

# The Gendering of Computer Gaming: Experience and Space<sup>1</sup>

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## Abstract

The increasing popularity of computer gaming as a contemporary leisure activity, together with the use of PCs and games consoles as leisure technologies are evidence of the increasing convergence of new technology and leisure practice. The size and popularity of the games industry stands out in contrast to the lack of understanding of computer gaming as a serious leisure activity. Previous research on computer game playing has tended to focus on the negative aspects of gaming such as aggression, addiction, and social isolation, rather than viewing it as an activity which forms an important part of many people's leisure lifestyles. This paper presents a very different image of gaming and gamers. It investigates computer gaming as a serious and competitive leisure activity. The paper looks at the gendered use and negotiation of leisure spaces by gamers in the context of the expansion of gaming into space and place outside the traditional domestic contexts and which blur boundaries between domestic and public leisure spaces. As such it assumes a perspective on computer gaming in which the activity is seen as part of the everyday leisure routines of gamers rather than a spectacular and notable stimulus or event. The paper argues that although certain aspects of computer gaming involve technological mediation and disembodiment, the changes in gaming texts and contexts have not radically improved the leisure constraints associated with gendered space and technologically-mediated activities. To this end, the paper draws on the existing gaming literature and preliminary ethnographic research of public competitive gaming

**Key words:** computer games, Internet, gendered space, leisure constraints, technology.

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## **Introduction**

Computer games<sup>2</sup> have now been taking up room in people's homes for over twenty-five years. The black and white block graphics of the tennis game Pong first made their way onto people's television sets in the mid-1970s and since then the fad for these games has turned into an industry worth almost \$6½ billion in the USA alone in 2001 (IDSA, 2002). Gaming technologies have evolved during the intervening period from the square ball being bounced between two rectangular bats to the near photo-realistic images which are based upon the real life movements and physics of humans and objects. However, the academic understanding of this leisure activity has, unfortunately, not developed at the same rate. While there is a small but significant body of work which has looked at computer games (some of which is reviewed below), there is still a tendency to place games and gaming within discourses associated with psychological and social well-being. Within these discourses games are still predominately understood in the literature as technological stimuli that produce measurable effects in the people exposed to them.

Investigations that attempt to place gaming within a broader social context are still very much in their infancy. This paper is an attempt to contribute to this emerging body of work. It seeks to reposition gaming within its social context by looking not at the games themselves, or effects that may be associated with them, but by looking at the social organisation of computer gaming, and the manner in which computer gaming is a gendered leisure activity.

In order to do this the paper first provides a macro level examination of developments in computer gaming as a popular leisure activity, arguing that the prevalence of computer gaming and the constitution of gaming communities (real, virtual and imagined) has often been radically underestimated in academic literatures. The growing organisation, and to a lesser extent professionalisation, of these communities has played an important part in the development of public gaming activities. The paper specifically examines the gendered use and negotiation of leisure spaces by gamers in the context of the expansion of gaming into space and place outside domestic contexts.

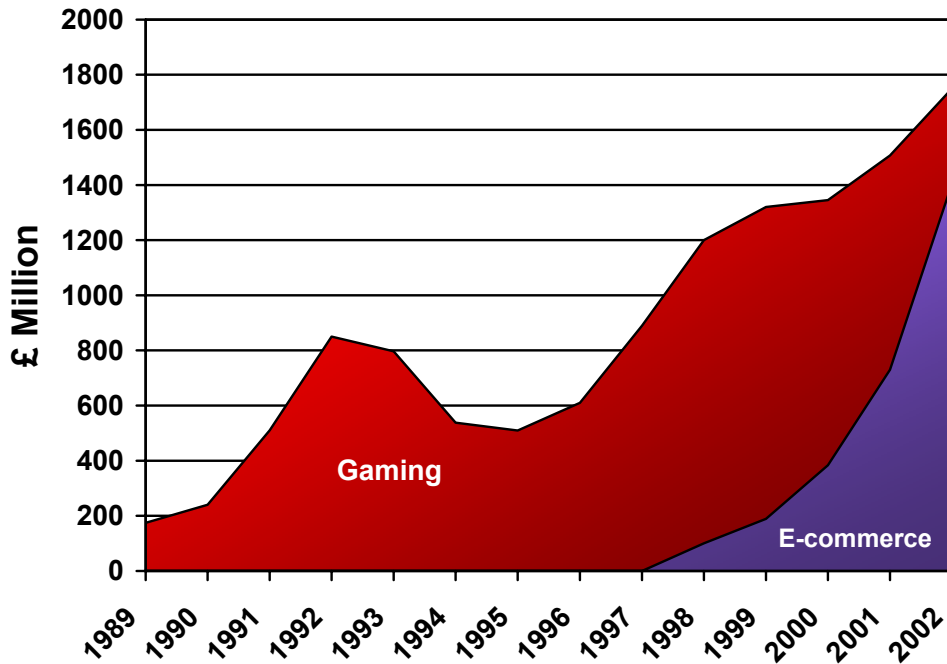
## **Computer gaming as a leisure activity**

Computer gaming as a contemporary leisure activity is undergoing a series of concurrent change: The increasing popularity of computer gaming, the multiplicity of platforms and gaming genres, changing social contexts of play, the expanded functionality of gaming consoles, and the integration of gaming technologies into devices such as mobile phone, digital television and digital organisers are all aspects of the transformation of gaming into a technology of mass, popular entertainment.

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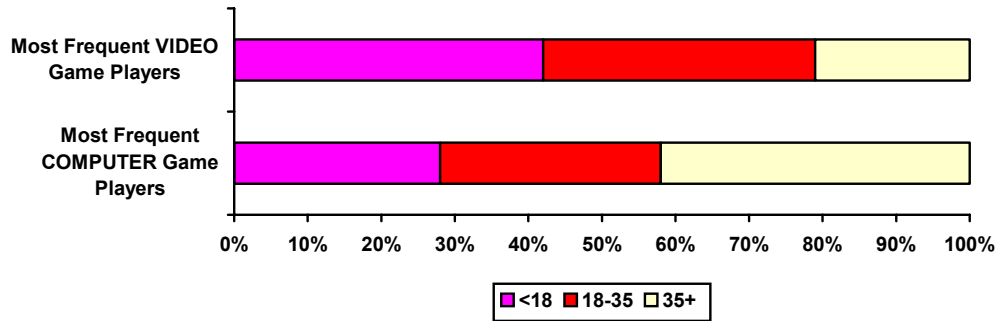
<sup>2</sup> In this paper we use the term "computer gaming" to cover gaming whether played upon a console, a digital TV, LCD display, a PC (or less commonly a Mac) or self-contained devices such as a Gameboy.

The actual size of the computer gaming market and its influence on routine leisure is often underestimated. It has been suggested that almost three quarters of people under 30 have played a computer game, and that the leisure software market is worth approximately £1.5 billion in the UK (Screen Digest/ELSPA, 2001). The size of this market can be usefully illustrated by comparing it to that for e-commerce. While business-to-consumer (B2C) e-commerce has recently been the focus of much media, academic and consultancy attention, the market is still worth considerably less than that for gaming, especially when considering that about 40% of all B2C e-commerce in the UK is purchase of computing hardware and software (McMeekin, Miles, Roy and Rutter, 1999)



**Figure 1: UK gaming and E-commerce markets**

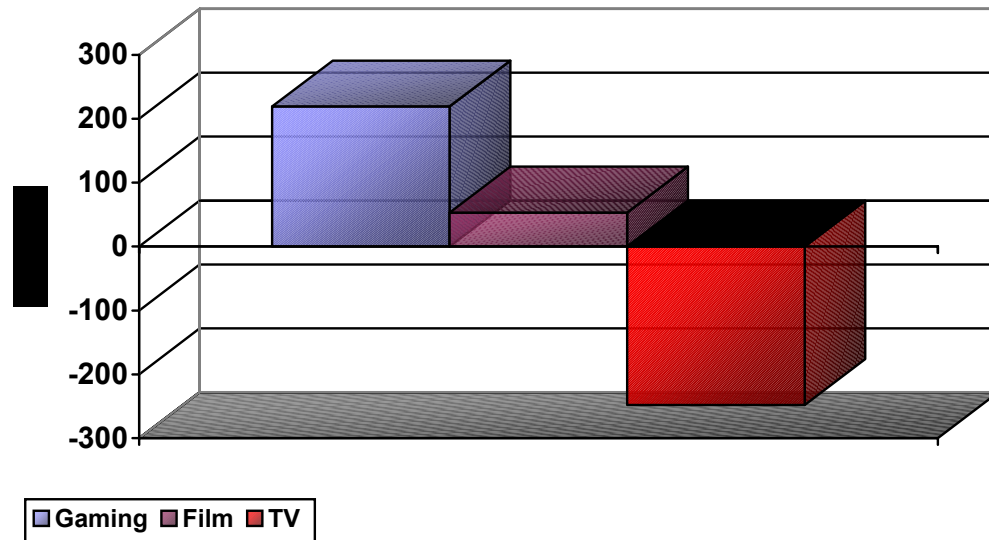
Such a market size obviously calls into question ideas about the range of people involved in computer gaming as a leisure activity. Although the well-worn, and empirically unsustainable, stereotype of solitary, male gamers continues to be prevalent, available figures on gamer demographics do not support this stereotypical view. Recent USA figures from the Interactive Digital Software Association (IDSA) suggest that 42% of computer gamers are over 35 (IDSA, 2001). As the gaming industry continues to mature, so does its audience.



**Figure 2: Age Group Comparison of Most Frequency Computer and video Game Players**

Source: IDSA, 2001

In the UK games industry games development is a significant industry as well as being notable in terms of revenue and consumption. According to the major gaming trade association the European Leisure Software Publishers Association (ELSPA), in 1998 leisure software earned more in exports than other entertainment media: It totalled £503 million compared with £427 million for TV and £444 million for film. Similarly, although leisure software exports rose from £192m in 1997 to £284m in 1998, imports also grew and the balance of trade for 1998 stood at £219m. This compares with the UK film industry that generated a surplus of £53 million while TV recorded a deficit of £248 million.



**Figure 3: UK Balance of Trade for Entertainment: 1998**

Given that the size of the market roughly indicates the popularity of the activity, there is a need to examine the motivation for playing computer games and becoming part of

the associated culture. Griffiths and Hunt (1995) investigated the frequency of game play and motivations for beginning and maintaining gameplay in a sample of 383 twelve to sixteen year olds. The results suggested that 31% of the sample played computer games everyday and that 33% played for 1-2 hours per day, with 18% playing 2-3 hours. In terms of motivation, 31% began playing computer games with friends, and 75% of the sample cited fun as the main reason for playing. These figures are comparable with other studies examining similar age groups (e.g., Funk, 1993; Griffiths, 1997; Colwell, Grady and Rhaiti, 1995; Buchanan and Funk, 1996), which report similar average hours played per week and motivations for playing.

The increasing popularity of computer gaming during the 1980s and 90s led to a rise in concerns by academics, parents and governments about the consequences of computer gaming. Along with rock music, attempts have been made in the USA to link computer gaming with adolescent gun crimes such as the Columbine massacre as moves are made to attempt to regulate young people's leisure activities both through legal and commercial pressure. These concerns, and the research which has attempted to address them, has focused on the following areas; the physical effects of the use of technology itself, and the effects of lack of physical exercise and addiction in those spending significant amounts of leisure time playing computer games (Spence, 1993; Griffiths, 1997; Maeda, *et al.*, 1990). Further, concerns have also been raised over the educational consequences of over reliance on computer gaming as a leisure activity, although the claim that children and young adults who spend a significant amount of their leisure time playing computer games may truant, neglect homework and generally be less interested in their education is largely unsubstantiated (Griffiths, 1997; Creasey and Myers, 1986). The main focus of research, however, relates to concerns over the negative psychological consequences of computer gaming such as addiction, social isolation, and the encouragement of violent and aggressive behaviour. Research in this area generally takes one of two opposing theoretical perspectives on the psychological consequences of computer gaming; 'catharsis' (Fesbach and Singer, 1971) or 'social learning theory' (Bandura, 1986). Catharsis theory (Fesbach and Singer, 1971) states that computer games can be used to release aggressive or violent impulses. Social learning theory (Bandura, 1986) takes the opposing view, that computer games lead to the modelling of the violent and aggressive behaviour represented in computer games in real life. Research on the negative psychological consequences of computer games have generally used three methodological designs; observational studies (e.g. Irwin and Gross 1995), self-report studies (e.g. Griffiths and Hunt, 1995), and experimental studies (e.g. Anderson and Morrow, 1995). Each of these approaches has subsequently been criticized (see Griffiths, 1997) and their focus on different methodologies and age groups make drawing substantive conclusions regarding causality difficult (see Griffiths, 1999 and Dill and Dill, 1998 for a greater discussion of the theoretical, methodological and statistical limitations of research).

As such, the focus of previous research on the psychological consequences of gaming stands out in stark contrast to the variety of social networks and technological innovations which have developed around computer gaming, and academic writing from the perspective of media and cultural studies. There is still a lack of research on computer gaming which goes beyond textual analysis and draws upon contemporary

cultural studies (e.g. Hermes, 1995; Miller and McHoul, 1998), audience research (Lull, 1990; Moores, 1993, 2000) or the sociology of consumption (e.g. Warde and Martens, 2000, Harvey *et al.*2001).

Hence we can see that the relationship between computer gaming, psychological development and leisure practice is complex, and mediated by a variety of different factors such as game genre and content, age of gamer, and motivation for participation. Previous research on computer gaming has been criticised in relation to the failure to recognise the diversity of games, gamers and gaming contexts. Gaming now occurs in private and public spaces, as well as over networks – the biggest of which is the Internet. Differences between play in these contexts is likely to influence the leisure experience of gaming.

The increasing popularity of computer games, and the brief review of the gaming literature, provided here demonstrates the need to investigate computer gaming from a broader perspective. As this leisure activity develops and is experienced in many different leisure contexts, it is useful to examine how an understanding of computer gaming may be enhanced in respect of themes in the leisure literature. The specific issues to be considered in the rest of this paper are:

- How an examination of computer gaming in relation to gender as a leisure constraint can further the understanding of the dynamics of computer gaming.
- The extent to which computer gaming can be considered a social activity.
- The developing diversity of gaming contexts and game spaces as ‘new’ technologically mediated leisure spaces (virtual, physical and temporary).
- The influence of diversity of gaming contexts on the blurring of boundaries traditionally discussed in leisure research; e.g., domestic-commercial leisure spaces, public-private leisure spaces, producer and consumers of leisure.

## **Computer gaming and gender**

Previous research has investigated the way in which various factors or leisure constraints influence an individual’s ability to gain access to, and participate in, desired leisure activities. Leisure constraints have formally been defined as ‘anything that inhibits people’s ability to participate in leisure activities, to spend more time doing so, to take advantage of leisure services, or to achieve desired levels of satisfaction’ (Jackson, 1988). Commonly identified leisure constraints are gender, race, income, class and health status (Shaw, 1994).

It has been particularly claimed that females of all ages are disadvantaged in their leisure choices and activities by constraints such as time, income, class, marital and parental status (Samuel, 1996). This has led to an examination of how gender influences access to, and participation in, leisure spaces and activities (Henderson, 1990; Shaw, 1994). Research has investigated the ways in which males and females differ in their preference for various leisure activities, their access to leisure, and how males control women’s’ access to leisure (Deem, 1986, 1992; Bella, 1989;

Henderson, 1990; Shaw, 1994). Further, the ways in which gender constrains women's leisure has also been examined in relation to participation in technologically mediated leisure activities such as internet use and computer gaming (Schumacher and Morahan, 2001; Bannert and Arbinger, 1996). It has been frequently claimed both anecdotally, through estimations of consumption of games and hardware, and in academic research that computer gaming is a more popular leisure activity for males than females (Buchanan and Funk, 1996; Colwell, Grady and Rhaiti, 1995; Griffiths and Hunt, 1995).

Although boys and male adolescents appear to be more frequent gamers, even those studies from the early and mid 1990s suggest that a large percentage of females of a comparable age range report playing computer games with friends and family for approximately 1-2 hours a week. For example, Funk (1993) found that 75% of females, compared with 90% of males played computer games in the home. Colwell *et al.*, 2000 provide evidence that 88% of those 12-14 year old females surveyed played computer games on a regular basis. Such findings have been explained in terms of gendered preferences for different game genres, and there is evidence that males and females prefer different types of game (Mehrabian and Wixen, 1986; Barnet, Vitaglione *et al.*, 1997; Yates and Littleton, 1999).

Various explanations have been advanced to explain this apparent difference in the popularity of computer gaming between males and females. Within this two strands of argument can be discerned: game content and gaming contexts. Obviously aspects of these are interlinked in complex ways and generally relate to social gender dynamics and the manner in which these influence the production and consumption of contemporary leisure activities.

The first strand of argument relating to the lack of female participation in computer gaming relates to the nature of the games themselves. It has been claimed that games are gendered in such a way as to make them uninteresting and/or offensive to females. Such arguments point to the violent content and generally 'male' themes of games (Kafai, 1996; Dietz, 1998), and evidence that males show greater preference for games with a violent theme (Buchanan and Funk, 1996; Colwell, Grady and Rhaiti, 1995). These explanations claim that the gendered nature of computer games prevent females from identifying with game characters, goals and settings. It has also been claimed that the lack of female characters in games, and the stereotypical and sexualised portrayal of those female characters which are included is another factor explaining the lack of popularity of computer gaming as leisure activity among females (Greenfeld, 1996; Kafai, 1996; Dietz, 1998). These explanations tend to focus on gendered aspects of computer games as produced by males, for a male audience, and incorporate themes recognisably 'male'.

It has been claimed that the increasing sophistication of graphics, narrative and game play in contemporary games allows greater immersion in the game environment and involvement in the game space. Game spaces are essentially expanded and more complex game or leisure environments which support multiplayer and competitive gaming, highlighting the use of the internet for online gaming and competitive multiplayer gaming. (See below for further discussion of gaming spaces.) Games

developers have also become increasingly sensitive to claims regarding the stereotypical portrayal of women in computer games and the lack of female characters, and many contemporary games allow the choice between a number of male and female characters. But it remains to be seen whether adding more female characters will encourage character identification and increase female participation in gaming.<sup>3</sup>

It has also been claimed that the contexts in which gaming occurs are gendered in such way as to prevent female access to the technology, and communicate the view that gaming spaces are male spaces.

The lack of popularity of computer gaming in females has also been discussed in relation to access to technology, gender role identity and socialisation, and the gendering of particular leisure experiences and activities (Greenfield and Jenkins, 1998). There is evidence that due to societal notions of masculinity and femininity, and gender socialisation, females are more affiliative and prefer more social leisure activities (Grusec and Lytton, 1988). This suggests that females simply are less interested in computer gaming and the types of leisure experiences they provide (Cassells and Jenkins, 1998), consistent with the stereotypical view of computer gamers as adolescent males, lacking in social skills.

It is important to recognise that much of the empirical research on which these claims are based was conducted during the 1980s or early 1990s, and it is possible to claim that they take an overly simplistic view of the dynamics of gender in contemporary society, and the increasingly diverse experience of computer gaming as a leisure activity.

Technological innovations in both the hardware and software associated with computer gaming mean that earlier theoretical and empirical examinations of computer gaming in general, and of gender in particular, may not be applicable to contemporary gaming experiences. Technical developments such as those in hardware, graphics, processor power and the increasing interactivity of games have changed the dynamics of play and the contexts in which gaming takes place. This highlights the need to re-examine the arguments made in relation to the gendering of games themselves and the contexts in which gaming takes place in relation to the experience of gaming in contemporary society.

The view that female gamers are not interested in games with a violent content, or with recognisably male themes has been challenged by female gamers themselves. The tension between the 'girl gamers' and 'grrl gamers' is highlighted by Cassell and Jenkins (1998). It has been claimed that developing games which are targeted towards female markets is the best way to encourage girls to participate in computer gaming. However, this view has been challenged by some girl gamers who have challenged this view, suggesting that there are many female gamers who have similar game

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<sup>3</sup> For most games developers and publishers this inclusion of female characters and narratives is done as an attempt to expand potential market rather than through political reasons. Purple Moon is one company which stands as a counter example.

preferences and involvement in gaming as males. This is consistent with the declining differentiation between so-called ‘male’ and ‘female’ leisure activities, and whilst this may be met by stereotypical responses by males, this does not appear to be preventing females engaging in leisure activities that have been traditionally considered to be male, particularly in sports such as football and rugby. It would appear that the increasing popularity of computer gaming among females is characteristic of a decline in the gendering of certain leisure activities. This is consistent with recent critique of the notion of leisure constraints as static and enable to be challenged or resisted (Jackson, Crawford and Godbey, 1993), and the view that leisure spaces may act as sites for negotiation and resistance to dominant cultural stereotypes of the gendering of leisure activities and gender-appropriate behaviour (e.g., Wearing, 1998).

Further explanation for the increasing popularity of gaming amongst females can be found in the idea of oppositional readings and productive consumption of texts. Since the work of The Birmingham Centre for Study of Contemporary Cultural Studies in the 1980s (e.g., Morley, 1980) there has been little doubt that audiences for popular culture texts have demonstrated a variety of ways of understanding texts. Fiske (1989a, 1989b) has demonstrated how people can adopt texts in a fashion which does not necessarily follow those intended in any authorial intention, demonstrating active play with power and culture. Other cultural studies orientated research has explored the relationship between consumption of texts and the production of meaning and new texts (e.g., Ang, 1982; Radway, 1987; Jenkins, 1992; Stacey, 1994; Abercrombie and Longhurst, 1998). As such there has been little real doubt about the active nature of media audiences, including TV and film. Given this it is not unreasonable to hypothesise that not only are grrrl gamers playing games in a “masculine” fashion, but female gamers are finding gaming an attractive leisure activity because they bring with it their own readings of the gaming texts.

Although work which looks at computer gamers through the gamer’s perspective is still lacking work done by Yates and Littleton (1999) has drawn on some of the above literature. Their research supports this view, with female interviewees using games strategy management tools and taking non-voyeuristic perspectives on the hyper-voluptuous Lara Croft. Although such work is still in its infancy in the area of leisure and computer gaming, it takes a context-orientated approach to investigating computer games and focuses on the experience of gaming, rather than the consequences (see also Bryce and Higgins, 2000). Such research highlights the need to investigate the social significance of computer gaming from the perspective of gamers themselves (Barnett, Vitaglione *et al.*, 1997; Yates and Littleton, 1999). This allows an examination of the social construction of computer gaming, and gamers’ definitions of and engagement with games in the context of their social lives and leisure practices. Such an approach can also provide useful perspectives on other individual gaming contexts, as well as the gender dynamics of gaming.

### **Public gaming contexts: gendered gaming contexts**

As we have seen from above, the claim that females do not play computer games, or are uninterested in the themes of computer games may represent a simplistic

examination of gender dynamics in providing access to gaming contexts. Following the cultural and leisure studies lead it is therefore useful to look at one aspect of gaming context: namely the places in which gaming takes place.

The history of sport and games has a history that significantly predates computer gaming. Games such as chess, cards, or dominos have been played in public as well as private spaces even when not undertaken as a competitive sport. Fairgrounds have routinely offered the chance to play variations of darts, quoits, or air rifle shooting as part of the spectacular leisure and consumption opportunities they provide. Similarly, as well as traditional English pub games such as cribbage, dominos, bagatelle, and skittles/ninepins, pubs have become sites in which pinball machines and arcade games such as Space Invaders have been located. The rise of arcade games during the 1970s from SPACE in 1971 to Space Invaders in 1978, PacMan in 1980 and beyond to current machines has maintained a public space for computer games in bars, fast food restaurants, motorway services stations, fairs, arcades etc.<sup>4</sup>

Not surprisingly these gaming sites tend to be highly gendered and patriarchal spaces (Hey, 1984). Differences in participation in computer gaming in private and public contexts may explain the invisibility of female gaming. It is possible to claim that public gaming contexts are male dominated and gendered. There was evidence of this from observations of the UK Console Championships (UKCC) and I-Series LAN (Local Area Network) parties.

The UKCC was a national gaming competition held in association with the Daily Mirror, supported by Official Dreamcast Magazine, Official UK Playstation Magazine, N64 Magazine and organised by London gaming company, The Playing Fields. It was the UK's first national console event to encompass all three of the current major consoles; with 64 gamers competing on each console Playstation, Nintendo 64 and Dreamcast.

LAN parties are weekend events at which gamers congregate to play online via hosted servers in tournaments for a variety of games. Competitions, particularly clan or team tournaments are an important feature of these events, but the social aspect of these events such as meeting other gamers, and being in face-to-face contact with people who are familiar in online gaming contexts are also important aspects of these events.

Male participants dominated these events. The majority of females who did attend appeared to fit into acceptable non-gamers roles. Mothers accompanied their sons to the competition, alternately sitting around looking bored or offering support and encouragement to their sons. Other females played the role of 'cheerleader',

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<sup>4</sup> Besides location the significant difference between these two loci of innovation has been that machines that ran games such as Pong, Donkey Kong, Doom or Black and White have belonged to those who played the games. The development of domestic and public computer gaming technology has provided the ability for gamers to use their own computer hardware (or hardware identical to it) in order to play against other in public environments. As women tend not to buy gaming hardware and software less often than male gamers they again become invisible as they are not economically active.

girlfriends who provided support and encouragement to the male competitors they accompanied. This is consistent with ethnographic observations of the gender dynamics in video game arcades (Griffiths, 1993).

Though there is a high level of invisibility of female gamers at public gaming events, it is our contention that this does not truly reflect females' domestic participation in computer gaming, and the previously cited research supports this view. There is anecdotal evidence that many females participate in gaming within the family context, with friends, families and boyfriends etc., as well as some evidence in the previously cited studies (e.g., Griffiths and Hunt, 1995; Buchanan and Funk, 1996) of the domestic and family context of computer gaming in general.

Computer games form part of joint leisure activities in existing social networks. Although there has been relatively little empirical research investigating the prevalence and motivations of computer gaming, there is evidence that shows a majority of computer gamers begin playing with family or friends (Griffiths and Hunt, 1995). This suggests that computer gaming forms part of many people's leisure activities, and it is likely that to a large extent the fun and enjoyment computer gaming is through the social interaction and competitive participation with friends and family which computer games provide. The importance of the social and affiliative function of leisure is well documented (See Iso-Ahola, 1997), and from this perspective it would seem that computer gaming provides similar social opportunities as other leisure activities.

Further, computer gaming provides the opportunity for the creation of new networks of social relationships between gamers. Online gaming and the communities which have developed around it have led to the development of clan groups, social networks and friendships which are based around sharing knowledge regarding technical and game skills. There has been little consideration of the development of new social relationships around gaming, but the development of these social networks is also consistent with the importance of the affiliative functions of leisure.

This invisibility of female gaming may also be reflected by a more casual commitment to gaming as a leisure activity, and also reflect the lower numbers of females who are frequent consumers or purchasers of gaming hardware and software. There is also increasing evidence of the popularity of online gaming among girls, which may be related to anonymity and reduced stereotypical behaviour towards female gamers in online contexts. This demonstrates the need to consider how differences between private and public leisure spaces may influence the apparent popularity of any given leisure activity in young females and women.

It may be that comparative studies of the frequency of gaming in males and females are compounding the invisibility of female gaming, which may be largely private and occur within the family context where males and females of varying ages actually play computer games together. The lack of females participating in public and competitive contexts may be explained by self-consciousness and lack of confidence in competitive ability because of the stereotypical view that computer gaming is a male leisure activity. This is likely to be compounded by stereotypical reactions

towards girl gamers from male competitors. So whilst there is evidence that gender may not be a significant leisure constraint in private gaming contexts, it appears that stereotypical views of gamers may act as a psychological constraint against female participation in public gaming contexts.

The research studies reviewed earlier suggest that a high percentage of adolescent females play computer games regularly (e.g., Colwell *et al.*, 2000). This would suggest that whereas males dominate computers in competitive gaming and educational contexts, female gaming, like the leisure activities of many female children and adolescents, has tended to be in large part a 'bedroom culture' (McRobbie and Garber, 1976; McRobbie, 1991; Livingstone and Bovill, 2001) as more homes had television sets, and later PCs, in children's rooms. According to Livingstone and Bovill two thirds of children in European households have a television in their bedroom; 53% have access to a PC in their homes which provides an indication and 72% of working-class families have a games console.<sup>5</sup> Children and young people have during the last twenty or so years developed leisure routines which increasingly involved spending time in their own domestic space interacting with technology. This leisure culture is one that is potentially very fragmented, and like music and fandom (Frith, 1978), computer games offer a method of bridging that isolation both in the real sense of offering a shared topic of conversation in face-to-face meetings but also as part of a larger "imagined community" (Anderson, 1991).

This cultural and social fragmentation has reinforced the stereotype of computer gamers as adolescent male 'nerds' with poor social skills who prefer the company of technology rather than other people, even though this has been strongly challenged by the expansion of gaming into a form of mass entertainment in contemporary society.

As such there can be seen an unequal transition of leisure spaces evolving. Despite the fact that male computer gaming has increasingly taken place in the living room, bedroom and other areas of the domestic space, there is little evidence to suggest that female gaming is moving into public spaces in the same manner. What has been seen as female space – namely the home – is becoming a site of male leisure activities while gendered public spaces – such as those found at UKCC and LAN parties – is still proving largely inaccessible to women.

However, the expanded functionality of the new generation of consoles (e.g., Dreamcast, PlayStation 2 and the Xbox) are now bringing the technological capabilities for internet access and online gaming into domestic leisure spaces without the requirement of PC access. This has facilitated the expansion of computer gaming as a contemporary leisure activity to an increasing audience as more gamers than ever before are able to play across the Internet and become part of online gaming communities. This is reflected in the large increase in online gaming in the last few years.

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<sup>5</sup> The class-orientated aspects of gaming are apparent when noting that middle-class families are less likely to own a games console (61% own a device such as a PlayStation, N64, Dreamcast etc.) than those in the working class. This compares to 46% ownership of a multimedia computer in middle class households and just 19% in working class families. (Livingstone and Bovill, 2001)

Online gaming provides the opportunity to compete against people without the constraints of geographical location, and allows the formation of social networks based around the skills, technical knowledge and the game preferences of different groups of gamers. The Internet offer gamers a different way of negotiating their own leisure spaces and potentially transforms the bedroom culture associated with gaming. The ability to play computer games between people who are not co-present has moved from the realms of IT labs and computer hobbyists into the mainstream. For example, IDC (2000) have estimated that during December 2000, almost 24 million Americans (approx 28% of Internet users) visited game-orientated web sites (this compares with 2.4 million UK users), and they predict that 40 million US households will be playing games online by 2004. The “Which? Annual Internet Survey 2001” estimates that currently 36% (approx 16 million) of people in Britain have accessed the Internet. (Which? 2001)<sup>6</sup>

Given the twenty five year history of computer games as leisure activity, it is difficult to claim that game environments are a new leisure spaces. However, third places are now beginning to open up to computer gamers which offer new leisure opportunities. There is evidence that online gaming is becoming particularly popular with female gamers as the anonymity of online gaming provides a context for competitive gaming against male opponents free from the constraints of stereotypical attitudes and assessments of the abilities of female gamers which are often reported in face to face gaming contexts (PC Data – reported at [http://cnfn.com/2000/12/14/technology/gaming/.](http://cnfn.com/2000/12/14/technology/gaming/))

There has been some consideration of the blurring between different leisure spaces through leisure-related computer use in the home (Bryce, 2001). The experience of contemporary leisure spaces as multiple and simultaneous is illustrated by the advent of e-commerce – online shopping. This not only facilitates the management of rescheduling of time – most grocery shopping is still done by female members of a household – but allows activities which usually involve entering public spaces to be done whilst in a domestic one (Rutter and Southerton, 2000).

From this perspective, simultaneous immersion in public and private leisure spaces is also possible through online gaming. All of these boundaries are becoming increasingly blurred as PC, gaming, digital television and mobile phone technology allow commercial and business transactions to take place in the home. Online gaming allows competitive leisure activity in the domestic context, and this has implications for the spatial organisation of leisure, as this represents the blurring of geographical space and game space. In these situations gaming is neither entirely domestic nor entirely public as it occurs in virtual space (See Bryce and Rutter 2001, for a discussion and taxonomy of ‘presence’ in gaming). Competitive gaming may take in virtual online contexts in which gamers compete against opponents in the same virtual game space whilst they may, in reality, be located in geographically diverse locations.

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<sup>6</sup> This intention here is to demonstrate size and growth of Internet use and online gaming, the authors have no intention of minimising the importance of the economic class, ethnicity, gender, age and other factors will still have real influence on access and use to new technologies and the service they offer.

In Local Area Networks (LANs) gaming, competitors often inhabit the same virtual space and geographical space. The virtual game spaces created by online and LAN gaming are a development of game space but this is an evolution of the early game space created by games like Pong and Myst. The competitive aspect of these spaces makes them similar to other competitive leisure spaces such as football fields, athletic tracks etc. (and the UKCC and LAN parties described above) with the distinguishing aspects being that not only is the competitive nature of gaming mediated by computer and network technology, but so too is the community and geographical space.

## Conclusions

Computer gaming appears to have similar psychological dimensions to other leisure activities, and compares favourably with the experience of a variety of sporting activities. It appears that gaming forms part of a varied leisure lifestyle for many adolescents and young adults. Therefore examining gaming can add to understanding the dynamics of contemporary leisure activities and experiences. Previous research and ethnographic observations of public gaming events, such as the UKCC Championships, suggest that gaming is an increasingly social, yet male dominated, activity. Various explanations for this apparent gender-bias have been examined and the need for critical evaluation of the gendered assumptions underlying explanations for lack of female participation in gaming highlighted. Despite the accepted view of gaming as a male leisure activity, particularly in public leisure spaces, there is evidence that online and private gaming is not as male dominated as previous research suggests. It has been suggested that increasing female participation in computer gaming may be part of wider change in the gender stereotyping of leisure activities. As with traditional sport, computer gaming may represent a leisure context in which resistance and renegotiation of gender stereotypes can occur. This paper has also investigated the spatial organisation of gaming and the blurring of boundaries between private and public leisure spaces, both in relation to the gendered nature of gaming, and in wider contexts of how this influences the experience of gaming as a leisure activity. The development of multiple contexts for computer gaming also highlights the increasingly social nature of gaming, which has been facilitated by greater technological sophistication of gaming technology. This diversity of gaming contexts, and the social aspects of gaming, suggests the need for continued research on the leisure-related aspects of computer gaming, and how these change in accordance with technological innovation, increasing diversity among gaming contexts, game genres, and gamers themselves. This diversity has implications for the experience and consequences of computer gaming as a popular, technologically-mediated leisure activity.

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