



# Representing Users in the Design of Digital Games

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## Abstract

*While economic and sociological studies have generally recognised the important explicit role that users play in shaping a technological artefact – through feedback channels after launch and market trials and studies before launch – there has been less exploration into the more implicit strategies by which designers attempt to pre-figure users prior to launch. Given that design involves making choices, and framing the choices made by users, this paper suggests that Madeline Akrich's approach (1992, 1995) may provide a constructive tool for exploring more implicit strategies of representing users in the early stages of the design process. It may also prove useful in exploring how users can be excluded or alienated through design. While acknowledging that users may actively negotiate designers' representations this paper will explore the usefulness of the Akrich approach in relation to understanding the design of digital games. A study in 2001 of production in digital games companies in Ireland found that various macro, meso and micro level factors play a role in limiting the games developed and the user groups developed for. This paper will present findings from ongoing research conducted in 2002 into the reasons why and how one start-up company decided to design a multiplayer online game for males aged 25–40.*

## Keywords

*Design, games, innovation, gender*

## INTRODUCTION

A game must have a clearly defined goal, and it must be expressed in terms of the effect it will have on the player.... If you select a goal to satisfy your audience but not your own taste, you will surely produce an anaemic game. [10]

In this classic text on game design Crawford says that really powerful games come straight from the heart. In his description of the game design sequence players are not mentioned once and he suggests that playtesters should be game designers and not players who make 'lousy critics' [11]. He goes on to doubt that any good film, book or song was created through market research and that such methods would only prove useful to designers of limited talents. A quick scan through the index of the book finds no entries for users, usability, playability or accessibility.

Reflecting the growing maturity of the digital game design industry a more up-to-date computer game design book takes Crawford's advice, eliminates the contentious language and gives some consideration to the target market.

Suomela  
& al:  
Augmented  
Reality for a  
Casual User

A game must have a clearly defined goal, most often stated as to how it will affect the player. The goal must establish the visions, emotions and challenges it will produce in the player.... The designer needs to identify the genre and target audience for a game as well. These questions guide every level of game creation. [21]

These books suggest that digital game design for the PC or console markets is largely an intuitive process and new game concepts are developed with little input from players other than the designers themselves. While the more recent game design books place increasing emphasis on the need for a strong user interface there is little expectation that end users can or should be involved in the design process. Contrast this loosely intuitive, supplier-driven approach to design with the approach presented in European programmes like IST 2002, which highlight the importance of user-centred design and design for all [7] and writers within the computer science and web design fields who argue that human factors and usability must be considered by designers [31]. Jacob Nielsen believes that,

the main goal of most web projects should be to make it easy for customers to perform useful tasks. I describe a very systematic approach to web design, with a sequence of methods anybody can use to discover user's needs and any difficulties they may be having using the site. Treating a web project as a software development project will make it easier to meet schedules and to ensure the quality of the site [27].

On the one hand there are those who believe design is an art, which relies on the designer's vision, i.e. supplier driven, and on the other those who believe design is a science which relies on market research and user surveys i.e. consumer driven. This paper proposes that the impression presented by these books is too simplistic and in addition may need to be altered to take account of the specificities of designing persistent online games.

The paper firstly explores theories which present a more complex understanding of design, the different roles that users can play in the process and its relationship with gender. It goes on to examine the range of factors which have influenced digital game design in a start-up Irish company designing an online strategy game for male users aged 25-40. It argues that

micro design efforts must be viewed in relation to wider structural factors and historically constructed discourses. It also argues that in order to understand the social construction of gender in digital games we need to explore how these wider societal structures interact with agency at a micro level.

## GENERAL THEORIES ABOUT DESIGN AND THE ROLE OF USERS IN DESIGN

The industrial innovation, sociology of science and technology and media history literature are a rich source of information on the range of factors influencing the industrial and consumer innovation process. In this paper design is seen as synonymous with innovation, i.e. the act of getting a new process or product to the market and the related organisational, knowledge, social and other changes associated with this process. Design is fundamentally a process involving both change and continuity and having both intended and unintended consequences. To investigate design is also to investigate the relationship between structure and agency in society and the degree of freedom which individuals have to act within a wider set of relationships.

The literature demonstrates that the process of design varies from firm to firm – from large firm to small firm, from start-up to mature firm – and from innovation to innovation – some may be quite radical while others may be simply incremental innovations around an existing design. Further, innovations vary in terms of their degree of flexibility. In nearly all sectors the design process is risky and uncertain and there are numerous external and non-market factors which a firm cannot control including government regulations, standards, public policy, consumer pressure and cultural values [18].

Design is not only about production but is also fundamentally tied to consumption or use. What is particularly striking about the literature on innovation is that while on the one hand there is an overwhelming consensus that an innovation which does not take into account its target market will fail, there are equally as many empirical studies which show that companies often fail to take into account user needs or having conducted market research, usability studies and market trials their innovations still failed because they were unable or unwilling to take account of the results [7, 25, 38, 40]. A recent collection of papers on the role of users in innovation notes:

but it will not be successful (and innovations can be successes or failures) if there is no demand for it – if users do not want it. Understanding user needs was identified in early studies of innovation as an important success factor, and it is one of the justifications for market research. . . . Some entrepreneurs find out what users want, or do not want, only when their innovation fails, or when customers complain or send it back. Some innovations are commercialised by entrepreneurs who say they ‘just know’ what the market wants; or who make assumptions about customers’ needs (on the basis, for example, that the market is made up of people like themselves. [7]

A common theme emerging from this work is that while designers may try to design for certain ideal users this design process is often based upon partial or indeed mis-information about end users. Silverstone and Haddon point out that designers' knowledge of users is often tacit, contradictory and untested and in this uncertain environment organisational cultures and powerful sub-groups can compete to determine design [34]. Woolgar points out that even when explicit attempts are made to gain knowledge about end users, as in usability trials, this information may not be useful or may not be used to inform the design process if other agendas are deemed more important [40]. The Social Learning in Multimedia project (1996-1999) found that the eventual uses of products are often far removed from what the designer's intended and even when explicit experiments are invoked – from pilots, and feasibility studies to trials – the design of new media products remains experimental and racked with uncertainties.<sup>1</sup> Others argue that consumers are only likely to get involved in the later stages of the innovation process, particularly if the innovation is radical. Cawson et al [5] found that in large consumer electric firms ideas for innovations were more likely to emerge from technical staff rather than from market research or other departments. Oudshoorn et al. in their study of public and private multimedia design found that the design process was driven by organisational and technological factors more than the needs of end users, and the designers considered themselves as adequate models for end users [29].

For some researchers design involves configuring the user in terms of setting limits and boundaries on user actions. For Steve Woolgar a new technology is interpretively flexible, i.e. there are many different possibilities in terms of design. For him the development of a new technology can be usefully analysed through the metaphor of the machine as text [40]. Design for him is about the construction of this text (writing) and its use (reading). The text therefore mediates in the relationship between the reader and the writer and this ascription of a role to the technology is important. Of further importance is his assertion that only certain readings are possible and that these readings are made available by certain associations in the text. Design is a process of configuring the user and defining boundaries between the company, the user and the machine: a process which is often based on incomplete, tacit and contradictory information about end users. It is a process of negotiating hardware and software characteristics in relation to an ideal or real user, the designer's intentions, the functional characteristics of the machine/software and differing organisational requirements. In later writings he suggests that while the relations and conceptions embodied in technologies in general are fairly durable, the relations and conceptions embodied in software are often more malleable [8].

[T]he emergence of a new range of microcomputers crucially entails the definition, delineation and emergence of 'The User'. We could say that this process amounts to the (social) construction of the user. ... [A]long with negotiation over who the user might be, comes a set of design (and other) activities which attempt to define

and delimit the user's possible actions. ... [T]he evolving machine effectively attempts to configure the user. [40]

Conceptualising technology as 'text' borrows a key concept from media studies and serves to highlight the human/social construction of a technology and its flexibility – the term text comes from the root meaning to weave [28]. Media studies is particularly concerned with how meaning is constructed in a text and draws upon key concepts developed within semiotics, a field of study which developed within linguistics in the early part of the 20th century, to analyse the structures of meaning underlying a text. Since the 1980s audience and ethnographic research have expanded our understanding of how meaning is re-constructed by audiences and has shown how reading should be understood as a process of interpretation which is structured by social class, gender, ethnicity, space and generation [17]. Given the findings of such research there has been a re-evaluation of the power of the media in relation to the audience, a questioning of methods which rely on the researcher's subjective interpretation of a text and a move to understand users and contexts of use. Against this academic background Woolgar's conceptualisation of user configuration has been criticised by some researchers from media studies for denying the audience/user the agency which audience studies have shown they exhibit. Silverstone and Haddon [34] for example appear to suggest that Woolgar's conceptualisation of design as user *configuration* may be too deterministic. They see design as a process where the user is *imagined* rather than configured [5].

These theoretical battle lines highlight that the basic question for many sociologists of science and technology is how much power to ascribe to the designer and to the user in the design/consumption process and how best to study it. To complicate things further Woolgar's work suggests that it is important to understand the role of both human and non-human actors in the design process. In line with this view Akrich notes that even the most mundane technical objects are the product of 'diverse forces' and that technical objects participate in building networks of human and non-human elements[1]. In order to understand socio-technical change therefore we must study both the technical and the social. We must investigate how technologies constrain actants, the character of these technologies and the extent to which actants are able to reshape an object and how it is used.<sup>2</sup>

Both Akrich and Latour use a language adapted from semiotics [1, 18]. Design is seen as distributing skills, responsibilities and actions between the user, the technical object and other actants. Akrich [1] writes that designers anticipate and define the preferences, motives, tastes and competencies of potential users and inscribe these 'scripts' or 'scenarios' into the design of a new product. Thus the technical objects define a 'framework of action' within which actors are supposed to act. Akrich [2] asserts that,

innovators are from the very start constantly interested in their future users. They construct many different representations of these users, and objectify these representations in technical choices...the creation of successful artefacts depends

on the ability of innovators to generate user representations and integrate them into their designs. [2]

The mostly commonly used strategies identified by Akrich include explicit techniques like market surveys, consumer testing and feedback on experience and implicit techniques such as the I-methodology, experts and other products. Based on her research she concludes that implicit methods are often more powerful and important than explicit ones. For her the main challenge facing designers is how to coordinate and apply the information gathered and the main challenge for public authorities is to create mediators between innovators and end-users to enable new user representations to be considered where before they were excluded.

Aphra Kerr:  
Representing  
Users in  
the Design  
of Digital  
Games

## MORE SPECIFIC RESEARCH ON DESIGN AND GENDER

Oudshoorn et al. have explored the concepts of technology as text and user configuration in the design of two multimedia online services [29]. She argues that exploring macro/meso/micro dynamics helps to explain the inscription of certain representations of users in artefacts. However in one case she found that while the aim was to design for everyone in reality a male, technologically literate, and technologically fascinated, script was articulated. She found that the I-methodology, whereby designers are guided by their own taste and desires can lead to the development of a gender bias in design if the design team is all male.

Some research has indicated that masculinity is intimately linked with technological competence and performance; indeed some argue that technology, for historical and social reasons, has a male bias [6, 37: 137]. Research into masculinity and computer technology highlights the continuing importance of control and mastery of the technology as a source of power. Sherry Turkle's research argues that for computer hackers an ability to control the latest technology is an intense need [36]. Wacjman [37] argues that mastery and control not only bestows value amongst one's peers but more widely in society as well. Nevertheless she argues it is a value which is more available to men than to women and draws heavily upon a wide system of symbols and metaphors.

[N]o matter how masculinity is defined according to this ever adaptable ideology, it always constructs women as ill-suited to technological pursuits. [37]

Many studies have observed that most computer programmers and digital game designers are men and that this has an important influence on game design. For example, J.C. Herz notes that most designers are male and can't figure out what girls want and don't want [15]. Jenkins and Cassell argue that video games offer a prime site to analyse the social construction of gender [16]. In their work they investigate female representation; culturally in terms of characters in games and proportionally in game companies. They argue

it is important that women are represented in these two domains and not excluded from gaining access to technology fields and technology use.

[H]istorically gender was an unexploited category in video game design, with male designers developing games based on their own tastes and cultural assumptions without considering how these approaches might be anything other than gender neutral. Yet as feminist critics note, as long as masculinity remains the invisible norm, ... unselfconscious efforts are likely to simply perpetuate male dominance. [16]

Håpnes and Sørensen however argue that the empirical findings to support this theory are ambiguous [13]. They question the implicit understanding that gender is the dominant force in design, noting that in feminism and constructivism gender is not pre-given. Indeed there may be many forms of masculinity. In their study of computer hacker culture in Norway they found gender ambiguities and that hackers displayed both masculine and feminine qualities.

Work by McQuail would suggest that increasing the number of female game designers might not be enough [23]. He argues that simply influencing the proportional representation of women may not have any influence on the production of content if these women have been socialised into a wider male production culture. An organisational culture will often prioritise financial necessity and induce conformity to the traditional ways of producing content. McQuail also notes that external forces, organisational goals, professional standards and personal ambitions usually shape the personal views of, for example, a journalist. Wajcman would appear to agree.

[R]arely has the problem been identified as the way engineering has been conceived and taught. ... I share Cockburn's view that this reluctance 'to enter' is to do with the sex-stereotyped definition of technology as an activity appropriate for men. As with science, the very language of technology, its symbolism, is masculine. It is not simply a question of acquiring skills because these skills are embedded in a culture of masculinity that is largely coterminous with the culture of technology. Both in school and in the workplace this culture is incompatible with femininity. Therefore, to enter this world, to learn its language, women have first to forsake their femininity. [37]

Sandra Harding distinguishes three aspects of gender; gender symbolism, gender structure and individual gender [4, 14]. We have already examined work on the representation of women at a structural level and individual genders. However symbolism also plays an important role operating at the level of the object, at the level of the content or through associated marketing materials [5]. The symbolism surrounding and within digital games is therefore important to consider in relation to gender identity. There has been much discussion for example about the portrayal of women, gender bias and stereotyping in digital games and how this might contribute to wider socialisation processes [32, 35]. While the number of female characters in games has increased, the majority of these characters are still largely sexist and racist which acts to exclude female users. This is despite the best efforts

of entrepreneurial feminists and others to raise awareness of the issue [12, 16, 32, 33, 35, 41]. Research also points to the market success of androgynous games like *Tetris* and *The Sims*. As J.C. Herz points out:

Girls are looking for experiences, and boys are looking for bragging rights. ... the problem is, videogame designers being mostly male, can't seem to figure out what girls want in a videogame... catering to boys is much more fun. Videogame companies are very good at it and it makes them rich. And they don't want to mess with a winning formula. [15]

The historical context from which the designers and companies have emerged is also important. The social history of digital games from the large science research labs to pin-ball parlours and home PCs has played a part in gendering the technology, the games and game production as masculine [11, 19]. Indeed it has been argued by some that women use computer technology more as a tool than as a play-thing and only become comfortable with it when an activity renders the technology invisible [11, 33]. PC games and the publicity surrounding them exploit the advanced technological capabilities of both the system and the user. The lack of women in the games development field may stem from their lack of access to computer technology in their early years and the fact that both boys and girls tend to label computer technology as male from early on. Computer console, mobile and handheld games presuppose much less technological knowledge and have a much more balanced gender usage.

Aphra Kerr:  
Representing  
Users in  
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## MACRO AND MESO LEVEL FACTORS INFLUENCING DIGITAL GAME DESIGN IN IRELAND

As noted above historical, social, political and economic factors as well as industry specificities can have an influence on micro processes of innovation [39, 9, 30, 26, 24]. Thus it is important to understand the wider innovation environment in Ireland and trends in the games industry globally before we turn our attention to one particular company.

This section builds upon a previous survey of digital games companies in Ireland in 2001 and semi-structured interviews with 15 actors in this sector. This data indicated that both industry specific factors and nationally specific factors were important in relation to understanding design in different digital games sectors (PC, console, mobile, online). These factors included:

1. The power of publishers as funders and gateways into the global distribution chain
2. The role of console manufacturers in controlling technological change and the game design process.
3. The lack of appropriate labour available in Ireland.
4. The lack of capital resources available in Ireland.
5. The inadequacy of infrastructures in Ireland.





















