
Gender, Simulation, and Gaming: Research Review and Redirections

Simulation & Gaming
41(1) 51–71
© The Author(s) 2010
Reprints and permission: <http://www.sagepub.com/journalsPermissions.nav>
DOI: 10.1177/1046878109353473
<http://sg.sagepub.com>



Jennifer Jenson¹ and Suzanne de Castell²

Abstract

This review of gender and gameplay research over the past three decades documents a set of persistent methodological repetitions that have systematically impeded its progress since the inception of this trajectory of research. The first is, in fact, a refusal to consider gender at all: Conflating gender with sex impedes possibilities to identify nonstereotypical engagements by girls and women. Second is the persistent attempt to identify sex-specific “patterns” of play and play preferences “characteristic” of girls and women mainly to support and promote these in the name of “gender equity,” whether in women’s involvement in the game industry as designers, in the development and marketing of “games for girls,” or the access and uses of digital games for education, training, and entertainment. Third, it is found that “gender” is an issue in research studies only long enough to dismiss it as a significant variable, which in turn makes any deeper critical interrogation unproductive.

Keywords

boys, consumers, design, digital games, femininity, gameplay, gamers, games, games industry, gender, gender stereotypes, girls, identity, masculinity, men, methodology, players, popular culture, progress, sex, technology, women

The difficulty for novelists and playwrights concerned with the promotion and development of a central female character, wrote Henry James in his introduction to *The Portrait of a Lady*, is that they are “typical, none the less, of a class difficult, in the individual case, to make a centre of interest” (p. 48). To imagine giving center stage to

¹York University, Toronto, Ontario, Canada

²Simon Fraser University, Burnaby, British Columbia, Canada

Corresponding Author:

Jennifer Jenson, Faculty of Education, York University, 1023 TEL, 4700 Keele Street, Toronto, Ontario, Canada M3J 1P3

Email: jjenson@edu.yorku.ca

a female character, a heroine who, as George Eliot put it, “In these frail vessels is borne onward through the ages the treasure of human affection”¹ was at the time for authors, and still clearly is today for designers and developers of digital games, persistently difficult.

In 1981, an article in *Simulation & Gaming* documents, as a pedagogical and curricular bias in contemporary business simulations, the finding that women did not value as much as their male classmates the use of computer-based simulations as an integral part of their course (Chisholm & Krisnakumar, 1981). The researchers’ expressed concern was that, as more women took business courses, games and simulation-based curriculum and pedagogy would need to be “adjusted” in order to accommodate their viewpoints and preferences. If we consider what has been learned from gender and gaming research over the past 20+ years, it is instructive to begin by noting that, details aside, their article could as well have been written today.

We present in this review, accordingly, a “cautionary” (Belloc, 1923/1936) overview of research on gender and simulation/games that points out persistent methodological biases endemic to nearly every inquiry in which “gender” holds prominence of place. These methodological “potholes” on the long road to understanding significant interplay across the fields of gender studies and simulation and gaming research largely explain, we demonstrate, the tiresome and worrying persistence of familiar themes and unremarkable findings from which research in this field has seldom wavered.

Common Research Pitfalls: Gender as Lack and Gender as Superfluity

The first, and arguably the largest and deepest of these research pitfalls is to construe and study *gender as lack*. Naive gender ontologies, in which existence is bifurcated into sexes and sexes into two, necessarily interrogate the “second sex” (de Beauvoir, 1949/1973) in terms of lack (Phipps, 2007). Our review connects gender and gaming studies with prior, more extensive research on gender and technology more generally and undertakes to illustrate how this systematic methodological bias means that nothing much that is new can be learned either about gender or about games and simulations, as through persistently descriptive accounts of girls/women and gaming, familiar gender assumptions and truisms are reaffirmed.

The second research pitfall is *gender as superfluity*. Gender is invoked in such studies merely to dismiss it as an insignificant factor. Much current quantitative research, including reports on the number of women/girls playing video games, tends to fall into this category of research, which, bent on the inevitably reassuring counting and calculating of what is, does not problematize nor deeply interrogate either of its axiomatic terms.

From neither of these methodological orientations has much been able to be learned, either about gender or about simulation/gaming, since neither term is, by virtue of either perspective’s methodological precommitments, the point or purpose of the inquiry.

Research that breaks out of these constraints does so first and foremost by recasting the purpose of gender and gaming research: Very different questions and ways of

answering them become possible when researchers aim to destabilize and reorganize concepts and practices, rather than describe and reauthorize them.

Greater promise resides, we argue, with alternative and more productive frameworks for gender and gaming inquiry. For example, McDermott and Varenne's (2006) question of *when* is gender asks at what point and in what context is any particular enactment taken up and denominated as "gendered," and actor-network analyses study how agency gets remediated through material conditions and technologies that afford competence, both typically and atypically. The review will conclude with potential "new directions" that might release the category of gender and thereby gender-based game research from the self-imposed stranglehold of repetition, inaction, and "lack" that already constitute what it is we know or think we know. That is, we will suggest that the next 10 years of gender and simulation/game research might invite, indeed, cultivate and demand, "surprise" (Becker, 1998) from our subjects and ourselves.

Normative Positions: Gender and Technologies

It is difficult, if not outright impossible, to shake loose deeply engrained, hegemonic normative discourses and practices that demarcate, delimit, and predominate everyday gendered subject positions, especially in relation to technologies. While not the explicit purpose of this review, it is necessary to foreground the work we will do here through the lens of this systemic recurrent feature of gender and technology studies more generally, as that had an early and sustained impact on how gender and gameplay was theorized.

Research on gender and technology has, in some sense, stalled in the past decade. The central issue remains untouched: that there is a relative paucity of women who "choose" computer science and engineering programs at the postsecondary level, that indeed these numbers have not increased in the past decade but decreased (Burrelli, 2008; Dean, 2007), and that despite interventionist work, little has changed. In a review of international research on gender and technology over the past 30 years, Jane Abbiss (2008) broadly characterizes that work as being discursively situated in terms of "male norm and female deficit" (p. 2).

For example, researchers have documented consistent differences in computer use by males and females (American Association of University Women [AAUW], 1998, 1999, 2000; Brosnan, 1999; Collis, Kass, & Kieren, 1989; Dugdale, DeKoven, & Ju, 1998; Light, 1997; Lightbody & Durndell, 1996; Littleton & Bannert, 1999; Littleton & Hoyles, 2002; Siann, Macleod, Glissov, & Durndell, 1990; Sutton, 1991; H. Taylor & Mounfield, 1994). While administrators, teachers, parents, students and university-based researchers alike have stressed the importance of the sciences and information technologies for the educational and vocational futures of all students, neither the number of girls enrolling in these subjects nor the number of women who go on to work in them has noticeably increased (Burrelli, 2008). If there is, in fact, any increase to be noticed, it is in the opposite direction as girls' and women's participation in especially

computer science and engineering fields tends to be diminishing (Burrelli, 2008; Kramarae, 2001; Stabiner, 2003).

While it has been argued that technologies are *gendered* (Cockburn, 1992) as a result of the context or culture of their production, they also embody particular assumptions about social relations. Writers such as Bryson and de Castell (1996), Cockburn (1992), and Wajcman (1991) outline ways in which women have *not* been alienated from technologies. Instead, they have sought to challenge what counts as “technology” and have pointed out that often “technologies” are defined so as to exclude the technologies that women use and/or to “forget” women’s contributions to technological innovation (e.g., Ada Lovelace’s construction of the “Analytical Engine”).²

Masculinity can be seen, on this view, to be constructed, at least partially, through assumptions related to technological skills and competence. Technological competence, so seen, has less to do with actual skills and more to do with construction of a gendered identity—that is, women lack technological competence to the extent that they seek to *appropriately perform* femininity; comparatively, men are technologically competent by virtue of their *performance* of masculinity.³ Cockburn (1992), Wajcman (1991), Turkle (1988), and Schofield (1995), to name a few, argued that one of the reasons that many women actively resist participation in masculinized technologies like computers is because it directly “threatens their identities as feminine,” and because these technologies are already categorized as activities that are appropriate for men. Technology cannot, therefore, be assumed to be a value-neutral tool that women and men use indiscriminately or free from social constructions of identity that continually (re)position them through markers like gender, race, nationality, or class. One different approach, then, to reading off the past 30 years of gender and technology research might be to do, as Abbiss (2008) suggests, and see it as *discursively boxed in*: “The inclination to blame females for their lack of involvement in the IT industry and in ‘hard’ computing courses is itself a reflection of the social structuring of gender and IT” (p. 162). This is no less the case in terms of gender and video games: The powerful association of masculine subjects as gamers and game designers as well as the presumption (through technologies generally) of (male) competence and ability have positioned women and girls unerringly as “less able,” “less competent,” and as “casual” gameplayers.

The Question of Gender: From Gender and IT to Gender and Video Games

We took the time to briefly overview work on gender and technology in order to show some of the foundational studies that work on gender and video games drew upon and from which it continues to draw. Another reason for this was to begin to show how the three areas we have chosen for organizing research on gender and gameplay over the past 20 years or so (i.e., female lack—of abilities, interest, use; axiomatic constructions of male/female; and new discursive positionings) are already present in and theorized by those doing work broadly on gender and technology. That research represents an invaluable starting point for research on gender and gameplay, providing insights and

points of departure that we hope to show might be valuable for new work on gender and gameplay. It should be noted here that much of the focus of the field has been to investigate whether and how women/girls play games, who they play with, what they like to play, and so on.

This has been driven less by scholarly interest than by a perceived development and marketing question on the part of game developers with “how to get more women to buy games” as well as early work that construed play preferences as facts about “what women want” (de Castell & Bryson, 1998). This means, then, that there are few studies to date that focus exclusively on studying and theorizing the male gamer, as this has been the presumed “default” position from which much of the early work was done and later work has followed. Where possible, we will introduce some of the work that is out there on boys/men and gameplay. It should be noted, however, that much of this has been couched within a broader study of women/girls and gameplay.

Constructing the Female Gamer: Use, Attitudes, and Preferences

Work on gender and video game play is relatively scarce before the publication of Justine Cassell and Henry Jenkins’s (1998) edited collection *From Barbie to Mortal Kombat*. Prior to that, most of the research in the area of gender and computer gameplay had been confined to studies that were focused on the technological dimension of games, situating computer games as part of the larger domain of “gender and technology” studies (Abbiss, 2008; Culley, 1993). Cassell and Jenkins’s (1998) collection, then, marked off “gender and video games” as a particular realm of study within the more general debates on gender and technology.

It is no accident that the early work on gender and gameplay arose out of an expressed concern for the perceived lack of women and girls in the field of computing (Cassell & Jenkins, 1998). Cassell and Jenkins theorized, and others have since (AAUW, 2000), that perhaps one entry point for girls and women into the world of computing might be generated (as it appeared to have been in anecdotal accounts of their male peers) through the development of skill and interest in playing video games. Crosscut with market-driven interest in increasing “share” and profitability by engaging an as yet largely “untapped” sector, what this “concern” materially and theoretically produced were accounts of gender and gameplay in terms of attitudes toward and preferences for certain types of games as well as documentation of who was playing games and how often.

In Cassell and Jenkins’s collection, the articles were concerned not only with this underrepresentation but also with what they saw as the strong potential of digital gameplay to assist technological familiarity and skill on behalf of the player. Here also was a discussion of “player preferences” (Cassell & Jenkins, 1998), that is, what sorts of games girls “liked” and “did not like” as well as a more nuanced discussion of the gendered nature of play itself (de Castell & Bryson, 1998). Following in the footsteps of the games industry focus on creating appealing titles for girls, girls’ preferences in

games were unproblematically reported, for example, as being “collaborative” and “exploratory” and shying away from “confrontation” and “violence” (Grodal, 2000).

This black boxing of gender has been a recurring theme in gender and digital game studies since the late 1990s. In 2000, for example, THE SIMS was released and has since, through its expansions and the release of SIMS 2, been the top-selling PC game of all time. The industry, of course, took notice: Girls and women were buying and playing the game in record numbers. THE SIMS, and its franchise, it has since been argued, is successful as a “crossover hit” for a number of reasons:

1. Its design team included women.
2. Its premise is that of an elaborate dollhouse.
3. It provided different and frequent kinds of “interaction” that appealed to a female audience.
4. It was essentially nonviolent.

However, the success of THE SIMS did not lead to more appealing “games for girls,” and women continue to be radically underrepresented in the industry (International Game Developer’s Association [IGDA], 2005). That said, the success of THE SIMS, in part, renewed an interest in designing games for girls. Sheri Graner Ray’s (2004) work *Gender Inclusive Game Design: Expanding the Market* attempts to tackle the question of design of video games for a “nontraditional market” (e.g., women and girls) through an essentialized and highly stereotyped account of differences and preferences between male and female players and how designers can design more effectively to capture a female audience.

Taking a completely different tack, the academy has begun to move away from universalistic, stereotyped accounts of gender and gameplay. While girls and women certainly are less visible as gamers, that is not to say they are not playing (Bryce & Rutter, 2003; Carr, 2005; Jenson & de Castell, 2005; T. L. Taylor, 2006). They have been and are playing, supported in their play by their male relations (brothers, uncles, fathers, boyfriends, husbands), and have created communities of their own (e.g., Frag Dolls, Quake Grrls, Riot Grrls, and numerous all-female COUNTERSTRIKE communities). Discourses around “preferences,” moreover, have moved from simple binaries (violence/no violence, collaborative/competitive—e.g., Ray, 2004; Turkle, 1984/2005) to being seen as highly contextual and therefore dependent on social, cultural, and other quotidian factors rather than simply on what a girl might “like” or “dislike” in any enduring or dispositional way (Carr, 2005; Jenson & de Castell, 2005; Krotoski, 2004; Yee, 2008). Gradually, it has begun to be clear that while girls and women *do* play, what and how they play is always negotiable, context dependent, and usually not necessarily in the company of other girls or female players. As Nick Yee (2008) concludes from his ongoing survey-based research on massively multi-player online games like WORLD OF WARCRAFT:

The reality is that those men and women who currently play online games are overwhelmingly similar in terms of what they like to do with them. And

stereotypical assumptions of gender motivations are either nonsignificant . . . or are dwarfed by differences in age. (pp. 94-95)

Female Gamers: It Is Those Who Choose Who Play

The relatively (compared with men and boys) smaller number of women and girls who play games has, as indicated above, led to documentation of their play in an explicitly focused way since the late 1990s. This work has tended to interview female gamers about their play (when, where, with whom) and their thoughts generally on the (presumed) masculinized culture of gameplay (Cassell & Jenkins, 1998; Cunningham, 2000; Ivory & Wilkerson, 2002; Media Analysis Laboratory, 1998; Schott & Horrell, 2000; Yates & Littleton, 2001). In these studies, researchers tend to interview small numbers of girls and women, and it therefore remains the case that it is still relatively difficult to get reliable data on the play practices of women and girls. This is primarily because gender is often accorded statistical status to, analytically, dismiss it. In other words, in quantitative surveys of video game ownership and play, data disaggregated by gender are used to show that women and girls *are* playing games, a finding that then warrants analytical disinterest in further questions of what kinds of games, for how long, and in what relation to their male peers. So this “play or don’t play” data, if useful at all, only serve as a kind of “check mark,” justifying dismissal of what are quite possibly very different play patterns, preferences, and possibilities.

Two large, often-cited surveys that publish data on video game players in North America are the Kaiser Family Foundation (<http://www.kff.org/entmedia/>) and the Entertainment Software Association (<http://www.theesa.com>). According to Kaiser Family Foundation’s (2005) large survey (over 2,000 respondents and over 600 seven-day media-use diaries) of media and children, the percentage of those girls surveyed who had a videogame console in their bedroom was 33 (63% of boys reported having a videogame console in their bedroom), while the percentage of girls with handheld videogames was 48 (63% of boys). What these statistics do not do is give a clear picture of what kind of videogame consoles and games respondents self-reported as having access to in their bedrooms (e.g., DANCE DANCE REVOLUTION? HALO 3?). They did, however, ask respondents to indicate approximate time spent playing console and handheld games, concluding that there is a marked gender difference in terms of time spent on video game play:

Video games are clearly gender-typed. Boys are much more likely than girls to play video games on any given day (63% vs. 40%, respectively), and to spend more than an hour daily with video games (31% vs. 11%). Boys spend almost three times as much time as girls playing video games (1:12 vs. 0:25) . . . Similarly, boys spend triple the time that girls spend playing console games (48 minutes vs. 14 minutes), but just double the time for handheld games (24 minutes vs. 11 minutes). (Kaiser Family Foundation, 2005, p. 33)

A similar issue arises in the surveys conducted by the Entertainment Software Association (ESA). ESA's statistics are general, quantitative, and based on self-reporting of over 1,200 households that were asked about who plays and what they play (ESA, 2008). In their most recent survey of who plays, ESA reports that 40% of gameplayers are female and the average age of players is 35 years, with significantly more women aged 18 years or older reportedly playing games. What they do not do is aggregate *what* people reportedly play by gender or by age. While these statistics might give us a broad idea of the numbers of people who claim to play video games, it still elides divergence in play: There is a big difference between someone who reportedly plays online free puzzle games and someone else who is paying for multiple subscriptions to play multiple characters in persistent world, massively multiplayer online games.

As noted, a less quantitative approach has also been taken in relation to female gamers. In particular, work by Royse Joon, Undrahbuyan, Hopson, and Consalvo (2007) and Thornham (2008), for example, explicitly documents the contexts of play for adult women gamers, including more nuanced accounts of when they choose not to play. Their work is adding to a growing body of literature (Bryce & Rutter, 2003; T. L. Taylor, 2006) that argues that while women might not occupy central positions in relation to games and gameplay in mainstream popular and/or commercial culture, that does not mean that they are not participating either on the margins or, in rare cases, more centrally. In particular, research of this kind has argued, along lines similar to Liesbet van Zoonen (2002) that, "the decisive moment in the circuit of culture is in the moment of consumption, when technologies are domesticated in everyday lives" (p. 16). We need to know a great deal more than we do now about how, for girls and women, game technologies are "domesticated in everyday lives." More specifically, we must investigate whether the "moments of game consumption," for women and girls, are less domesticated than disruptive, suggesting instances less of domestication and more of a form of "trouble in the house" (aka *gender disorder*).

For many, and certainly in ongoing popular cultural terms, girls and women are nowadays seen to be central consumers of games. For example, in his 2007 keynote address to the Game Developers Conference in San Francisco, California, revered game designer Miyamoto (Nintendo; notable titles include MARIO, DONKEY KONG, BRAIN AGE) jokingly presented his wife as a measure of his success in designing new games: The more she liked playing, the further she registered on the "Wife-O-Meter." True success arrives for Miyamoto when he discovers that she has gotten up in the night to cast votes on Nintendo's "Everybody Votes" channel on the new Wii, further joking that "it would have been less surprising to find Donkey Kong ransacking his house" (Sinclair, 2007).

For girls, consumption is more difficult to assess in domestic spaces: It seems that girls tend to have limited access to gameplay technologies and are more often and more intensively parentally regulated when it comes to what they can and cannot play. They often "wait in line" behind male relations when it comes to accessing both time and technology (Jenson & de Castell, 2007; Walkerdine, 2006). Given the difficulties of approaching the study of girls in domestic spaces, studies of their gameplay consumption

has been most often located outside the home: at school-based game clubs (Carr, 2007; Jenson & de Castell, 2006, 2007; Kafai, 2008; Pelletier, 2008; Walkerdine, 2006, 2007) **[AQ: 1]** and in LAN cafes (Beavis & Charles, 2007). What is common to much of this work is the perceived and documented tension between the male cultures of gameplay, which actively construct and become a site for the production of “contemporary masculinity,” (Walkerdine, 2008) **[AQ: 2]** and “technologies of a gendered-self” (Royse et al., 2007) that collocate and restructure the masculine/feminine binary to construct female gamers as something other than marginalized players. The tension in much of this work is the difficulty of writing about and indeed coconstructing and reconstructing masculinities and femininities in ways that do not simply reinforce and solidify the very gender stereotypes their participants seem to be pushing against.

Interventionist Work: Challenging Representation in Games

While the possibilities for choosing a female character in a video game have certainly increased, it is still the case that they are highly underrepresented in digital games generally, tending specifically to be more obviously sexualized than male characters (Beasley & Standley, 2002; Dietz, 1998; Dill, Gentile, Richter, & Dill, 2005; Haninger & Thompson, 2004; Ivory, 2006; Provenzo, 1991; Smith, Lachlan, & Tamborini, 2003). Stand out characters like Lara Croft of the TOMB RAIDER series and Samus Eran from the METROID series have been held up as examples of a changing tide in the video games industry toward drawing less passive, more powerful female characters for its still largely male audience to consume and play. While there might be more active roles for female characters, it is still the case that they are drawn as highly sexualized characters with oversized breasts and lips and very little clothing. Furthermore, when female characters are drawn in lead roles, they are almost exclusively White (Jansz & Martis, 2007).

Some have argued that the video game industry has responded to a call for more and variable female character choices in games. Lara Croft (TOMB RAIDER series) or Sonya (MORTAL KOMBAT) are no longer the only “girls in town”—players can choose from a range of female characters in most role-playing games, in nearly all MMORPGS, and in a range of other titles from MARIO KART to DIGIMON RACING. That said, sports games continue to focus on male teams and players: the one exception being the Wii “Sports” title, which rotates between male and female Nonplayer Characters. Interestingly, much of this work quickly passes over the fact that male characters in games tend to be as hypersexualized as their female counterparts.

Disrupting the Masculine Culture of Games: Female Game Designers

The “first wave” of interest in and research on girls and gaming saw gameplay as a conduit to and support for developing confidence and competence with new technologies. In its “second wave,” not merely playing games, but the more complex and demanding challenge of designing them, has been promoted as a way to encourage and

support girls in both computer use as well as via some levels and kinds of programming. In Yasmin Kafai's (1995) groundbreaking constructivist research on children as game designers, findings with respect to girls' designs paralleled claims about girls' "preferences," and the same kinds of results appeared in the later work of Walkerdine, Thomas, and Studdert. (1998). Until quite recently, neither these nor similar smaller studies have taken explicitly into account the context in which and the experiential background from which these designs were arrived at. This oversight presupposes by default that, for girls and boys, the video game area represents a "level playing field." We have little reason to suppose and many reasons to doubt that this is in fact the case. Until both theory and research explicitly and actively take prior differences and occurrent contextual factors seriously into account, we cannot expect to find much deviation from gender stereotyping that has thus far dominated theory and research concerning gender and gaming.

This is no less true for work that has tried to focus directly on the number of women who are involved in the video games industry generally. The industry has been widely criticized for not building games that appeal to girls and women as well as for not hiring and retaining more female employees in key game design positions. A recent survey by Electronic Arts (a leading game design company), for example, found that only 40% of teenage girls play console games (compared with 90% of boys), and most of those leave behind their game playing after a year (<http://news.bbc.co.uk/2/hi/technology/5271852.stm>). In an effort to encourage girls in the design and development of games, there have been a number of intervention-focused research projects carried out in North America to help give girls programming skills. Among them are the Rapunsel project (Flannagan, Howe, & Nissenbaum, 2007), the use of ALICE and STORYTELLING ALICE (open source software that allow users to create 3D games) to learn programming (Kelleher, 2006), and Jill Denner's work with middle school girls and digital game creation (Denner, Werner, Bean, & Tyner, 2005). **[AQ: 3]**

In the video game industry, the IGDA (2005) reports in a large-scale survey on demographics of workers at game companies in North America that women represent only 11% of employees, with most of those positions located in Human Resources. While some are reporting that the industry is seeking out "new markets" and as such "more women" (Schiesel, 2007) and, concomitantly that in general companies are not aware of a "gender imbalance" (Edge Staff, 2008), it is still the case that the most blatant stereotypes about women and girls and gameplay are rehearsed in the media. In a story that ran in the *New York Times*, Olaf Wolters, managing director of BIU, the German interactive game association, an organizer of a gameplay tournament in Germany, is quoted as saying, "In Germany, we're very traditional and it's probably why the girls get the dolls and the boys get the Game Boys. That is why we have to work on the parents, so they bring in the girls" (Carvajal, 2006).

Sex-Aggregated Studies of Violence and Video Game Playing

Studies of violence and video game play intersect tangentially with gender, insofar as they tend to be constructed out of the "media effects" research tradition and, because

of their psychological background, tended early on to disaggregate data by sex (Anderson, 2004; Anderson & Bushman, 2001; Barlett, Anderson, & Swing, 2009; Bushman, 2001; [AQ: 4] Eastin, 2006; Funk, 1993; Shibuya, Sakamoto, Ihori, & Yukawa, 2008; Tamborini et al., 2004). Of note in this literature is the historical documentation of “little to no difference” between males and females at least when arguing that violent video game play initiates violent behaviors (much like watching violent TV does). For example, in their meta-analysis of the studies of the effects of violence and video game play, Anderson and Bushman (2001) found no sex-based differences for aggressive behaviors.

Sociocultural Studies of Gameplay in Context

A number of recent studies have focused on girls/women (boys/men) playing games in home, school, and some (public) LAN contexts (Beavis & Charles, 2005, 2007; Carr, 2007; Carr, Buckingham, Burn, & Schott, 2006; Jenson & de Castell, 2008; Walkerdine, 2007). What unites this work is a qualitative approach to documentation of the research, which helps to “uncover” and, more importantly, outline how, where, when, why, and with whom girls and women are playing games. Much of this work argues that context is *critical* to an understanding of gender and gameplay (Dovey & Kennedy, 2006) and that much that has been written on what girls/women “prefer” to play is seriously disrupted by attending closely to the lived practices and daily choices of women/girls as they play games (Carr, 2007; Jenson & de Castell, 2008; Kafai, 2008; Thornham, 2008).

Sociocultural studies of play tend to mobilize an understanding of gender identity as contingent and tenuous, performed differently by subjects working (and playing) in determinate contexts. Seeing digital gaming as a terrain where gender is enacted, indeed “performed,” requires attending to the ways players (including both “researchers” and “subjects”) engage with technologies that enable and constrain certain forms of experience,⁴ and change not only what and how they play but also how they interact with others as they become more competent at a particular game or genre. It also requires moving away from conceptualizations of gender either as insoluble, sex-based difference or as monolithic and largely static categories (Ray, 2004).

Sociocultural studies are pushing back against taken-for-granted presumptions that are attributed to gender. More specific, they challenge commonly held assumptions that, for example:

- girls and women prefer a certain type of game,
- that they eschew violence and competition, and
- that they are not “interested” in playing games as much or as frequently as their male counterparts

Diane Carr (2005), for example, studied a girls game club in an all-girls’ school in which she examined the “relationships between taste, content, context and competence, in order to explore the multiple factors that feed into users’ choices and contribute to

the formation of gaming preferences” (p. 466). She concludes, not with a reinscription of gendered gameplay preferences (e.g., what games the girls in her study most preferred to play), but instead by acknowledging that while it is possible to “map patterns” for play preferences, to do that assumes that they are stable instead of preferences being “an assemblage, made up of past access and positive experiences and subject to situation and context” (p. 479). Finally, and importantly, Carr stresses that,

What did become apparent was that the girls’ increasing gaming competencies enabled them to identify and access the different potential play experiences offered by specific games, and to selectively actualize these potentials according to circumstance and prerogative. This indicates that forms of competency underlie and inform our gaming preferences—whatever our gender. (p. 478)

It might well be, then, that competency has been too often misrecognized as some factual attribute for gender, and the more recent work of Jenson & de Castell (2008) supports this claim.

While there is then, a growing body of work on gender and gameplay that examines play in school-based contexts, there is still very little that documents home play or play in LANS (Beavis & Charles, 2007; Lin, 2008; Schott, 2006; **AQ: 5** Thornham, 2008) as it relates in particular to group play and gender. Thornham’s ethnographic study of groups of households who play games offers the first larger scale study of this kind, and she argues persuasively that:

Returning video games to the home, and discussing them in terms of their socio-cultural and discursive importance or shaping, is therefore a vital and necessary act if the lived cultures or cultural practices of video games are to be understood. This move also offers a more nuanced and socio-political account of gaming which encompasses primarily the consumption, but also production and marketing, elements of gaming. (p. 141)

In the work of Jo Bryce and Jason Rutter (2003, 2005), this “move” has led them to study how the physical spaces of gaming (arcades, living rooms, bedrooms) are materially and discursively positioned in ways that maintain boys as the “natural” users of game technologies.

These studies are further reinforced by a growing body of work that examines gameplay in other cultural contexts (Scandinavia, Japan, Taiwan, and Korea, for example) and at the kinds of differences that are culturally located. T. L. Taylor (2008) writes about new interventionist work being done in Scandinavia to disrupt and challenge the usual kinds of games that are produced by large commercial companies, Holin Lin (2008) studies the regulation and resistance to that regulation of female game players in Taiwan, and Mizuko Ito (2008) looks at the intersection of gender and gameplay within a Japanese “media mix” culture that celebrates a hybrid engagement and play with a usually rigid Japanese social structure. Ito concludes that masculine/

feminine binaries are much less rigid on closer inspection, stating that: “Despite the resilience of gender-differentiated social and cultural structure in Japan, the on-the-ground dynamics of media mixing, media engagement and play are evidence of a shifting set of gender dynamics intersecting with gaming cultures” (p. 109).

New Directions? Steering Away From Stereotypes

In a 2008 characterization of gender and video games for an updated edited collection *Beyond Barbie to Mortal Kombat*, Henry Jenkins and Justine Cassells argue that the key issues for gender are focused still on girls play and that they have largely remained unchanged in the intervening 10 years, namely: “(a) the debate about whether girls do and can and should play video games and (b) the concern that women are still vastly underrepresented in the fields that design digital technology” (p. 5). As this review has indicated, of the growing body of research that has documented girls/women playing and (sometimes) making games that has taken shape in the past 10 years, much has continued to produce positivistic accounts of what women/girls want, what they prefer, and what they like. In some sense, this work has paralleled, as we have shown, the research on gender and technology generally, continuing to focus primarily on the documentation of “choice,” “lack of interest,” and “differing ability” from their generalized and technologically able male counterparts. Far fewer studies, as noted, examine male players (individually or as a group) and/or the masculine culture of digital game play, commerce, commercialization, and media specifically.

What remains in most of this work is a predominant, indeed, an almost intuitive reflex to crudely attribute “difference” as demarcated by male/female sex binaries.⁵ This reflex is present in even the most current work on gender and digital game play and presents itself no less persistently in research that sees itself as assiduously attempting *not* to reinvoke gender-/sex-based stereotypes.

Both an operational and a conceptual misunderstanding seem to underpin much of this kind of work: In documenting (largely) qualitative research projects that involve both boys/girls and/or men/women, research accounts continue to compress gender-based differences into sex-based difference necessarily coded as male or female. If, however, this research documented the *range* of possibilities for *gender*-based play (as one example), then the reporting on this research could more usefully include far more nuanced accounts of *feminized male play* or *masculinized female play*. Lacking such finer grained *gender*-based analyses, research reporting still produces the following familiar kind of account:

We found that male playtesters would figure out how to play the game, and progress from beginning to end whether or not they were particularly interested in it. Female playtesters were slow to learn and unmotivated to progress until the game content and story align better with themes and topics they found interesting. (Heeter & Winn, 2008) **[AQ: 6]**

This kind of operational misunderstanding (which is ubiquitous and is not at all unique to Heeter and Winn's, 2008, study) encourages the further persistent conceptual misunderstanding, that somehow all girls/women and all boys/men will have similar approaches under similar conditions. Such deeply structured presumptions of difference between and among girls/women and boys/men has sustained a persistent conceptual stranglehold on identities as singular, immutable, unchangeable forces governing how we learn, how we think, and how we play. One very real implication of these forces has been made manifest in the past two International Digital Games Research Association Conference keynotes (DiGRA 2007, DiGRA 2009) in which all the prominent positions in the conference (keynotes) were given to male researchers, and this is entirely typical of conferences in this field, despite the fact that there are many women who do comparable, arguably more critical, digital games research.

In the future, the very real need for research on gender and gameplay that more carefully reports on, documents, and *troubles* identities of player, producers, and consumers of digital games, especially in relation to gender, cannot be underestimated. In particular, this work would begin from the more nuanced theories of gender and identities that have been developed through postmodern, poststructural, feminist, postfeminist, queer theory, and theories of race and identity and then approach questions around gender and gameplay with a view to reporting on and accounting for those kinds of difference. While we can appreciate, understand, and indulge Henry James' (1908/1986) lament in *Portrait of a Lady* over a writer's "woman problem" in contriving central role for strong female characters, we ought surely to harden our hearts in the present day: There is really no excuse for the persistence in games studies research of conceptual frameworks that from the start make no room for girls and women such as these nor for seeing the myriad ways James' "portrait" is reimposed, surveilled, and enforced for women and girls in those "decisive moments" of their everyday lives. Computer-supported play and pleasure might allow for them, as it has so successfully done for men and boys, new forms of play and pleasure, new avenues for learning and creativity, and new and highly profitable careers. How can it be intellectually defensible, with the volume and variety of critical deconstructive analyses of both "sex" and "gender" that has in these intervening years come to be so freely available to researchers, that gender-focused research trends relatively acquiescently along its timeworn game-paths? Our best hope of hardening our hearts to more of the same will come only once we sharpen our wits: It is high time we took seriously and operationalized in our research methodology and practice the fact that not all women need be ladies and not all ladies are "frail vessels."

Acknowledgments

A special thanks to Nick Taylor, Helen Kennedy, and Gareth Schott for their careful reading and helpful comments on the article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article. **[AQ: 7]**

Funding

The authors received the following financial support for the research and/or authorship of this article:

This work was supported by the Social Sciences and Humanities Research Council of Canada.

[AQ: 8]

Notes

1. As quoted in James (1908/1986, p. 48).
2. Ada Lovelace is considered to be one of the founders of scientific computing.
3. This is not to say that relations to technological competence are only about “performing” some predetermined masculine/feminine binary, which would, of course, severely limit the possibilities for challenging or changing gender-technology relations. We do, however, want to call attention to those practices or “performances” of masculinity and/or femininity that are familiar, as Benston (1992) strongly argues, “male use of technology communicates power and control . . . The whole realm of technology and the communication around it reinforces ideas of women’s powerlessness” (p. 41). **[AQ: 9]**
4. This includes, importantly, assuming the control of in-game characters that are often hypersexualized and racialized; see, for example, Kennedy (2002), N. Taylor, Jenson, and de Castell (2007), and Everett (2005).
5. Here we want to distinguish between sex and gender in much the same ways that Gayle Rubin (1975) **[AQ: 10]** did so long ago in “The Traffic of Women” in which she argues that we are all a part of a universal sex-gender system. She defines the sex-gender system as “the set of arrangement by which a society transforms biological sexuality into products of human activity and in which these transformed sexual needs are satisfied” (p. 159). In other words, the sex is a biological marker, gender is socially constructed and *both* categories are used to establish and maintain heteronormative hierarchies.

References

- Abbiss, J. (2008). Rethinking the “problem” of gender and IT schooling: Discourses in literature. *Gender and Education, 20*, 153-165.
- American Association of University Women. (1998). *Separated by sex: A critical look at single-sex education for girls*. Washington, DC: American Association for University Women Educational Foundation.
- American Association of University Women Educational Foundation & American Institutes for Research. (1999). *Gender gaps: Where schools still fail our children*. New York: Marlowe.
- American Association of University Women Educational Foundation Commission on Technology, Gender, and Teacher Education. (2000). *Tech-savvy: Educating girls in the new computer age*. Washington, DC: Author.
- Anderson, C. A. (2004). An update on the effects of violent video games. *Journal of Adolescence, 27*, 113-122.
- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science, 12*, 353-359.

- Barlett, C. P., Anderson, C. A., & Swing, E. L. (2009). Videogame effects—Confirmed, suspected and speculative: A review of the evidence. *Simulation & Gaming: An Interdisciplinary Journal*, 40, 377-403.
- Beavis, B., & Stanley, T. C. (2002). Shirts vs. skins: Clothing as an indicator of gender role stereotyping in video games. *Mass Communication & Society*, 5, 279-293.
- Beavis, C. (2005, June). Pretty good for a girl: Gender, identity and computer games. In S. de Castell & J. Jenson (Eds.), *Changing views: World in play*. Vancouver, British Columbia, Canada: University of Vancouver. Retrieved March 28, 2009, from the DiGRA Digital Library Web site: <http://www.digra.org/dl/db/06276.30483.pdf> [AQ: 11]
- Beavis, C., & Charles, C. (2005). Challenging notions of gendered game play: Teenagers playing *The Sims*. *Discourse: Studies in the Cultural Politics of Education*, 26, 355-368.
- Beavis, C., & Charles, C. (2007). Would the “real” girl gamer please stand up? Gender, LAN cafes and the reformulation of the “girl” gamer. *Gender and Education*, 19, 691-705.
- Becker, H. S. (1998). *Tricks of the trade: How to think about your research while you're doing it*. Chicago: University of Chicago Press.
- Belloc, H. (1936). *The bad child's book of beasts: Together with more beasts for worse children and cautionary tales*. London: Duckworth. (Original work published 1923)
- Benston, M. (1992). Women's voices/men's voices: Technology as language. In G. Kirkup & L. S. Keller (Eds.), *Inventing women: Science, technology and gender* (pp. 15-28). Cambridge, UK: Polity.
- Brosnan, M. (1999). New methodology, and old story? Gender differences in the “draw-a-computer-user” test. *European Journal of Psychology of Education*, 14, 375-385.
- Bryce, J., & Rutter, J. (2003). The gendering of computer gaming: Experience and space. In S. Fleming, & Jones, I. (Eds.), *Leisure cultures: Investigations in sport, media and technology* (pp. 3-22). Eastbourne, UK: Leisure Studies Association.
- Bryce, J., & Rutter, J. (2005). Gendered gaming in gendered space. In J. Raessens & J. Goldstein (Eds.), *Handbook of computer games studies* (pp. 301-310). Cambridge: MIT Press.
- Bryson, M., & de Castell, S. (1996). Learning to make a difference: Gender, new technologies, and in/equity. *Mind, Culture and Activity*, 3, 119-135.
- Burrelli, J. (2008, July). *Thirty-three years of women in S&E faculty positions*. Retrieved March 28, 2009, from the National Science Foundation Web site: <http://www.nsf.gov/statistics/infbrief/nsf08308/nsf08308.pdf>
- Bushman, B. J., & Anderson, C. A. (2002). Violent video games and hostile expectations: A test of the general aggression model. *Personality and Social Psychology Bulletin*, 28, 1679-1686. [AQ: 12]
- Carr, D. (2005). Contexts, gaming pleasures, and gendered preferences. *Simulation & Gaming: An Interdisciplinary Journal*, 36, 464-482.
- Carr, D. (2007). Computer games in classrooms and the question of cultural baggage. *British Journal of Educational Technology*, 38, 526-528.
- Carr, D., Buckingham, D., Burn, A., & Schott, G. (2006). *Computer games: Text, narrative and play*. Cambridge, UK: Polity.
- Carvajal, D. (2006, September 4). The game is on to woo the elusive female player. *International Herald Tribune*. Retrieved March 28, 2009, from <http://www.nytimes.com/2006/09/04/technology/04games.html>

- Cassell, J., & Jenkins, H. (Eds.). (1998). *From Barbie to Mortal Kombat: Gender and computer games*. Cambridge: MIT Press.
- Cassell, J., & Jenkins, H. (2008). From *Quake Girls* to *Desperate Housewives*: A decade of gender and computer games. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 5-20). Cambridge: MIT Press. **[AQ: 13]**
- Chisholm, T. A., & Krishnakumar, P. (1981). Are computer simulations sexist? *Simulation & Gaming: An Interdisciplinary Journal*, 12, 279-292
- Cockburn, C. (1992). The circuit of technology: Gender, identity and power. In R. Silverstone & E. Hirsch (Eds.), *Consuming technologies: Media and information in domestic spaces* (pp. 33-42). London: Routledge.
- Collis, B. A., Kass, H., & Kieren, T. (1989). National trends in computer use among Canadian secondary school students: Implications for cross-cultural analyses. *Journal of Research on Computing in Education*, 22(1), 77-89.
- Culley, L. (1993). Gender equity and computing in secondary schools: Issues and strategies for teachers. In J. Beynon & H. Mackay (Eds.), *Computers into classrooms: More questions than answers* (pp. 147-159). London: Falmer Press.
- Cunningham, H. (2000). *Mortal Kombat* and computer game girls. In J. Caldwell (Ed.), *Electronic media and technoculture* (pp. 213-226). New Brunswick, NJ: Rutgers University Press.
- de Beauvoir, S. (1973). *The second sex* (H. M. Parshley, Ed. & Trans.). New York: Vintage Books. (Original work published 1949)
- de Castell, S., & Bryson, M. (1998). Retooling play: Dystopia, dysphoria, and difference. In J. Cassell & H. Jenkins (Eds.), *From Barbie to Mortal Kombat: Gender and computer games* (pp. 232-261). Cambridge: MIT Press.
- de Castell, S., & Jenson, J. (2006a). Education, gaming and serious play: New attentional economies. In J. Weiss, J. Nolan, & P. Trifonas (Eds.), *International handbook on virtual learning environments* (pp. 999-1018). New York: Kluwer Academic. **[AQ: 14]**
- de Castell, S., & Jenson, J. (2006b). No place like home: Sexuality, community and identity among street-involved "queer and questioning" youth. *McGill Journal of Education*, 41, 226-247. **[AQ: 15]**
- Dean, C. (2007, April 17). Computer science takes steps to bring women into the fold. *New York Times*. Retrieved March 23, 2009, from <http://www.nytimes.com/2007/04/17/science/17comp.html>
- Dietz, T. L. (1998). An examination of violence and gender role portrayals in video games: Implications for gender socialization and aggressive behavior. *Sex Roles*, 38, 425-442.
- Dill, K. E., Gentile, D. A., Richter, W. A., & Dill, J. C. (2005). Violence, sex, race and age in popular video games: A content analysis. In E. Cole & J. H. Daniel (Eds.), *Featuring females: Feminist analyses of the media* (pp. 115-130). Washington, DC: American Psychological Association.
- Dovey, J., & Kennedy, H. (2006). *Game cultures: Computer games as new media*. New York: Open University Press.
- Dugdale, S., DeKoven, E., & Ju, M. (1998). Computer course enrollment, home computer access, and gender: Relationships to high school students' success with computer spreadsheet use for problem solving in pre-algebra. *Journal of Educational Computing Research*, 18(1), 49-62.

- Eastin, M. S. (2006). Video game violence and the female player: Self- and opponent gender effects on presence and aggressive thoughts. *Human Communication Research, 32*, 351-372.
- Edge Staff. (2008, March 10). *Why the gender imbalance must be addressed*. Retrieved March 28, 2009, from <http://www.edge-online.com/features/why-gender-imbalance-must-be-addressed>
- Entertainment Software Association. (2008). *2008 sales demographic and usage data: Essential facts about the computer and video game industry*. Washington, DC: Author.
- Everett, A. (2005). Serious play: Playing with race in contemporary gaming culture. In J. Raessens & J. Goldstein (Eds.), *Handbook of computer game studies* (pp. 311-326). Cambridge: MIT Press.
- Flanagan, M., Howe, D., & Nissenbaum, H. (2007). Design method outline for activist gaming. In S. de Castell & J. Jenson (Eds.), *Worlds in play: International perspectives on digital games research* (pp. 241-248). New York: Peter Lang.
- Funk, J. B. (1993). Reevaluating the impact of video games. *Clinical Pediatrics, 32*, 86-90.
- Grodal, T. (2000). Video games and the pleasure of control. In D. Zillman & P. Vorderer (Eds.), *Media entertainment: The psychology of its appeal* (pp. 197-213). Mahwah, NJ: Lawrence Erlbaum.
- Haninger, K., & Thompson, K. M. (2004, February 18). Content and ratings of teen-rated video games. *Journal of the American Medical Association, 291*, 856-865.
- Heeter, C., & Winn, B. (2008). Gender identity, play style, and the design of games for classroom learning. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 281-300). Cambridge: MIT Press.
- Heintz-Knowles, K., & Henderson, J. (2002, August). *Gender, violence and victimization in top-selling video games*. Paper presented at the annual meeting of the Association for Education in Journalism and Mass Communication, Miami Beach, FL. **[AQ: 16]**
- International Game Developers Association. (2005). *Game developer demographics: An exploration of workforce diversity*. Retrieved March 28, 2009, from <http://www.igda.org/diversity/report.php> **[AQ: 17]**
- Ito, M. (2008). Mobilizing the imagination in everyday play: The case of Japanese media mixes. In S. Livingstone & K. Drotner (Eds.), *International handbook of children, media, and culture* (pp. 397-412). Thousand Oaks, CA: Sage.
- Ivory, J. D. (2006). Still a man's game: Gender representation in online reviews of video games. *Mass Communication and Society, 9*, 103-114.
- Ivory, J. D., & Wilkerson, H. (2002, August). *Video games are from Mars, not Venus: Gender, electronic game play and attitudes toward the medium*. Paper presented at the annual meeting of the Association for Education in Journalism and Mass Communication, Miami Beach, FL.
- James, H. (1986). *The portrait of a lady*. London: Penguin Classics. (Original work published 1908)
- Jansz, J., & Martis, R. G. (2007). The Lara phenomenon: Powerful female characters in video games. *Sex Roles, 56*, 141.
- Jenson, J., & de Castell, S. (2005). Her own boss: Gender and the pursuit of incompetent play. In S. de Castell & J. Jenson (Eds.), *Changing views: World in play*. Vancouver, British Columbia, Canada: University of Vancouver. Retrieved March 28, 2009, from the DiGRA Digital Library Web site: <http://www.digra.org/dl/db/06278.27455.pdf>

- Jenson, J., & de Castell, S. (2006, October). *You're going to die: Gender, performance and digital gameplay*. Paper presented at the Computers and Advanced Technology in Education (CATE) Conference, Lima, Peru.
- Jenson, J., & de Castell, S. (2007). Girls playing games: Rethinking stereotypes. *Futureplay 2007, November*, 9-16.
- Jenson, J., & de Castell, S. (2008). Theorizing gender and digital gameplay: Oversights, accidents and surprises. *Eludamos. Journal for Computer Game Culture*, 2(1), 15-25.
- Kafai, Y. B. (1995). *Minds in play: Computer game design as a context for children's learning*. Hillsdale, NJ: Lawrence Erlbaum.
- Kafai, Y. B. (2008). Genderplay in a tween gaming club. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 111-124). Cambridge: MIT Press.
- Kaiser Family Foundation. (2005). *Kids & media @ the new millennium* (Program for the Study of Entertainment Media and Health). Retrieved April 14, 2009, from <http://www.kff.org/entmedia/1535-index.cfm>
- Kelleher, C. A. (2006). *Using 3D gaming technology to draw students into computer science*. Paper presented at the Game Design and Technology Workshop and Conference, Liverpool, UK.
- Kelleher, C. (2008). Using storytelling to introduce girls to computer programming. (2008). In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 247-264). Cambridge: MIT Press. **[AQ: 18]**
- Kennedy, H. W. (2002). Lara Croft: Feminist icon or cyberbimbo? *Game Studies*, 2(2). Retrieved March 28, 2009, from <http://www.gamestudies.org/0202/kennedy/>
- Kramarae, C. (2001). *The third shift: Women learning online*. Washington, DC: American Association for University Women Educational Foundation.
- Krotoski, A. (2004). *Chicks and joysticks: An exploration of women and gaming*. London: Entertainment and Leisure Software Publishers Association.
- Light, P. (1997). Computers for learning: Psychological perspectives. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 38, 497-504.
- Lightbody, P., & Durnell, A. (1996). The masculine image of careers in science and technology: Fact or fantasy? *British Journal of Educational Psychology*, 66, 231-246.
- Lin, H. (2008). Body, space and gendered gaming experiences: A cultural geography of homes, dormitories and cybercafes. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 67-81). Cambridge: MIT Press.
- Littleton, K., & Bannert, M. (1999). Situating differences: The case of gender and computer technology. In J. Bliss, R. Säljö, & P. Light (Eds.), *Advances in learning and instruction series* (pp. 171-182). Amsterdam: Pergamon.
- Littleton, K., & Hoyles, C. (2002). The gendering of information technology. In N. Yelland, & A. Rubin (Eds.), *Ghosts in the machine: Women's voices in research with technology* (pp. 3-32). New York: Peter Lang.
- McDermott, R., & Varenne, H. (2006). Reconstructing culture in educational research. In G. Spindler & L. Hammond (Eds.), *Innovations in educational ethnography: Theory, methods, and results* (pp. 3-32). Mahwah, NJ: Lawrence Erlbaum.

- Media Analysis Laboratory. (1998, October). *Video game culture: Leisure and play preferences of B.C. teens*. Burnaby, British Columbia, Canada: Simon Fraser University. Retrieved March 28, 2009, from http://www.media-awareness.ca/english/resources/research_documents/studies/video_games/video_game_culture.cfm
- Phipps, A. (2007). Re-inscribing gender binaries: Deconstructing the dominant discourse around women's equality in science, engineering, and technology. *Sociological Review*, 55, 511-528.
- Provenzo, E. (1991). *Video kids: Making sense of Nintendo*. Cambridge, MA: Harvard University Press.
- Ray, S. G. (2004). *Gender inclusive game design: Expanding the market*. Hingham, MA: Charles River Media.
- Royce, P., Joon, L., Undrahbuyan, B., Hopson, M., & Consalvo, M. (2007). Women and games: Technologies of the gendered self. *New Media & Society*, 9, 555-576.
- Schiesel, S. (2007, February 11). Game on: Hero returns to slay his dragons. *New York Times*. Retrieved March 28, 2009, from <http://www.nytimes.com> **[AQ: 19]**
- Schofield, J. W. (1995). *Computers and classroom culture*. Cambridge, MA: Cambridge University Press.
- Schott, G. R., & Horrell, K. R. (2000). Girl gamers and their relationship with the gaming culture. *Convergence: The International Journal of Research into New Media Technologies*, 6(4), 36-53.
- Shibuya, A., Sakamoto, A., Ichori, N., & Yukawa, S. (2008). The effects of the presence and contexts of video game violence on children: A longitudinal study in Japan. *Simulation & Gaming: An Interdisciplinary Journal*, 39, 528-539.
- Siann, G., Macleod, H., Glissov, P., & Durndell, A. (1990). The effect of computer use on gender differences in attitudes to computers. *Computers & Education*, 14, 183-191.
- Sinclair, B. (2007, March 8). GDC07: Miyamoto speaks. *Gamespot*. Retrieved March 28, 2009, from http://www.gamespot.com/wii/sports/wiisports/news.html?sid=6167078&cpage=37&prev_button=1
- Smith, S. L., Lachlan, K., & Tamborini, R. (2003). Popular video games: Quantifying the presentation of violence and its context. *Journal of Broadcasting & Electronic Media*, 47(1), 58. Retrieved March 26, 2009, from Gale database. **[AQ: 20]**
- Stabiner, K. (2003, January 12). Where the girls aren't. *New York Times*. Retrieved March 28, 2009, from <http://www.nytimes.com/2003/01/12/education/where-the-girls-aren-t.html>
- Sutton, R. E. (1991). Equity and computers in the schools: A decade of research. *Review of Educational Research*, 61, 475-503.
- Tamborini, R., Eastin, M. S., Skalski, P., Lachlan, K., Fediuk, T. A., & Brady, R. (2004). Violent virtual video games and hostile thoughts. *Journal of Broadcasting & Electronic Media*, 48, 335-357.
- Taylor, H., & Mounfield, L. (1994). Exploration of the relationship between prior computing experience and gender on success in college computer science. *Journal of Educational Computing*, 11, 291-306.
- Taylor, N., Jenson, J., & de Castell, S. (2007, September). Gender in play: Mapping a girls' gaming club. In B. Akira (Ed.), *Situated play* (pp. 302-308). Tokyo: The University of Tokyo. Retrieved March 28, 2009, from the DiGRA Digital Library Web site: http://www.digra.org/dl/search_results?general_search_index=Gender+in+play%3A+Mapping+a+girls%92+gaming+club&SUBMIT=Search

- Taylor, T. L. (2006). *Play between worlds: Exploring online game culture*. Cambridge: MIT Press.
- Taylor, T. L. (2008). Becoming a player: Networks, structures, and imagined futures. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 51-65). Cambridge: MIT Press.
- Thornham, H. (2008). "It's a boy thing": Gaming, gender and geeks. *Feminist Media Studies*, 8, 127-142.
- Turkle, S. (1988). Computational reticence: Why women fear the intimate machine. In C. Kramarac (Ed.), *Technology and women's voices: Keeping in touch* (pp. 41-61). London: Routledge.
- Turkle, S. (2005). *The second self: Computers and the human spirit*. Cambridge: MIT Press. (Original work published 1984)
- van Zoonen, L. (2002). Gendering the internet: Claims, controversies and cultures, *European Journal of Communication*, 17(1), 5-23.
- Wajcman, J. (1991). *Feminism confronts technology*. University Park: Pennsylvania State University Press.
- Walkerdine, V. (2006). Playing the game: Young girls performing femininity in videogame play. *Feminist Media Studies*, 6, 519-537.
- Walkerdine, V. (2007). *Children, gender, video games: Towards a relational approach to multimedia*. Basingstoke, UK: Palgrave Macmillan.
- Walkerdine, V., Thomas, A., & Studdert, D. (1998). *Young children and video games: Dangerous pleasures and pleasurable dangers*. Retrieved June 30, 2008, from http://creativetechnology.salford.ac.uk/fuchs/projects/downloads/young_children_and_videogames.htm
- Yates, S., & Littleton, K. (2001). Understanding computer game cultures: A situated approach. In E. Green and A. Adam (Eds.), *Virtual gender: Technology, consumption and identity* (pp. 103-23). London: Routledge.
- Yee, N. (2008). Maps of digital desires: Exploring the topography of gender and play in online games. In Y. Kafai, C. Heeter, J. Denner, & J. Sun (Eds.), *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming* (pp. 83-96). Cambridge: MIT Press.

Bios

Jennifer Jenson is an associate professor of pedagogy and technology in the Faculty of Education, York University, Canada. She is coeditor of *Loading: A Journal of the Canadian Game Studies Association* and has published on gender and technology and gender and video games. Contact: jjenson@edu.yorku.ca.

Suzanne de Castell is a professor and interim dean of the Faculty of Education, Simon Fraser University. She is editor of *Worlds in Play: International Perspectives on Digital Games Research* (2008) and has recent publications on digital games and education, gender and gameplay, and informal learning environments. Contact: decaste@sfu.ca.