The Challenges of Designing a Gender-Aware Pervasive Game

Jon Back

Mobile Life, Stockholm University.

DSV, Forum 100

164 40 Kista, Sweden

jon@mobilelifecentre.org

Fani Athina Papadogoula

Mobile Life, Interactive Institute

DSV, Forum 100

164 40 Kista, Sweden

fapa@kth.se

Annika Waern

Mobile Life, Stockholm University.

DSV, Forum 100

164 40 Kista, Sweden

annikaw@dsv.su.se

Abstract

This paper describes our approach to designing a pervasive game with teenage girls as its main audience. In doing so, we are faced with two challenges: the challenge of gender-aware game design, and the challenge of integrating a pervasive game into the everyday lives of young women.

In this paper, we describe our core design goals and the rationale for these goals. Based on these goals, we outline the core design elements, and how these were recieved by a young women audience in a first player workshop.

Author Keywords

Gender-aware design; Game design; Pervasive Game

ACM Classification Keywords

H.5.m. Information interfaces and presentation: Miscellaneous.

General Terms

Design

Introduction

Computer game design has a deeply gendered design history [4]. Even today, when some subgenres such as casual games attract a fairly gender-balanced audience,

computer games are still, by and large, designed and developed by men [11]. Games designed in an environment where men dominate and set the agenda tend to reflect and reinforce such valuations that are normative for a male-dominated society. As discussed by Fron et al [10], game academics have to some extent accepted those values, and built into the scholarship the same valuations as persist in industry.

In this article, we describe our approach to designing a *pervasive* game for an audience of young women. Since pervasive games are meant to be played integrated with everyday life, a successful design is only possible if critical aspects of that everyday life are understood and incorporated into the design.

Our approach attempts to at the same time design a game that can attract a female audience (that is, designing a game that girls will like), and create a gender aware design for a female audience (that is, designing for what girls face in everyday situations). Our goal is to create an empowering and gender-aware but not necessarily norm-critical game.

Background
Designing Games for Women
Games provide an interesting way to challenge established gender norms, in that they often offer some opportunities for role-taking. Hence, games can allow the player to try out alternative roles, experimenting with alternative identities and new ways of performing gender. In practice, this has proven hard to achieve. The problems with creating a gender-aware game design may be illustrated by the two most common commercial approaches to designing for young women,

which we may label 'pink design' and 'gender-agnostic' design.

'Pink[1] design' uses themes and graphically 'cute' designs deliberately aimed towards girls. Such designs will at the same time rely on and produce a conforming discourse on femininity [3]. Examples are games about shopping or being a fashion model. An early example of the genre was the Barbie game ([4], ch8). The 'pink' approach does not aim to challenge the normative valuation of these female coded activities – the games are intended for girls and boys would not touch these games.

A second approach we may label as 'gender agnostic': these are games where the player can choose to play an male or female character, and non-player characters are cast in any role irrespective of gender. The player is cast as in the role of a warrior, and what the games value most highly is the player's skill in battle. As these games stay within the normative valuation of functional roles and activities, they challenge very little of a given heteronormative discourse - the female role performed is that of a man with breasts.

Pervasive Games
Pervasive games are played in the *ordinary world* [15]; they are not confined to the computer screen or to playing fields. Many studies of such games [2,17] show that players particularly appreciate the mixing of real life and game activity. Since the commercial break-through of GPS technology on mobile phones, there has

---

[1] The choice of term reflects both the fact that these games often make excessive use of the color, and a recent analysis of 'pink' as a dangerously gendered color and strong cultural marker [1].

been a surge of location-based pervasive games, played by moving around in the real world interacting with mobile devices.

While computer games typically are played as a break from ordinary life, pervasive game-play will typically be done as part of ordinary life. Hence, if you aim to design a pervasive game for a particular audience, you have to be careful to understand it's everyday practices in a way that is not necessary for computer games.

What girls face

As discussed above, our goal is to create a game that girls like without reinforcing culturally set ideas and gender stereotypes. In order to design a game that women can integrate with their everyday lives, we must also understand something of the daily lives of young women. Hence, we initiated our project by a literature overview on sociological and ethnographic work studying the lifestyle of young women.

Appearance and Attractivity
When girls enter puberty they change their behavior and adapt new interests, they focus more on their appearance and on attracting others' attention rather than on improvement of their personality by gaining knowledge and skills [13,22]. As a result, some young women become more uncertain about themselves and vulnerable to failure.

Uncertainty of Personal Identity & Peer Pressure
The focus on appearance leads to a situation where teen girls may become uncertain about their personal identity, want to compare their identity with others, as well as experiment with performing different identities [16]. Many discuss these problems with their friends or other girls, today often in blogs and forums. The understanding that such problems are common with their peers help young women to overcome this insecurity and find solutions. But this can also can lead to peer pressure, e.g. by appearance criticism that can increase uncertainty, anxiety and even cause depression [5,8,13,20].

Trust Issues
Many girls seem to have trust issues, especially with boys, often related to the fear of being manipulated or betrayed [21]. Social relationships within the age group are predominantly homosocial. Adolescent girls often prefer to silence themselves or be silenced in relationships rather than risk open conflict and disagreement.

Fear of the Outside World
Many girls see the outside world as a dangerous place, where women risk sexual (harassment, rape), social (comments, threats), and physical (violence) abuse [6,16]. This perception of the world restricts them to move in private and supervised public places, which can result in passive behavior, physical weakness and limited physical activity. While girls are restricted to private spaces and access public space primariy under supervision, boys move much more freely and unsupervised through public space.

Not Daring to Try with Technology
Most of the technologies that are designed for neutral gender tend to be the same as those designed for boys. As a result, girls feel less confident in gaining more knowledge on computers or participate in games. Whereas boys tend to take trial-and-error-approach to

mastering games and technology, girls often blame themselves for not understanding it [9, 14, 18].

Design Goals for 'Codename:Heroes'

In our project 'Codename:Heroes', we set out to design a pervasive game that could at the same time attract women participants and meet with what they face. In this section, we first outline what we aim to achieve, and then describe the core design ideas that grew out of these ambitions.

Our primary design goal is to design a game that address, and to some extent challenges, *what girls face*, without losing focus on *what girls like*. The key challenge is to construct an alternate way to perform identity as a woman, without ending up with either a 'pink' or a 'gender-blind' design. Hence, we looked at what young women tend to value in their lives, and built some of those valuations into the core design of the game.

Our key code word is *empowerment*: we seek a design that can (indirectly) challenge some of the issues that young women face in their everyday lives. In particular, we wished to address the spatial confinement of young women, encouraging players to appropriate spaces outside of home and school. We also wanted a game design that could offer performing a powerful identity. Our goal is to use role-playing as a tool to let players find themselves and create an alternative identity through this form of performative expression.

A difficult and important aspect of designing for what girls face is to develop a core game mechanics that is not male-coded. All games need to present some kind of intrinsic *challenge* to their players [19]. In multiplayer games, players can either collaborate to address a challenge set up by the game, or the challenge can be created by players competing against each other. Furthermore, a competition can take the form of a *fight* or a *race* [7]. In fights, players can interfere with each other's activities, whereas in races, players just interact with the environment and compete on their scores.

Women will often express a preference for social play mechanics ([4], chapter 8), and hence, we believe that the core game mechanics should emphasize collaboration. The competitive battle is on the other hand the most male-coded form of gaming, and a form we wanted to avoid. Hence, we strive to make any competition between players (or groups) to take the form of a race.

Core design elements

Superhero Thematic

We chose to work with the thematic of 'superheroes'. The design qualities we pick up from this theme is the concept of a hidden identity, which fits very well into a pervasive game design as it allows people to at the same time play the game and participate in daily life activities. Superhero myths are also very often myths of awakening; learning to understand and use your special powers. Hence, the myth structure fosters a sense of empowerment and building your strengths. Finally, superhero myths centre on teams of superheroes collaborating against an outside enemy - a thematic structure that fits well with a collaborative game-play structure.

Move Messages and Objects as Game Mechanics
The first game mechanics we settled upon was one of message passing. Players would use their mobile phones to carry secret messages, and get points for delivering them to their destination (a particular location), or passing them on to other players. Technically, we will use a combination of Bluetooth and GPS on mobile phones to implement the message passing function. In particular, Bluetooth will be used to keep track of when other players are close.

The secret message mechanics emphasizes collaboration, as picking up and passing messages are inherently collaborative acts. When players compete, it will be on scores made up by how many messages they have exchanged, or how far they have carried them. This is a race rather than a battle mechanic. Since messages will be picked up and passed on in the physical world, message passing encourages but does not require players to move out of their ordinary space (players may also just chose to carry messages that need to go in the direction where they regularly move). The message exchange was also deliberately designed as an anonymous meeting, so that players normally will not know whom they are exchanging messages with. This will create a feeling of 'Pronoia' ([15], chapter 6), a sense that you are not alone, which we believe will feel empowering.

Players will also create physical objects that relay super-power in the game, and pass them in a similar manner. The physical objects are designed to mimic the young girl behavior of gift giving, to support trust and friendship between individuals and within groups.

User Workshops
Currently, we are moving into user workshops of early prototypes of the game. Initial results are promising. We can see that with women players, teams play fair and try to help other teams even when they know that there is a competition. Players express that both a race-structured treasure hunt and a more collaborative message collecting activity are important for them. We also note a lack of interest for scores and points - gathering clues is more valuable. This is in concordance with earlier studies of women play preferences.

Combining collaborative and competitive play is also possible, and appreciated. In our first workshop, one of the the players expressed that all of them won the game together, but that the player scoring the highest would 'sit at the high end of the table', that is, gain internal prestige within the group.

An important observation was that players did not want to play alone. They would like to play together with at least one other player, to share their feelings and experiences while playing the game.

Conclusions
We argue that gender-aware game design requires a conscious awareness of what girls face, without devaluing what girls like. This becomes particularly important in the design of pervasive games. Our approach is to offer role-play as a form of performative expression and a thematic of empowerment and awakening to allow young women to experiment with alternative ways to perform an identity.

References

1. Ambjörnsson, F. *Rosa - Den farliga färgen*. Ordfront förlag (2011).

2. Benford, S., Flintham, M., Drozd, A., Anastasi, R., Rowland, D., Tandavanitj, N., Adams, M., Row-Farr, J., Oldroyd, A., and Sutton, J. Uncle Roy all Around You: implicating the city in a location-based performance. *Proc. Advances in Computer Entertainment Technology(ACE)* (2004).

3. Butler, J. *Bodies that matter: on the discursive limits of "sex"* Routledge (1993).

4. Casell, J. and Jenkins, H. *From Barbie to Mortal Kombat. Gender and computer games*. MIT press (1998).

5. Carlson Jones, D., Vigfusdottir, T. and Lee, Y. Body Image and the Appearance Culture Among Adolescent Girls and Boys: An Examination of Friend Conversations, Peer Criticism, Appearance Magazines, and the Internalization of Appearance Ideals. *Journal of Adolescent Research* (2004).

6. Clark, S. Running into Trouble: Constructions of Danger and Risk in Girl's Access to Outdoor Space and Physical Activity. In Stuart-Hoyle, M. and Lovell, J. (Eds) *Leisure Experiences: Space, Place and Performance* (2010).

7. Ernest, J. Design Notes: Caribbean Star In Salen, K. and Zimmerman, E. *Rules of play: Game design fundamentals*. MIT press (2004).

8. Evans, W., Oates, W. and Schwab, R. Measuring Peer Group Effects: A Study of Teenage Behaviour. *The Journal of Political Economy*, 100(5) (1992).

9. Flanagan, M. Troubling 'Games for Girls': Notes from the Edge of Game Design. In *Proc. DIGRA 2005* (2005)

10. Fron, J., Fullerton, T., Ford Morie, J. and Pearce, C. The hegemony of play. *In Proc. DIGRA* (2007).

11. Graner-Ray, S. *Gender-inclusive game design: Expanding the market*. Charles River Media (2003).

12. Johnson, N. Contesting Binaries: Teenage Girls as Technological Experts. *Gender Technology and Development*, 13(3) (2009).

13. Keenan, K. Developmental and Social Influences on Young Girls' Early Problem Behaviour. *Psychological Bulletin*, 121(1) (1997).

14. Miller, L., Chaika, M. and Groppe, L. Girl's Preferences in Software Design: Insights from a Focus Group. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, 4(2) (1996).

15. Montola, M., Stenros, J. & Waern, A. *Pervasive Games. Theory and Design*. Morgan Kaufmann (2009).

16. Sevick Bortree, D. Presentation of Self on the Web: an ethnographic study of teenage girls' weblogs. *Education, Communication & Information*, 5(1) (2005).

17. Stenros J., Montola M., Waern A., and Jonsson S. Play it for real: sustained seamless life/game merger in Momentum. *Proc. of DIGRA conference* (2008).

18. Subrahmanyam, K. and Greenfield, P. "Computer Games for Girls: What Makes Them Play?". In Cassell, J. and Jenkins, H. (Eds.): *From Barbie to Mortal Kombat: Gender and Computer Games* (1998).

19. Suits, B. & Hurka, T. *The grasshopper: games, life and utopia*, Broadview Press (2005).

20. Toscos, T., Faber, A., Shunying, A. and Gandhi, M. Chick Clique: Persuasive Technology to Motivate Teenage Girls to Exercise. In *Proc. CHI 2006* (2006).

21. Way, N. Can't You See the Courage, the Strength that I Have?: Listening to Urban Adolescent Girls Speak about Their Relationships. *Psychology of Women Quarterly*, 19 (1995).

22. Williams, M. What Teenage Girls Write to Agony Aunts: Their relationships, perception, pressures and needs. *Health Education Journal*, 63(4) (2004).