

# **“We are two strong women” – Designing Empowerment in a Pervasive Game**

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## **ABSTRACT**

Gender-aware design is important in computer games in general, and perhaps even more so in the design of pervasive games, as these are played in the ordinary world. As pervasive games blur the distinction between game and non-game situations, they influence the everyday lives of their players.

We discuss the design process for the game ‘*Codename Heroes*’ from a gender-aware perspective. The focus is on how players reacted to the experience of playing the game during a sequence of design workshops. We found that playing the game made people less sensitive to ‘fear of the outside’. The participants were aware they ‘should’ feel unsafe in unknown neighbourhoods, but mostly did not. Furthermore, a combination of collaboration with internal competition fostered a sense of empowerment. Finally, we could confirm what previous researchers have seen, that women participants tended to blame themselves, rather than the technology or the situation, for errors.

## **Keywords**

gender aware, pervasive game, design for young women

## **INTRODUCTION**

Computer game design has a deeply gendered design history (Cassell and Jenkins 2000; Jenson and De Castell 2010). Even today, when most game genres attract a fairly gender-balanced audience, computer games are still, by and large, designed and developed by men (Ray 2004). Games designed in an environment where men dominate and set the agenda tend to reflect and reinforce values that are normative for a male-dominated society. Hence, it is important to develop an understanding of what could constitute gender-aware design.

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Gender-aware design becomes even more important in the design of pervasive games (Montola et al. 2009), as they are played in the ordinary world, and not confined to the computer screen. Through blurring the distinction between game and non-game situations, pervasive games influence the everyday of their players. Unless designed in a gender-aware manner, pervasive games run the risk of imposing limiting gender coded values upon the everyday life of women.

We report on our experiences with designing a gender-aware pervasive game targeting young women in particular, more precisely girls in their lower teens.

## **GENDER-AWARE GAME DESIGN**

Issues related to gender and gaming has been central to the debate for more than a decade. Although the debate existed before Casell and Jenkins published 'From Barbie to Mortal Kombat' (2000), that book contributed with an in-depth analysis of the deeply gendered genre that is computer games. More recently, Kafai et al. (2008) have followed up on the debate to reflect on the more recent developments, as the percentage of women gamers is growing. The aim of this section is to situate our design approach in the context of this debate.

Let us start by the observation that the gaming community remains strongly male-coded. Most recently, this has been visible in the discussion on harassment against women online (such as the violent reaction to the 'Tropes vs Women in Video Games' initiative<sup>1</sup>). These structures lead to male-coded games being the norm; games that are designed to attract women gamers remain the exception.

This male-coded design norm is something that every gender-aware designer must take into account, and both research-driven and commercial games have struggled to find strategies to do so. Already Cassell and Jenkins identified the 'pink<sup>2</sup> design' strategy, which uses themes and graphically 'cute' designs deliberately aimed towards girls. Examples are games about shopping or being a fashion model. An early example of the genre was the Barbie game, succinctly analysed by Subramahayan and Greenfield (2000) to show how it both in style and gameplay fit into girls' ordinary play behaviour. A problem with the 'pink' approach is that it does not succeed to challenge the normative valuation of female coded activities. Boys (correctly) identify these games as 'girly' and as a consequence run a risk of being stigmatized by playing them. As grown-ups, we react somewhat similarly: just as we do not want our girls to dress up in pink ruffles, we do not like to see them playing games about fashion and make-up.

A similar but less stigmatized route to creating games for girls is to tap into girls' expressed interests in a less stereotypical way. Kafai et al. call this genre 'purple games' in honour of Brenda Laurel's company 'Purple Moon' that created several such games based on extensive research with girl gamers. Feminist researchers have criticised pink and purple game design on similar grounds, in that they install a limited picture of what it means to be a girl (Cassell 2002). Both genres originate in viewing being a girl as the defining property of their players. Here, queer theory has opened up for the perspective of gender play, performed by both sexes and allowing a mix (Butler 1990).

Brunner (2008) proposes a continuum of expressions ranging from 'butch' to 'femme', all expressions available to girls and boys alike. Brunner relates design elements that appeal to 'femme' players: Narrative themes that involve intimate and personal themes rather than epic struggles.

- Narrative themes involving groups of equals working together, rather than the ‘lone hero’.
- Gameplay mechanics that focus on figuring out how a tool is to be used, rather than on collecting an array of powerful tools.
- Focus on indulging in complex problem solving (what is done in the moment) rather than on the achievement so far.
- Storylines that result in positive resolution, rather than winning.

As all player classification models, the ‘butch’ versus ‘femme’ model opens itself to the criticism that is an overgeneralization, and all players are different. The individual player may prefer some but not all of these design elements, and players may well enjoy these elements in one game but not in another. To add, Brunner’s classification model is problematic in the same way as a classic ‘male’ versus ‘female’ classification: it relates the players’ gaming preferences to ubiquitous personality traits. This can be contrasted with e.g. Bartle’s model of multiplayer game players, which is solely related to their gaming preferences. However, Brunner’s model identifies more abstract design elements than the ‘pink’ and ‘purple’ design approaches, and by doing so avoids those that are very strongly female-coded. Hence, a boy could play a ‘femme’ game without running the risk of stigmatization by his peers.

Another approach we may label as ‘gender agnostic’: these are games where the player can choose to play a male or female character, and non-player characters can be female or male in any role irrespective of gender. The ‘gender agnostic’ approach is well illustrated by *World of Warcraft* (Blizzard 2004), in which story characters can be male or female irrespective of their function or role in the fictional society. The same goes for the player, who is free to select the gender of his or her character completely independently of all other character functions and abilities. The ‘gender agnostic’ model is often considered to be empowering for women players, as it allows them to play a badass warrior sharing their own gender. But the values ingrained in gender-agnostic games are still typically male-coded. In single-player games, the sole heroine role available is typically that of a tomboy with no female traits apart from the (typically hypersexualised) body (Waern et al 2005). When multiple roles are available, the risk is great that these still are gender-coded. Bergstrom et al (2012) show how the ‘Warrior’ and ‘Priest’ character types in *World of Warcraft* are perceived as male and female-gendered, by players and developers alike. The games maintain the normative valuation of functional roles and activities, and challenge very little of heteronormative values<sup>3</sup>.

## **GENDER-AWARENESS IN PERVASIVE GAME DESIGN**

Pervasive games are played in the *ordinary world* (Montola et al. 2009); they are not confined to the computer screen or to playing fields. Many studies of such games (Benford et al. 2005, 2006) 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 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 gameplay will often be part of ordinary life. Hence, if you aim to design a pervasive game for a particular audience, you have to be careful to understand its everyday practices in a

way that is not necessary for computer games. In our case, this means that we need to build on a good understanding of the daily lives' of young women. We started our project by a literature overview on sociological and ethnographic work studying the lifestyle of young women (Back et al. 2012). We limited the review to studies that have been performed in a Western context, but within this scope we did not filter for other factors such as class or country. We summarise this literature below, roughly condensed into three main areas, which we can summarise as 'what girls face'.

How can we use this information in design? The fact that these issues show up in lifestyle studies do not necessarily mean that all, or even any, of our players will experience them. However, given that the issues were pointed out not just in singular, but in several studies as well as for several countries, they served as 'warnings' – issues to keep in mind and to look out for. As we will discuss further on, several of them also surfaced in our workshops.

### ***Uncertainty of Personal Identity, Leading to Peer Pressure and Attraction of Others Rather than the Improvement of Self***

According to many of our sources, when girls enter puberty many change their behaviour and adapt new interests. This creates a focus on appearance and outward attraction, rather than on gaining knowledge and skills (Keenan and Shaw 1997; Williams 2004). Girls that are subject to this may become uncertain of themselves and vulnerable to failure. They compare themselves to others and experiment with their identity (Bortree 2005). Many discuss this in various blogs and forums, where peer support can help young women to overcome their insecurity and find solutions. But peer support can turn to peer pressure, e.g. by appearance criticism (Evans et al. 1992; Jones et al. 2004; Keenan and Shaw 1997; Toscos et al. 2006).

### ***Trust Issues (Especially with Boys), and Fear of the Outside World***

Several references mention that many girls have problems in trusting others, especially boys. This seems to often be related to a fear of being manipulated or betrayed (Way 1995). Social relationships within the age group are often homosocial. Furthermore, adolescent girls seem to often prefer to silence themselves or be silenced in relationships, rather than risk open conflict and disagreement. Many girls seem to view the outside world as a dangerous place, where women risk sexual (harassment, rape), social (comments, threats), and physical (violence) abuse (Bortree 2005). This perception of the world serve to restrict their movement to private space and supervised public space, and this in turn can lead to passive behaviour, physical weakness and limited physical activity. While girls become restricted to private spaces and access public space primarily under supervision, boys usually move much more freely and unsupervised through public space.

### ***Not Daring to Try with Technology***

The predominant design of technology is male-centric. Many studies report that young women feel less confident in handling technology and learning more about computers. This also makes them insecure as gamers. Whereas boys tend to take a trial-and-error-approach to mastering games and technology, girls often blame themselves for not understanding (Cassell and Jenkins 2000; Flanagan 2005; Subrahmanyam and Greenfield 2000).

## DESIGN RESEARCH

There are many views on how to do design research. Zimmerman et al. (2007) discuss design research, and the difference to design practice. They differentiate between design research as doing the *right* thing, while design practice do the *commercially successful* thing. To make it research they propose four criteria for evaluation: It should have a *documented process*, it should be a *significant invention*, it should be judged by *relevance* rather than by validity and it should be *extensible* for others to build upon.

Fällman (2008) on the other hand do not as clearly separate between design practice and design research. He instead separate design research into three main approaches: practice, exploration and studies. According to Fällman it is the movement between different approaches that creates design knowledge.

Our work is more closely related to Fällman's view of design research. However, the practical approach to research is in both cases similar. In our case, the research was based upon literature studies that informed us on the issue of limiting gender-coded values. This knowledge was used as the basis for the central design decisions in the game design process, allowing us to clearly document our design rationale. The game design was implemented and tested with users, resulting in a relevant design, which can be documented and extensible for other researchers.

To be able to gain knowledge from the design process and the testing, we primarily gathered empirical data throughout a sequence of play workshops with players. Our main method was to interview players after each game test, but we also documented play activity during tests through field notes. During some of the tests, it was also possible to ask players to document themselves by video.

### Data Collection: Interviews, Informed by In Field Observations

The main data collection method was semi-structured group interviews, as this gave the possibility to get an understanding of the complex issues of feelings and emotions connected to playing the game (Denscombe 2010), which will bring us closer to an understanding of how well the design fulfils the objective of empowering it's users. While one-to-one interviews give each interviewee a more direct focus, in a group interview the group instead help each other to come to more thoughts and drive the interview forward. In this the group interview seem to be able to give answers more fitting for our questions, as they help each other to expand on the feelings and experience. But this is also to a large extent a practical choice: Since the participants already were playing the game in game tests it was easy to plan for interviews in direct connection with those tests. The interviews took place after the actual game play, a moment when it was easy to focus fully on the interviewees, without being caught up in keeping the game running. Observations from the game test, mainly made through video cameras on the players, but to some extent also own direct observations, were used to inform the interviews, and to put the interviews in more direct content during the analysis.

## DESIGN GOALS AND STRATEGY

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 may 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.

## Design strategy

In our design work, we have aimed for an approach that we can call *gender-aware*. Our goal is not to design games for women or girls, but to design games that are more likely to be accessible and attractive to women and girls, while playable by boys too. While we do not intentionally aim at being norm-critical, we do want to avoid default male-coded designs.

We envision that a typical player would be a teenage western middle-class girl. As with most location-based games, Codename Heroes targets an urban rather than a rural population.

Our key strategy is to focus on game mechanics for which women and girls commonly express an interest. In this, our approach is similar to that of Brunner's differentiation between 'femme' and 'butch' design qualities, even though we do not use exactly the qualities identified by Brunner.

An important difference to Brunner is that we work primarily with *game mechanics* rather than story content. There are several reasons why we have chosen this approach. The first one is pragmatic: for resource reasons, we are working with a game that has very little pre-scripted story content. More importantly, story content that is attractive to women also runs a high risk of being viewed as female-coded, or 'pink'. The most important reason is however that working with gameplay mechanics allows us to indirectly design for activity. We first identify player activities and strategies that women and girls enjoy, and then construct game rules that encourage and reward such behaviours. This way, we aim to create a game which *women and girls would enjoy playing*, while it need not appear as female-coded at all.

In literature studies we found suitable design elements that could either be designed into the rules of the game, or encouraged by gameplay strategies. We call these areas 'what girls like' (to do). The following design elements were selected as a basis for the game design:

- Our game design focuses on collective play. Players join forces to solve a problem or defeat an outside enemy. This encourages team building and social play, and is selected to fit with how young women rely on their peers for identity building.
- Secondly, both the main gameplay mechanics and the narrative of the game foster a certain level of secrecy (Reeves et al 2005). This has two main effects: you avoid getting embarrassed in a public situation and you are in control of whom you meet and take contact with in the game. This was selected to fit with how young women are a bit afraid of the outside world as well as a focus on the outward appearance.
- The game fosters – but does not require – gift giving. This connects back to the reliance of peers. Even digital gifts work this way - Taylor and Harper (2002) have documented the use of digital gifts as a ritual with obligation for exchange.
- Finally we strive for a flat player structure based on meritocracy (that is, achievement rather than status structures). This is based on e.g. (Ojanen 2012), who describe the social hierarchies in horse stables (where young women are in majority and set the social code). Ojanen discusses how social status is negotiated through how good you are at taking care of your horse.

## **CODENAME HEROES**

The design of Codename Heroes attempts for gender-awareness at three levels: in the chosen game mechanics, in the play strategies these encourage, and in the choice of theme. As we have discussed before, there is very little story content built into the game.

### **Theme**

Let's start with the theme of the game. In Codename Heroes you play a superhero with magic abilities, joining a secret organization of spies. The spy organization collaborates against an external enemy – the 'Masters' who seek out magic users and control them. While both the superhero and the spy is themes to a large extent male coded (e.g. Superman, Batman and James Bond), secrets and magic are not (e.g. Harry Potter, Twilight). By combining themes this way, we aim at avoiding a 'pink' design, while still maintaining an interest for a women audience. The theme also emphasises the discovery of your own magic abilities. The magic superhero is a story of awakening; learning to understand and use your special powers. We selected a catch phrase for the game as 'You may be one of us', emphasising the personal story arch – from a normal teenager towards a magic superhero and part of a group. By this, we build on a myth that fosters a sense of empowerment and, in line with 'femme' narratives, focuses on inner and personal growth. 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 and lies far from the 'lone hero' myth complex.

From the perspective of pervasive game design, the concept of a hidden identity is useful as it allows people to at the same time play the game and participate in daily life activities. In Benford's terminology we are aiming for 'secret play' (Reeves et al 2005), where the game activity is more or less invisible to people that are not participating in the game. As mentioned previously, we know from literature that many young women are concerned with their outward appearance and 'fitting in', which may make it very awkward to carry out strange activities in public.

Here, a note is in order. It is also possible to see this as a problem; as something designers may actively want to *change* in a gender-aware game. Our literature also mentions that young men are much more comfortable in moving in public space. It is possible that by being less worried about fitting in, young men also are prepared to use public space in a more liberated manner. In our workshops we have experimented with ways of making the play activity in part public, in order to examine how players react to the difference.

### **Minimize levelling**

Codename Heroes is designed to be a persistent multiplayer game. This aspect has two very concrete effects on the design. Firstly, a persistent multiplayer game must offer ways for players to enter at any time and drop the game whenever they wish, while others can continue. Secondly, just as in online persistent multiplayer games there is no overall final goal for playing, but instead each individual quest has some winning criteria. In a way, a game like this becomes a collection of mini-games, which raises issues with creating enough incitement for players to continue to play. The traditional model is to use some form of 'experience points' that players can use to 'level up', and collect new abilities for their characters to gradually become more powerful in the game. Although we have kept an embryo of this structure in Codename Heroes, we were a bit wary of the approach, as it is difficult to create structures that allow newcomers and experienced players to collaborate – something we were keen to achieve in order to enhance collaboration in the game.

We have dealt with this issue through the design of the key reward mechanism, which is not experience points, but access to a 'blueprint'. A blueprint is a virtual object, which allows the player to build exactly one physical magical artefact. Since the artefact embodies a power in the game, this means that the player now has access to a new ability. But the power is not tied to the *character*; the player can choose to keep the artefact for herself, or give it to a friend.

### **Message Passing as Game Mechanic**

The core game mechanics of the game is that players carry and transfer secret messages. They get rewards in the form of magical energy ('mana') for delivering them to their destinations, as well as for passing them on to other players. Technically, we use the GPS on mobile phones to implement the message passing function.

The secret message mechanics is again meant to emphasize collaboration, as picking up and passing messages are inherently a collaborative act. Since messages are 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 is also deliberately designed as an anonymous meeting. You can pass on messages when you are close to another player but you need not meet physically. This means that typically, players need not even know whom they are exchanging messages with; deciding to meet up is possible but voluntary. The interaction model is secret play (Reeves et al 2005), as the manipulation of messages on the phone looks like ordinary phone interaction (as when sending an instant message or playing a mobile game) for a non-player.

### **Magic Artefacts as Powers**

The magical powers in the game are tied to physical objects, called artefacts. These can be placed in the environment, or carried along depending on what power they hold. The most basic form of magic artefact is a 'letterbox', which can store virtual messages. Typically, each player will build her or his own letterbox and leave it in a public but hidden spot so that other players can leave messages there. In our game tests, we also used magical artefacts that could steal 'mana' from other players, and other magical artefacts that prevented this from happening.

The artefacts are connected to the game through optically readable codes (QR-codes) and a GPS position, which is obtained from the phone that is scanning the object. To use a magic artefact, the player scans its QR code with the camera on the mobile phone. Some objects are only functional in a particular position. The position of an object is updated every time it is used and hence, the game maintains a reasonably accurate understanding of where each object is located.

As the powers are connected to artefacts rather than players or phones, players can share these artefacts with each other. Gift giving is thus a viable play strategy within a player team.

### **Quests as 'Minigame' Goals**

The game includes a quest system implemented on top of the message passing system. Quests are delivered as messages, and quests can be completed by sending messages back, or through locating and using a magic artefact specified in the quest. Quests can be for individual players, but most are designed for groups of at least two players.



Completing quests is the only way to gain new artefacts. During quests players may also acquire more background information and develop the story of the game.

The quests are our primary means to make players team up and play collectively. Although groups need not be permanent, the quest structures encourages semi-stable group structures as follow-up quests are proposed to all group members at the same time.

## **DESIGN ITERATIONS**

Codename Heroes was developed in an iterative manner, through multiple workshops with partial game implementations.

### **Game Test 1**

Our very first test was done with a ‘pen-and-paper’ prototype of the game. The messages were placed physically in the environment as letters in envelopes. We used a previously developed system to track the player’s GPS position through the test. Although the physicality of messages was appreciated, the manual work overhead for players was large, in particular in decoding messages and simulating mana consumption.

Four participants in this test were from the target group, age 18 – 20, and all except one were women, two more participants were older. The game was run twice, with the two youngest participants in the first run, and the other four in the second. All participants were from the Stockholm area. The game ran for about an hour after which concluding group interviews were held. During the game test the four younger players played in groups of two, and the older as single players. The groups had one extra mobile phone per group designated to film themselves while playing.

### **Game Test 2**

Our second game test was done when the game was partially implemented but the look and feel of the client was not in place and a few functions were missing. The message passing system and letterboxes were implemented, but the quest structure and the generic artefact system were not in place. In this setup we used a wizard-of-oz setup to simulate a quest system.

Due to difficulties in recruiting a sufficient number of players from the target age group, this game test used an older group of young adults. Most of them had personal experience of game design, mainly ‘nordic larp’ (live role-playing) style (Stenros and Montola 2011; 2010) and strong feminist ideals. The game ran for about two hours and a group interview was conducted. During the game, specially instructed players chased the players carrying cameras, taking as many pictures as possible. The images were used during part of the group interview to inform the interviewers and to further spur the discussion.

### **Game Test 3**

Our third trial employed a fully functional prototype, but did not make use of the quest system. This trial was carried out at a youth festival in central Stockholm right before the school semester was about to start. Players were recruited on the spot, from the festival participants. For the purposes of this test we had to develop a very short and local game scenario; the game played at the festival lasted for at most one hour and the game area was limited to the festival area. The players teamed up in three teams, each with its own home base where they could decode messages that were directed at the own team. They were also hunted by a set of players acting as ‘agents of the enemy’. The players’ task was to figure out how to neutralize and catch these agents. This field test was successful

in that the participants appreciated the game, and also functioned as a good stress test of the technology. However, since the test was very short it did not function as a good test of the persistent long-term game that Codename Heroes is designed to be.

Due to the public venue of the test, the individual tests were not filmed or taped and no interviews were held, instead questionnaires were used to collect player feedback. A total of 31 women and 21 men participated in this trial, most in the age range 15-20 with a few older players. Of these players, 24 women and 7 men filled in a post-game questionnaire.

#### **Game Test 4**

Our final test was a longer field test, running over a full week with a small group of players. This test was carried out approximately one month after test 3. In terms of number of players, this field test was much less successful. Although we had a group of eight players signed up, very few managed to play the game during the week it was running and for the final event, only two players remained. They were interviewed two times, once after the week, but before the final winner-event, and then again after the final event. The reason for performing two interviews was to gather feedback on the weeklong play in a way that was not affected by the final event experience.

The players in the weeklong adventure were in the age group of 18 – 25, with the final participants in the lower end of the scale. They were free to participate as much or as little as they wished, but were informed that the week would contain some scheduled game events. When quests started, they were informed at least one day in advance of where and when to be.

#### **THE PLAY EXPERIENCE**

In interviews and observations, five main areas related to gender and empowerment came up to discussion.

##### **Aware they should Feel Unsafe, but don't**

When explicitly asked, the participants stated that they did not feel unsafe while playing, even when the game took them to places they did not know, or that were dark or desolate. They still stated that they would not want to play alone; both because it is more fun to play with others but also due to safety. It should be noted that the participants never brought up the subject of safety unless explicitly asked.

In the videos recorded by the participants during test 1, there were discussions about safety. In one instance in a dark and lonely place they bring forth the borrowed (expensive) mobile phone, and then they realize and comment on the situation:

“We’re gonna get so mugged! Nice mobile, waving it around a bit!”  
(Women players, film from test 1)

Afterwards they laugh a little and move on. In another situation the same two players have been moving towards the location where they thought they would find a message, and having to leave the lit up street they tell themselves and the camera:

“We’re walking on the scary path right now. You can’t see right now [because it’s dark], but it is scary. But we are two strong women”  
(Women players, Film from test 1)

Again, they laugh a little to each other after the comment. In this instance they seem to find strength in not being alone. Having a friend there, together with laughing at the situation seem to be a way of disarming the situation.

### ***Indoors – Outdoors***

A related issue was an observation we interpreted as a feeling of confusion and uncertainty related to the game moving indoors. In the interviews after test 1, the participants said that they felt unsure of where they were allowed to go. This was true not only for private areas, but also for semi-public ones like the entrance hall to the university. (The participants were not students at the university.) The shopping mall generated similar emotions of awkwardness; not for entering but for performing in-game activities such as hiding a message in an envelope in the mall. The players were worried that they may be accused of trespassing or littering, or just appear as acting weird.

This is also visible in the video from test 1. On one occasion, the players take 15 minutes before daring to enter the university building. Only after scrutinizing the map and realizing that the directions actually say ‘in the university’ they dare to enter.

### **Getting Lost and Finding New Routes**

Related to the feeling of safety was how familiar the participants were with the area where the game was played. The two first game tests were staged in an area that most players had not visited previously. In the interviews, players stated that it might have been more fun to play in a familiar area, but exploration was also mentioned as fun. Many seemed to have trouble locating themselves on the maps. When talking about exploration and seeing new things one participant said:

“[I] entered small roads I wouldn’t otherwise walk. But [most of the time] I took the largest roads that were easy to find.”  
(Male player, Test 1)

For this player, moving was primarily a means of transportation and did not afford exploration. However, even transportation can be a positive experience, and this even if the players are lost. In the videos there are several instances of players running to get to certain points in time, laughing, getting lost, and finding fun in failing. The reward comes when the players finally, after a long search find the right location. This is both mentioned in interviews and observable in videos when player after a long search find an envelope and start shouting excitedly to each other.

### **Achieving rather than Winning, Cooperation and Competition**

In our early game tests we did not provide players with an overall winning condition. Instead, we interviewed the players on what goal they had set for themselves during the game. Most participants had focused on “solving the riddle”, “finding messages” or “deliver messages” rather than to gain most points (or ‘mana’). To find a message was described as a feeling of accomplishment, and one of the most positive experiences in the game. However, one of the reasons for the relatively low emphasis on gaining ‘mana’/points might have been an obscure system for calculating the points.

The players were also asked if they were playing with or against each other, in cooperation or in competition. And most agreed that it was a combination of both.

“I think it can be both. Like, if we are superheroes or something, than the hero team won over the villains, but she’s the one who’s going to sit at the top of the table at the next superhero meeting.” (Woman player, test 1)

For others this seemed to be related to the fact that they were learning the game – and loosing:

“I knew it was a competition, but I realized I couldn’t care, because we were gonna lose so hard anyway” (Woman player, test 1)

Players still described the activities as fun, even when they did not win. One participant described it all as:

“Like friends competing, instead of just competing” (Woman player, test 1)

And continuing to say that she could be happy about the other persons win, instead of being annoyed that she lost.

### **Role: No, Persona: Yes**

The participants expressed no interest in playing a character (as in a tabletop role-playing game or live role-playing). They were slightly more positive towards personas, memories of previous lives and similar parts of a role that could enhance the game. One player suggested that she wanted to register as herself, but then add elements of a role on top of that. Others said that if there would be a role it needed to connect closely to the game system, so that it would have a function in the game.

### **Blaming of Self**

When something went wrong, such as if the technology malfunctioned or players got lost, or when they could not understand the game fully, many participants blamed themselves. Saying things like:

“Yes, and a bit confusing, but that’s because I’m a confused person” (Woman player, test 1)

and, another participant, when asked what was hard to understand, before answering the actual question, said:

“I think I have to low gaming experience to understand in general, the way of thinking” (Woman player, test 2)

In another case similar blame was even seen in being interviewed, and answering questions:

“God, this was hard... [pause] We were supposed to leave messages... [pause] I’m not that good at describing things.” (Woman player, test 4)

Even though the sample is to small to say anything about the population in large it is interesting to note that this only happened with female participants.

## DISCUSSION

There are many ways in which a game can be designed to cater for the needs and interests of female as well as male players. In Codename Heroes we aimed to strike a balance between creating a game that was accessible and attractive to young women – catering for ‘what girls face’ as well as for ‘what girls like’. At the same time, we aimed to avoid design elements that are strongly female-coded in society; this we applied to the visual design and also to some extent to the story content of the game. Choosing a superhero myth is case in point, as there exist both ‘lone heroes’ superheroes, and stories about superhero collectives.

This is admittedly a cowardly approach. Codename Heroes does nothing to change the valuation of female-coded design elements; it avoids them. While we deliberately design for activities that ‘girls like’, the design hides this fact behind a seemingly gender-neutral surface.

What speaks for the approach is that it seems to work. In the questionnaire from our third game trial, both men and women unanimously classified the game as for ‘both boys and girls’, and they also indicated that they appreciated the game. The average rating of the game was between 4 and 5 on a five grade scale, and slightly higher for the men. Despite this result, we were not able to recruit as many male players as female, and the male players also had a significantly lower response rate. This indicates that the game on the average is more attractive to women than to men. A possible interpretation of this result is that we have succeeded in creating a ‘femme’ game, without gender-coding it as a “girl game”.

## CONCLUSION

The design of Codename Heroes has given us several insights into what is required to design a gender-aware pervasive game without making the game inaccessible to male players. The main take-away from our design process is that this is indeed possible, but that it is important to place focus on the design of gameplay mechanics and strategic play. The design strategy of designing gameplay to women play preferences, rather than story or surface appearance, leads to a game that does not appear as female-coded as more overt ‘pink’ and ‘purple’ design solutions tend to do.

From our play tests, we could notice that the gender perspectives that we had elicited from literature did manifest when women players played our game. For the most, we have aimed to avoid the issues from literature. But we also *use* the documented way in which girls turn to their peers for support to overcome feelings of insecurity. The game design emphasises collaborative play, and encourages gift giving as a viable strategy for sharing powers between players. From our play studies, we could note that the collaborative play style helped to address one of the major issues that girls face: the ‘fear of the outside world’. Our players were aware that they ‘should’ feel unsafe when playing in public space, but the fact that they were playing in pairs and playing a game made them feel safe. However, we were not able to address the tendency for women to blame themselves both when they did not fully understand what to do, and when there were actual errors with the technology.

Our play-tests with Codename Heroes will continue, with an increased focus on long-term play. A core issue we will study is if collaboration and gift-giving will manifest as intended, and what effects this has on the play style and player demography.

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## ENDNOTES

<sup>1</sup> Tropes vs Women in Video Games, available at <http://www.feministfrequency.com/>

<sup>2</sup> The choice of term reflects both the fact that these games often make excessive use of the colour, and a recent analysis of ‘pink’ as a dangerously gendered colour and strong cultural marker (Ambjörnsson 2011).

<sup>3</sup> Even gender-aware critics tend to fall into this trap. As an example, consider the re-imagined Battlestar Galactica series, which put a lot of effort in making its women characters strong, complex and the driving force in the series. The two most central women characters are Kara Thrace and Laura Roslyn. Kara is a fighter pilot, and as such assumes a traditionally male-coded role (the same character was played as a man in the original series). By contrast, the president Laura Roslyn is a female-coded character: her values centre on survival of the human race, she is a former schoolteacher, and she is battling breast cancer throughout the series. Both are very strong characters, and the series’ authors are to be commended for writing them. But when strong woman role-models are discussed, the character brought forward from this series is almost always Kara Thrace (see e.g. <http://blogs.bluebec.com/science-fiction-women-who-kick-arse/>).

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