digital games, the latter are often seen as existing somehow outside the status quo. The Entertainment Software Association's 2014 *Annual Report*, however, reveals that gaming is relatively popular, and that gamers have diversified. Once thought of as a basement-dwelling teenager, the "average" gamer has, in a sense, grown up with the medium. Among the 59 percent of Americans who play digital games, the average age among gamers is 31 years, and 48 percent are women. Far from a universally solitary endeavor, games provide opportunities for extensive social interaction. Sixty-two percent of gamers play in person or online with other gamers. Families often game together, and more than 90 percent of parents are actively involved with their children's gaming. 'Casual' and social games are now the most popular game genre, paralleling advances in mobile communication technologies.

Huge crowds of gamers gathering at GamesCom 2011, the most important European video games Expo in Cologne, Germany.

Gaming environments are also known to foster romantic relationships, especially long-distance romances, as many games present opportunities for partners to craft digital bodies and use them to (digitally) physically interact.

With these trends as backdrop, Communication scholars are well-poised to advance theoretical and practical understandings of games and gamers. Often, Communication scholars meaningfully examine games as rhetorical texts or in terms of media effects—for example, last year's NCA Annual Convention featured significant work on game-related historic narratives, masculinity, entertainment value, physical exercise, aggression, guilt, and antisocial behaviors. Moreover, because our field synthesizes a range of sub-disciplines, we may examine digital games through many different lenses: digital games are artifacts, narratives, environments, relationships, embodiment, challenge systems, art, logics, technologies, tools, teachers, industry, practice, and culture. NCA members, in particular, are contributing to these advances; in the last year, digital games scholarship has been published in more than half of NCA's journals, and the newly formed NCA Game Studies Division has as part of its mission the synthesis of these varied perspectives. Although many members may have never picked up a game controller, there are remarkably rich opportunities for game studies collaborations among Communication scholars with different interests, from identities and social interaction to culture and serious applications.

GAMES AS IDENTITIES

Avatars—digital representations of human users—are understood to be at the center of most gaming experiences. In addition to their technical functions of allowing the player to interact with the game environment, avatars are effectively a second body—digital rather than physical—so they can play important roles in identity construction. Users can craft a body in order to explore possible selves, work through conflicting identities, embody identities they can't safely perform in everyday life, and even escape the mundane by assuming fantastical forms. Consider, for example, one of my own research participants, who realized his ideal embodied gender in *World of Warcraft* by combining the hulking body of a male Tauren with the healing role, which he saw as appropriately feminine.

The potentials for identity work can also be problematic, according to some scholars. As Lisa Nakamura notes, avatars allow players to "tour" identities by temporarily appropriating them, performing established stereotypes, and consequently having an inauthentic experience and reinforcing their own biases. In a recent study of avatar gender-switching, for example, Rosa Mikeal Martey and colleagues found that men playing female avatars may be drawing on gendered heuristics (highly expressive chat and movement) to strategically 'play' femaleness.

One explanation for such stereotype performance is a phenomenon known as the "Proteus Effect," in which avatars' visual cues prime players to behave consistently with those cues (to prosocial or antisocial ends). For example, people using more normatively attractive avatars more intimately self-disclosed than those with less attractive avatars, people using sexualized avatars had greater self-objectification and rape-myth acceptance, and people using an avatar dressed as a member of the Ku Klux Klan behaved more aggressively (as found by Nick Yee, Jesse Fox, Jorge Peña and colleagues, respectively). Importantly, in many games, people typically are not assigned an avatar. Instead, they choose or create a character that reflects their own interests or gameplay motivations, in the same way that one might select an outfit to wear to a party or choose a like-minded friend for movie-going. My work with Nicholas Bowman suggests that players variably engage avatars along a continuum of non-social relations (the avatar is an object) to para-social relations (the avatar is me) to fully social relations (it's my partner or friend), and the nature of this relation has important implications for how identity work is conducted during and after play.

Games have always been social. The earliest video games were necessarily social, played competitively with two controllers.

GAMES AS SOCIAL INTERACTION

Although it may be tempting to assume that the evolution of social media-based "casual" games (e.g., *Farmville, Words with Friends*) and immersive multiplayer games (e.g., *World of Warcraft, League of Legends*) brought social interaction to video games, it's truer to say that games have *always* been social. The earliest video games were necessarily social, played competitively with two controllers, as early gaming devices didn't have the computing power to support a player-versus-game dynamic. As Constance Steinkuehler notes, digital games are spaces of action and interaction and offer traces of individual and collective activity, presenting unique opportunities to explore how the self and society are communicatively co-constructed.

Contrary to popular concern that gamers are socially inept, Rachel Kowert argues that even socially competent people may move to online gaming spaces to fulfill interaction needs such as sense of closeness, belonging, and security. This movement to shared digital spaces can lead to deeply diversified social circles by fostering strong friendships with people one wouldn't otherwise meet, says Nicholas Taylor. In tandem, gamers do not subjectively distinguish between online and offline social interactions—both social contexts are experienced as real and are deeply intertwined, argues Florence Chee and colleagues. Such findings call into question the notion that game-facilitated interactions are "virtual," less "real," or materially displacing offline social interactions. Gaming environments are also known to foster romantic relationships, especially long-distance romances, as many games present opportunities for partners to craft digital bodies and use them to (digitally) physically interact.

Despite these potentials for prosocial interactions, there may also be a dark side to gaming interactions. Mia Consalvo notes that many social media-based games shift friendships into resource relationships, promoting online interactivity but not necessarily promoting deep social interactions. When games are played with family members, these relationship-shifts may highlight issues of trust and obligation. Further, anonymous or pseudonymous gaming environments may foster "griefing"—disruptive, anti-normative, and sometimes aggressive behaviors—that can make gaming experiences unpleasant or impossible, and may have lingering effects on the victim.

It's also important to note that gamers can be viewed as having "social" interactions with games and game content as well. In the webcast that revealed the Xbox One gaming console, using the device was described as a "deep companion experience," wherein you "speak and your troops follow your command" such that "you and your television will have a relationship." Game developers are writing interactive stories designed to provoke visceral emotional reactions and moral dilemmas, and even to inject characters into our daily lives to help us learn better, work more efficiently, and live healthier lifestyles. Indeed, the notion of the "media equation" formalized by Byron Reeves and Clifford Nass argues that people treat computing devices and electronic media as we would treat other humans, applying the same social rules and expectations to our interactions with them, and behaving reciprocally; when computers are polite and helpful to us, we behave politely and helpfully in return.

Crossovers and other modes of transmedia storytelling may serve to culturally "normalize" gaming by presenting its themes and characters to non-gaming audiences.

GAMES AS CULTURE

In addition to the intrapersonal and interpersonal dimensions of gameplay, Communication scholars are also examining how digital games play a role in contemporary culture. We find game content and emergent experiences incorporated into memes, mash-ups, and remixes. For example, town guards in *Skyrim* speak an iconic line, "I used to be an adventurer like you. Then I took an arrow to the knee" remixed with other memes and incorporated into political and social commentary memes. One digital denizen, for example, superimposed these words onto an image of the *Skyrim* guard: "I used to trust political elections until they took a corporation in the knee." These types of media cross-overs also find their way to other screens as cable television outlets (e.g., Cartoon Network, Comedy Central) maintain online and mobile game variations of popular programs. Cross-over film productions such as *Street Fighter* and *Super Mario Bros.* have had only limited success, while films based more loosely on video game themes have fared far better (e.g., *Wreck-It Ralph, Gamer*). We see a return to game-derived movies in the coming year, however, with the highly anticipated adaptations *Warcraft*, *Assassin's Creed*, and *Angry Birds*.

In some ways, these crossovers and other modes of transmedia storytelling may serve to culturally "normalize" gaming by presenting its themes and characters to non-gaming audiences. Historically, mainstream media coverage of video games has vilified these interactive media as a dysfunction of social, moral, and political norms, but more recent coverage has highlighted games' functional and artistic merits, according to works by Dmitri Williams and Brian McKernan.

John C. Reilly, title character of the movie, *Wreck-It Ralph*, who may be helping to culturally "normalize" gaming.

Although digital games are broadly understood as entertainment media and spaces for socialization, some Communication scholars are examining gaming applications for education, health care, defense, training, politics, and social change.

Most central to still-lingering moral panic over video games is the issue of aggression and violence effects. While some scholars in non-Communication disciplines (e.g., Brad Bushman, Craig Anderson) consistently find evidence of increased violent tendencies as a result of violent gameplay, other scholars (e.g., Christopher J. Ferguson) find there is no scientifically valid link between violent content and violent behavior. The tension highlights the opportunity for Communication scholars to examine these issues through alternate lenses and contribute to a better understanding of interactive media effects. Indeed, many newer games have moved toward rich, interactive representations of arguably violent current events to coax players into moral and social considerations, interactions that may best be examined through Communication lenses. *Spec Ops: The Line*, for example, prompts the player-character to use a mortar loaded with white phosphorus to attack insurgents (to heinous ends). Only after the assault do player and character learn that the enemy had been providing shelter for dozens of civilians, all of whom have been killed in the attack.

Importantly, digital games are considered by many to be popular culture, while also fostering distinct (sub) cultures. Gamers assemble—often digitally, and sometimes physically—as fan and community members around such activities as cosplay (dressing up as game characters), cons (formal conventions, usually with speakers, tournaments, and social events), discussions about game stories and mechanics, and e-sports exhibitions (organized multi-player gaming competitions, usually with spectators). Some gamers create machinima (a portmanteau of "machine" and "cinema") by recording and editing in-game footage, often publishing the productions online and sometimes garnering micro-celebrity status.

Video game culture has recently found itself marked by the #GamerGate controversy characterized as a culture war between some game designers and scholars and proponents of ethical games journalism (who argue that such ethics are being undermined by feminist, progressive designs and critiques of game texts). As part of this ideological clash, a relatively small number of male gamers harassed and threatened select women and men in the game development industry and subsequently in academic associations such as the Digital Games Research Association (some of whom are our NCA colleagues).

Despite such tensions, gaming culture is also known for large-scale prosocial efforts. For example, Games for Change supports the development and distribution of humanitarian and educational games; the AbleGamers Foundation modifies consumer gaming equipment so that people with disabilities may engage in immersive experiences and use online games for social networking; and the non-profit Game Changer donates games and funding to the families of children with cancer.

Although digital games are broadly understood as entertainment media and spaces for socialization, some Communication scholars are examining gaming applications for education, health care, defense, training, politics, and social change. A new game developed by Communication scholar John Christensen functions as an intervention for problematic alcohol, drug, and sexual activities by addressing emotional dimensions, and was shown to reduce risky behaviors and to reduce shame among men who have sex with men. Emerging work by Elizabeth Cohen and Christine Rittenour is examining the potential for using digital doppelgangers to encourage people to behave more prosocially toward othered populations, such as older adults. Sky Anderson produced a game focusing on the emotional doubts that go along with feeling alone, and Aubrie Adams and colleagues are developing a virtual world for education. Similarly, our work out of West Virginia University's #ixlab examines the potential for games to sensitize players to interpersonal differences and various forms of aggression. Notably, the biennial Meaningful Play conference, hosted by Michigan State University's Department of Media & Information, brings together industry professionals and academics specifically to explore these potentials.

I challenge you to pick up a controller and explore the ways your own research programs may intersect with game studies—there are theoretical and practical intersections between digital games and *every* NCA interest group, from Law, Sport, and Health Communication to Performance, Political, and Spiritual foci.

MOVING FORWARD

Throughout this brief account of digital games through Communication lenses, I have introduced a variety of tensions that characterize perceptions of games and gamers. Games are bad and good. Games are social and technological. They're online and offline, texts and constructions, social and antisocial. These tensions can be productive, if scholars can avoid taking sides and instead use them as vehicles for scientifically understanding the *mechanisms* by which digital games function in contemporary life. Whether you're a gaming "noob," a seasoned gamer, or anywhere in between, I challenge you to pick up a controller and explore the ways your own research programs may intersect with game studies—there are theoretical and practical intersections between digital games and *every* NCA interest group, from Law, Sport, and Health Communication to Performance, Political, and Spiritual foci. This type of interdisciplinary work is increasingly important as game designers such as Jesse Schell speak of game characters as "digital companions," as gaming cultures diversify, as game environments move toward augmented and virtual realities, and as game experiences are designed to invoke deep emotions and behavioral changes. Digital games are communication—at textual, intrapersonal, interpersonal, social, and culture levels—and they are not apart from life, but *a part of life*. ■

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When Gamification Isn't Enough...

Be Gameful

By Barry Fishman, Ph.D., and Caitlin Holman

It's a pleasure to work with someone who is motivated and works hard. While true in any domain, it feels *especially* true in teaching. We want students to be deeply engaged, try new things, and be resilient in the face of failure. Unfortunately, our current educational system seems designed to foster the exact opposite behaviors among students. Writing on her HASTAC blog in 2012, Cathy Davidson noted that students have "learned well the lesson implicit in our society that what matters is not the process or the learning but the end result, the grade…. The message we're giving our students today is all that really counts is the final score."

It may be useful to think of school metaphorically as a game… but a *terrible* game, where players (students) are rewarded in ways that reinforce poor learning behaviors. In their 2003 book on game design fundamentals, Katie Salen and Eric Zimmerman define games as systems "in which players engage in artificial conflict, defined by rules, that results in a quantifiable outcome." Consider the interaction among students, assignments, and grades in light of that definition and it's easy to grasp the metaphor. So, how do we transform school into a *good* game?

A growing chorus argues that "gamification" is the answer: make learning fun by adding features from popular games, including points, badges, and leaderboards. But these are superficial elements of games. They may add a veneer of fun, but, as Ian Bogost has argued, gamification is coercive, enticing learners to do things we want them to do, but failing to alter the calculus of engagement. Gamification does not change the game. Our target in a redesign should be increasing *engagement*, not trying to make learning fun.

> In a gameful classroom, students are offered multiple pathways to success, and *they* choose which pathway they will follow. Students are encouraged to work together, or in productive competition.

What makes a game engaging? Scholars who study well-designed games, as James Gee did in his foundational 2003 book, *What Video Games Have to Teach Us About Learning and Literacy*, find that successful games leverage mechanics such as multiple routes to success, connection to affinity groups, and the freedom to take risks and recover gracefully from failure. Richard Ryan and Edward Deci's work on Self-Determination Theory establishes three basic human needs: support for developing competence (don't make learners feel stupid), a sense of autonomy (let learners make meaningful choices about their learning), and a feeling of relatedness (help learners feel connected to something bigger than themselves). When these elements are positively supported, learners feel greater intrinsic motivation—and are more productively engaged. When learning environments employ these elements through the use of game mechanics, we call that *gameful design*.

How does one create a gameful classroom? We begin by changing the assessment system, which drives how students think about the class and where they direct their attention. In a gameful classroom, students are offered multiple pathways to success, and *they* choose which pathway they will follow. Students are encouraged to work together, or in productive competition. There are opportunities to take intellectual risks, and if those risks result in initial "failure," there are opportunities to demonstrate understanding in other ways, and to receive feedback so that even unsuccessful attempts result in important learning. Students begin the experience with zero points, and as they demonstrate competence, they make progress toward their goals in the course.

Our research explores how game mechanics support student motivation and achievement. In our initial studies, we have found that gameful classrooms increase transparency, student confidence, and engagement. Students work much harder, *and* report enjoying the experience more. We note that gameful classrooms are more complex, and create new logistical challenges for both instructors and students. We've been developing tools that integrate with campus learning management systems to support this greater complexity and make it easier to teach using gameful design. We are growing the community of gameful courses at the University of Michigan to span a wide variety of disciplines—from physics, to linguistics, to architecture—and are observing vastly different assessment schemes in action. We hope to produce a set of best practices and tools to support the gameful classroom, enabling any instructor to use this approach to create a classroom that challenges students to work at the upper levels of their skills, while providing rich feedback on their progress. We are building a better game. ■

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Can Humans Trust Robots?

HITCHBOT, THE HITCHHIKING ROBOT, Helps Answer the Question

By Dr. Frauke Zeller and David Harris Smith, Ph.D.

Can we trust robots? This appears to be one of the main questions that come up when we discuss robots and the future prospect of sharing our personal spaces with them—in our places of employment and in our homes. We have been asking this question for a long time, and yet we are still quite unsure of the answer.

Humankind has always held in fascination, and strived to create, artificial entities that could move autonomously, and perhaps even talk. According to John Cohen's classic book, *Human Robots in Myth and Science*, stories of robots date back to the myths of the ancient Egyptians and Greeks. Hephaestus, son of Hera and Zeus, created mechanical handmaidens and built the famous Talos, a giant automaton man of bronze who protected Europe. These early tales feature robots as servants and protectors, or, as in the case of Pygmalion's Galatea, enchantresses. Darker seductions featuring robots can be found in films, including depictions of the Maschinenmensch (machine-human) in Fritz Lang's *Metropolis*, the engineered replicants of Ridley Scott's *Blade Runner*, and the sentient overlord machines of the Wachowski Brothers' *The Matrix*.

But what happens when we reverse the question to ask whether robots can trust humans? Our Schumpeterian "creative destruction" of the predominant question aims to tackle our relationship to technology, robots, and artificial intelligence from within. We need to understand our attitudes toward these automatons first—and that means going beyond the usual state of intrigue—in order to be able to meaningfully anticipate having robots as our coworkers, sitting next to us in the office, or even becoming our friends, home companions, or our kids' confidants.

To explore whether robots can trust humans, we have developed a robot that is entirely dependent upon the goodwill of people. And to challenge the question of trust, we sent that robot to hitchhike unaccompanied across Canada in the summer of 2014. The project was conceived as an opportunity to set an experimental, technological art project free in the wild. Combining arts and science, a hitchhiking robot would provide a novel and stimulating experience for the public. The project's objective was to offer insight into how humans might interact with a robot when given the freedom to interact with it or not; and their treatment of the robot (i.e., whether they would help or harm it).

hitchBOT's trip began on July 27 in Halifax, Nova Scotia, and concluded on August 21 in Victoria on Vancouver Island, British Columbia. As an interdisciplinary arts and science project, it included experts from humanities and engineering disciplines, such as Communication

hitchBOT at home with its research team in Port Credit, Ontario.

Studies, Professional Communication, Multimedia, Art, Engineering, Mechatronics, and Computational Linguistics. hitchBOT was designed as a social, friendly, and entirely human-dependent robot. Having no mechanism for propulsion, it relied on the kindness of strangers to pick it up, put it in their vehicles, and take it as far as they could toward its final destination.

To build a robot that would appear to be trustworthy to humans (so that they felt safe enough to invite it into their cars), we took three main factors into account: the robot's appearance or design, its communication skills, and its interaction skills.

The *appearance* is very important when it comes to building trustworthy robots. From Human-Robot-Interaction (HRI), which is the scientific field that deals with all aspects of robots and their interaction with human beings, we know that the quality of physical embodiment is important in building trust and even promoting some kind of attachment to the robot. The signalling function of embodiment is apparent among human beings: We see someone and instantly form some kind of understanding or opinion about that person, derived from physical features such as sex, height, and physique, and also from clothing and accessories. Similarly, robot designers must consider embodied communication strategies. We wanted to give our robot a physical form that would signal that it would not be a threat, and instead would encourage empathy and offers of assistance. To support these objectives, we decided that the robot's size should mimic that of a six-year-old child, and that it should look fun and quirky. People tend to want to help children, because children trigger a sense of innocence and trust in us. Also, our curiosity is more likely to be kindled when seeing something unusual. This 'quirkiness' was achieved by employing a junk or "yard sale" aesthetic, using green pool noodles for the robot's arms and legs, a big bucket for its torso, yellow rubber gloves for its hands, and rubber boots for its shoes. Finally, to signal social interaction potential, we gave hitchBOT a dynamic smiling face with winking eyes (see image of hitchBOT). These anthropomorphic features—a face, body, arms and legs—helped signal that hitchBOT has social interaction potential.

Our team proved that the creative combination of knowledge and ideas from artists, communication specialists, and engineers can result in a successful social robot.

The *communication skills* of a machine or robot often go hand-in-hand with its *interaction skills*, and therefore will be discussed complementarily. These two areas also present ample interdisciplinary connections for Communication scholars and linguists. According to Cynthia Breazeal in her publication, *Designing Sociable Robots*, a social robot must be able to communicate and interact with people. Additionally, some sort of personality is also an important aspect, since this makes it easier for people to relate to the robot. Reversing the typical goals of HRI, where interaction is designed to support leveraging of the technology in service of human aims, hitchBOT's interaction design was aimed at enlisting human capabilities in support of the robot's travel agenda. This required stimulating human curiosity and willingness to engage with the technology, while adhering to the rudimentary resources afforded to us by our constrained budget.

Equipping a robot with speech recognition and processing abilities—so that it can hear what is being said to it, process and understand it, and then respond with a fitting answer—is a complex endeavor. Research and development in the field of artificial intelligence and sensory mechanisms is typically accomplished under highly optimized laboratory conditions that control for consistency of input, lack of extraneous noise, and predictable interaction modalities. However, by sending hitchBOT on a solo adventure across Canada, where it would be on the roadside, in a car with a lot of background noise, interacting throughout the day with different people with varying accents, dialects, voice pitches, etc., we knew that we could not guarantee verbal interaction all the time. Thus, while hitchBOT does employ speech interaction using Cleverscript dialogue modeling software and Pocketsphinx speech recognition, we also developed a compensatory strategy to address difficult speech interaction conditions by specifically designing supplementary interaction using hitchBOT's personality and secondary communication tools.

hitchBOT's personality was designed to mimic an oddball travelling companion, one with character, opinions, and a tendency to take the conversation in new directions. We employed this latter strategy to allow hitchBOT to offer *non sequiturs* when it was unable to recognize what was said to it. For example, "I love video games! I play them when people aren't paying attention to me." In order to complete hitchBOT's personality, we created a whole life story for it, including where hitchBOT was born, facts about its family, and its preferred hobbies (such as horse-riding, European football, and hockey).

In order to reinforce its personality, and to make sure that it was communicated, we designed secondary communication means for the robot. From the first design sketches of the physical appearance of the robot, we also developed a comprehensive communication strategy for both social media and traditional news media. The social media aspect represented a particularly novel approach, and set the project apart from traditional HRI projects, where the main communication features are usually part of the physical appearance and experience when interacting with the robot. In hitchBOT's case, the aim was to use social media in order to engage not only with those people finding hitchBOT on the side of the street, but also with a broad, international community. Another rationale was to use the robot's social media accounts as a tool to communicate its immediate adventure and travel goals, and ultimately, through this, to generate interest, trust, and some form of attachment.

We decided to create profiles for the robot on Facebook, Twitter, Instagram, and additionally on a blog and website that we developed. The social media strategy was designed to engage with and provide updates to the online community. hitchBOT's website was used as a secondary channel for publishing updates and other long-form content, including hitchBOT's location map, and user stories. The communication strategy also included a precise definition as to how the robot should communicate in terms of tone, language choice, and how often it should communicate. Furthermore, we decided to have all communication channels appear as hitchBOT's own "voice," i.e., as first person narrator. This decision was meant to generate further 'interpersonal' engagement and, we hoped, to instill greater trust, but also to make it interesting and fun for people to interact with the robot on social media. We trained our research assistants to adopt hitchBOT's voice when creating social media and website content. For example, "Hitched my first ride! A lovely couple offered to help me out. Look out, New Brunswick—Here I come!…" However, we also programmed the robot so that it could tweet on its own. The combination of a robot communicating on its own, but also having humans beings helping it from "behind the curtain" is a common scenario in HRI experiments. Called the "Wizard of Oz" scenario, it enables researchers to focus on the interaction of the robot with people, rather than being hindered by speech technology shortcomings and difficulties.

The results of our design and communication strategies were overwhelming. hitchBOT traveled coast to coast in Canada in under four weeks, receiving 17 different rides and interacting with hundreds of individuals face to face in public spaces and events. With more than 35,000 followers on Twitter, 48,000 Likes on Facebook, and 12,000 followers on Instagram (data from September 2014), hitchBOT generated a high level of interaction and engagement on three distinct levels:

1. *direct physical engagement*—people interacting with the robot
2. *indirect engagement*—people visiting certain events to see hitchBOT
3. *virtual engagement*—people following hitchBOT's journey and commenting on it through social media

Moreover, hitchBOT attracted significant media interest, encompassing all traditional media forms (TV, radio, print media) both nationally and internationally, with more than 12,000 hits found through a Google news search.

CONCLUSION

The results of the hitchBOT project prove that humankind's longstanding fascination with robots is alive and well. Moreover, as people since ancient times have always strived to be innovative in terms of mimicking communicative skills—by using the means and tools they had available at the time—we should aim to do the same today. This entails three main steps: First, we need to continue to expand interdisciplinary and multidisciplinary work in the field of social robotics. Our team proved that the creative combination of knowledge and ideas from artists, communication specialists, and engineers can result in a successful social robot.

Second, using available means to integrate social media can augment the design of a communicative social robot. Seeing the high level of virtual engagement is a surprising outcome insofar as physical interaction and design appear to be the two dominant factors for instilling trust and attachment in traditional HRI. In hitchBOT's case, we have 35,000 followers on Twitter and 48,000 Likes on Facebook from people who have never met hitchBOT, hence never experienced physical interaction. And yet, as more detailed analyses of the social media content show, of the total 37,544 tweets, 22,162 were original tweets and only 15,382 were retweets. Marketing experts would be surprised to learn that people took the time to actually produce their own content relating to hitchBOT, rather than pursuing the usual option (as is often supported by social media analytics of marketing strategies) of simply retweeting what others have said. This shows that people did, indeed, form some kind of attachment to the robot—through social media, kindled by the robot's communication style and strategy.

Finally, in order to create social robots that people trust and find both engaging and stimulating, we need to adopt innovation strategies that are creative, inclusive, and participatory to see what kind of robots people really want. The usual scenario in HRI experiments involves a constrained design, where the robot's tasks and how people should interact with it (usually to achieve a common goal in collaboration with the robot) are predetermined. These projects tend to prescribe what people can and should do with a robot. The hitchBOT project instead left all of these aspects open, inviting the public to engage with the robot, and to collaboratively complete this project. Both approaches are valuable and can provide us with the potential for remarkable progress in the field of HRI, where human nature and people's needs represent a focus as well as a driving factor. ■

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POST-CYBORG WORLD OF THE 21ST CENTURY

By Thomas Frentz, Ph.D.

There's more than a little irony in one of the last living Luddites on the planet, who doesn't even own a cell phone, having been asked to recount my scholarly adventures with cyborgs, those part-metal, part-meat entities of the late 20th century. But looking back is sometimes valuable, because what's behind sometimes points toward what's ahead. I want to embark upon my very own "back to the future" retrospective in four phases. I'll begin with *Projecting the Shadow: The Cyborg Hero in American Film*, my first sustained encounter with cyborgs, written with Janice Hocker Rushing in 1995. I then want to talk about *The Matrix*, that chilling 1999 tale about how advanced computer technology splits humanity into concepts and bodies, and how we today seem to be living out some of its prophesy. From there, I'll segue over to an article I wrote about a *really* chilling tale, Ray Kurzweil's, "The Singularity," the idea that in the not-too-distant future humanity will evolve into a totally technological, post-human being. And finally, I'll take a brief look at *Her*, a film that addresses the relational consequences when a human falls in love with a post-human.

In *Projecting the Shadow*, Janice and I worried that, with the demise of any genuine spiritual moorings, human hunters would eventually lose control of their weapons until those very weapons, in the form of cyborgs, would turn back and begin to hunt the hunter. We cast our concerns in a grand mythic design, and then tried to show how the films *Jaws*, *The Deer Hunter*, *The Manchurian Candidate*, *Blade Runner*, *The Terminator*, and *Terminator 2: Judgment Day* each captured an important moment in the successive separation of humanity from technology. And, although scholarly books don't usually traffic in spiritual prophesy, we gave it a go at the end, suggesting various ways that humanity might once again reconnect with some form of spiritual wholeness as a precondition to reconnecting with their own technological offspring.

> [The] prophesy of *The Matrix* has become all too real in 2015. For example, how many of you, like me, have to begin your classes these days with something like, "Before we begin, would you please turn off your cell phones and put them away?"

Had *The Matrix* come out before 1995, it would surely have been the concluding film chapter of *Projecting the Shadow*, for clearly the technology of *The Matrix* made the clunky cyborgs of the *Terminator* films seem almost anachronistic. Janice and I did, however, have something to say about *The Matrix*, although I'll update our remarks here. Back in the mid 1960s, media theorist Marshall McLuhan once said that art shows us the future when we can only feel it. In 1999, *The Matrix* showed us what most only felt—namely, an escalating fear of our growing dependency on technology, which was already beginning to dominate our lives in the form of cell phones and laptop computers. Technology in *The Matrix* was not projected as cyborgs, but rather as an all-encompassing network of computers that created a simulated life world (the matrix), and then populated it with avatars whose bodies were hidden away as energy sources for the computers. For a few, such as the protagonist, Neo, the half-life within the matrix was inexplicably empty, but for most, including the antagonist, Cypher, the benign pleasures within the matrix were preferable to the visceral life outside of it (for those who dare, think "Facebook" here).

But for me, the scary prophesy of *The Matrix* has become all too real in 2015. For example, how many of you, like me, have to begin your classes these days with something like, "Before we begin, would you please turn off your cell phones and put them away?" How many of you, like me, encounter people who are so fixated on their cell phones as they walk that they would surely collide with you unless you either said something or stepped out of their way? And how many of you, again like me, watch with increasing anxiety as some driver, one hand on the steering wheel, the other on a cell phone, almost swerves into you? Do you see the disturbing similarity here between these "cell-people" (aka: the "pod-people" from *The Invasion of the Body Snatchers*) and the avatars in *The Matrix*? I certainly do.

I'm fairly certain that today many people—perhaps even most—have become as addicted to their technology as some are to alcohol or drugs. In terms of the character in *The Matrix*, many have become "cyphers" who prefer technological stimulation over any form of genuine human contact. And for those who think this is just the grousing of some addled old curmudgeon, try this simple experiment: Turn off your own cell phone, put it in some drawer out of reach, then sit back and see what happens. Here are my two hypotheses. One, you won't even try the experiment, offering up all sorts of rationalizations,

The Singularity [is] a time when humans will have evolved into post-humans, meaning that all biological parts and functions will have been superseded, miniaturized, and perfected by technological replacements.

from the parental plea, "I need to know where my kids are and what they are doing," to the occupational demand, "I need my phone in order to conduct the business required by my job." Two, for those of you up for giving it a go, I predict that in—what?—maybe 40 minutes to an hour, you will begin to experience a moderate to severe case of what I call CPWS (aka: "Cell Phone Withdrawal Syndrome"), at which time you will give it up, find your phone, turn it on, drink deeply from the well of the social network, stop shaking, and be at one again in your own little matrix.

But by 1999, in addition to humanity-draining techno-addiction, productive advances in medical technology meant that an ever-increasing segment of the population was able to have knee, hip, shoulder, and other assorted joint replacements. This burgeoning group became part of a mostly invisible "Cyborgs-R-Us" culture known only to the beleaguered members of airport security. But then, as I was to discover 14 years later, technological evolution took another giant step forward—and not for the betterment of either humans, avatars, or cyborgs. While innocently scribbling away on a piece concerning whether recent concepts within science fiction and virtual reality might reanimate Plato's dream of the merging of two souls in the *Phaedrus*, I stumbled across Ray Kurzweil and "The Singularity." That stumble was, as they say, the end of my innocence, because this Singularity thing was "science fact," not "science fiction," and because its consequences for humankind as we know it were as frightening as they were fascinating. So let me spend a few minutes with Ray and his idea.

As an internationally acclaimed guru within the corporate universe of information technology where he operates as an inventor, mathematician, educator, and futurist, Kurzweil focuses on three interrelated areas of research—namely, genetics, nanotechnology, and robotics (GNR). Taken together, these areas culminate in the Singularity, a time (Kurzweil guesses around 2045) when humans will have evolved into post-humans, meaning that all biological parts and functions will have been superseded, miniaturized, and perfected by technological replacements.

The profile of these hypothetical post-humans is quite remarkable. Because they will be completely technologized, post-humans will be disease-free—no more colds and no more cancer, although they will be susceptible to computer viruses. Moreover, because memory loss, limited attention spans, and mental disorders (all caused by physiological and/or psychological factors) will have been completely eliminated, post-humans will produce instantaneous, error-free, trans-linguistic communication—via direct electronic connection—between and among other post-humans. But the real kicker is that post-humans will be immortal, although Kurzweil hedges a bit here and says that post-humans will be able to live as long as they want to, but not necessarily forever. I've often wondered what a post-human might look like, but all I can come up with is C3PO from *Star Wars*.

For Communication scholars, the impact of the Singularity on the post-human condition is absolutely mind-boggling. The analogy that works best for me comes from linguist Noam Chomsky. In previewing his 1965 theory of generative grammar, Chomsky distinguishes between the linguistic competence of an ideal speaker/listener, a hypothetical being who knows all the rules of grammar perfectly and has none of the physiological or psychological limitations of real persons, and the linguistic performance of those real persons whose competence is corrupted and compromised by those very same physiological and psychological limitations. In effect, what the Singularity would mean is that the flawed communicative performance of humans would become the perfect communicative competence of post-humans. The real would morph into the ideal.

So, in terms of my own forays into cinematic visions of the human/technology relationship, the Singularity seems to complete, at least for the near future, an evolutionary trajectory that includes: (1) humanity dividing from technology (think *Frankenstein*), (2) humanity rejoining technology as cyborgs (the *Terminator* films), (3) computer technology simulating a world and then fracturing humanity into technological concepts and

I am fairly certain that if any form of post-humanity comes to pass, our field will be radically other than what it is right now, or than what it has ever been in the past.

energy-supplying bodies (*The Matrix*), and finally (4) technology entering the human body, sucking out all of its biological traces, and replacing those biological components with ever-smaller, ever-faster, and ever more efficient forms of technology (keep reading).

Although I am fast becoming a film critic who no longer watches film, I did see one recently that addressed, albeit conservatively and indirectly, the Singularity. In fact, Kurzweil, who is not a film critic (although he is almost everything else), even penned a short commentary on it. I refer to the 2013 science fiction film, *Her*, in which Theodore, an introverted and lonely writer of personal letters for those who cannot write themselves, falls in love with a computer software program equipped with an artificial intelligence (AI) capable of growing and expanding with prolonged contact with humans (as was the Terminator, we may recall, in *Terminator 2: Judgment Day*). What we discover is that this AI program, "Samantha" (breathily brought to life by Scarlett Johansson), is much more relational, empathic, understanding, sensual, playful, and intimate than any of the humans Theodore knows.

The problem, of course, is that Theodore is only human, while Samantha is most decidedly post-human. As Samantha grows exponentially through her contact with Theodore, she discovers other AI-driven software programs that are infinitely more capable than Theodore at meeting her ever-expanding relational needs. Predictably, Theodore and Samantha part company, she ascending, we might imagine, into "the cloud" with other like-minded AIs, Theodore descending, we actually see, "out of the clouds," to find a loving human who, while unable to replace "Sam," can at least comfort him during his time of trial. The Singularity teaser in *Her* is that unless humans "tech-up" and become enhanced, meaning that they willingly replace some or all of their biological parts with technological upgrades, the inestimable relational potential of AIs such as Samantha will be forever out of reach.

So where are we in the spring of 2015? Clearly, we are already in the cyborg world of the Terminator, but not yet in the post-humanity world of Samantha. In terms of films, we seem to be hovering somewhere around *The Matrix*, insofar as we are at least as dependent upon and comfortable with the technological devices in our world as the characters in *The Matrix* were dependent on and comfortable with their computer-constructed life styles in their own simulated world. I'm not sure what all of this might portend for Communication, but I am fairly certain that if any form of post-humanity comes to pass, our field will be radically other than what it is right now, or than what it has ever been in the past. ■

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Permit No. 2333

ABOUT THE RIO HOTEL & CASINO

- The Rio's state-of-the-art conference center includes over 160,000 square feet of space—all located on one level. The ambiance is elegant yet relaxed and removed from the bustle of activity in the casino.
- The Rio features more than 10 dining options, representing various price points and diverse cuisines.
- Enjoy exceptionally well-appointed guest rooms that include spaces for lounging, entertaining and, of course, sleeping.

ABOUT LAS VEGAS

- Over 900 convenient flights daily between Las Vegas and cities around the globe provide reasonable airfares and easy access.
- Las Vegas enjoys 340 days of sunshine per year and an average daily temperature of 83 degrees. Blue skies in the morning turn into beautiful sunsets late in the day.
- Las Vegas is the perfect jumping-off point for many of the Southwest's natural wonders including Red Rock Canyon (pictured in our convention art), Zion National Park, and Grand Canyon National Park.
- An entertainment capital of the world, Las Vegas offers hundreds of spectacular shows and events.

CONVENTION REGISTRATION AND HOTEL RESERVATIONS WILL OPEN IN JULY 2015.
WWW.NATCOM.ORG/CONVENTION

Plan Now to Attend!

Embracing Opportunities

NCA 101st Annual Convention

November 19-22, 2015
Las Vegas, NV

MAKE PLANS NOW to join thousands of your colleagues for NCA's 101st Annual Convention, to be held November 19–22, 2015, at the Rio Hotel & Casino in Las Vegas, Nevada. Fresh from reflections about our past(s), in 2015, we will (re)imagine possibilities for our future(s) with sessions reflecting the conference theme, "Embracing Opportunities."

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