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Design and Use of Gender Specific and Gender Stereotypical Toys

Els Rommes, Maartje Bos and Josine Oude Geerdink

Radboud University, Nijmegen, The Netherlands

ABSTRACT
We have analysed the gender scripts of the toys of three Dutch companies and distinguished gender specific from gender stereotypical scripts. We developed a method for rating games on these two dimensions. Gender stereotypical games play an important part in the gendering of children. In order to explore to what extent this might also be the case for gender specific scripts, we interviewed eight girls (9-13 years old) about their play behaviour in relation to masculine connoted games. On the one hand, these girls felt free to play with such games, but on the other hand, they also spent time and effort justifying their choices, showing that their freedom to play with gender specific games with a masculine connotation was limited to some extent. Therefore, it is important that companies develop gender neutral, gender equal or gender bending games. In this respect, our analysis of the games developed by the three companies revealed considerable differences between the companies. We explored potential reasons for these differences in the markets (educational or retail trade) addressed by these companies, the user representation techniques they had used, and the (feminist) values that the directors of these companies held. We expect that interventions in the design process aimed at the user representation techniques used by the companies and the feminist values of the designers could be most effective in creating less gender specific and stereotypical games.

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INTRODUCTION

Playing games is an important way in which children learn. Depending on the game they play, they develop their cognitive capabilities, social and emotional skills and physical capacities. At the same time, they learn about societal norms and preferred ways of living in the world, and in consequence, also about gender relations in society. Games can be gendered in various ways and they can have various 'gender scripts' (Oudshoorn, 1996; Rommes, 2002). According to Madeleine Akrich (1992), scripts 'define actors, the space in which they move and ways in which they interact' . The concept of script explicitly draws attention to where these scripts originate - to the design context. For instance, scripts can result from the implicit or explicit representations designers make of the users of the toys they produce. In this article, we will study the possible origins of scripts of toys and what their effects might be. Our aim is to identify possible interventions that might be made in the design process that might lead to less stereotypical or gender specific toys being produced in the future[1].

In this article, we will distinguish gender stereotypical scripts, scripts with explicit norms of how men and women should behave, and gender specific scripts that define actors, the space in which they move and ways in which they interact, as directed more towards one gender than to the other. We consider gender stereotypical games to be those in which 'bodies' are present, either as avatars (game characters) or as a representation of the person who is expected to play the game. These bodies are sometimes connected with gender stereotypical role patterns, such as computer games in which men are the heroes who rescue the damsels in distress, or in which the characteristics of the avatars follow stereotypical patterns of strong men and sexually attractive women (Corneliussen, 2008). By explicitly connecting gender norms to sexed bodies, these games re-inscribe cultural meanings of gender on bodies, on sex. It shows one aspect of the 'apparatus of production', as Judith Butler (1999) called it 'whereby the sexes themselves are established' (p.11). Games that do so, we will call gender stereotypical games.

Games and toys which represent gender norms but without representing bodies we will call 'gender specific': they represent implicit gender norms. Although children do seem to be greatly encouraged by adults and society to play with gender specific toys that fit their biological sex, children also play with gender-atypical toys and, by doing so, might be encouraged to experiment with non-stereotypical behaviour. The messages about gender are easier to re-inscribe, transform or ignore in gender specific games than in gender stereotypical games. So gender specific toys are not necessarily as great a problem as gender stereotypical toys. Both gender stereotypical and gender specific toys can have effects on players and their gender (beliefs), but these effects might not work in exactly the same way. In the next section, we will discuss the potential effects on children of playing with gender stereotypical and/or with gender specific games.

One of the criticisms of the gender script approach is that it may seem to be a technologically determinist concept: a script will have a certain impact on a user. To avoid this pitfall, in this article we will focus not only on the design process, but also on how users deal with the gender script of toys. In the first section of the paper, we will discuss the possible effects of gender stereotypical and gender specific scripts in toys on children. We do so by firstly summarizing previous research on the impact of gendered games on children. Subsequently, we will present a small experimental study of eight girls who play with gender specific masculine connoted computer games. We will discuss the extent to which the gender specificity of these computer games present a problem for these girls and how much freedom they have to experiment with masculine connoted characteristics, such as competition and aggression.

In the second part of this article, we will explore how games acquire their gender scripts. If we know where gender scripts originate, we also know better how and where to intervene in the design process. It is both very complicated and time consuming to study the (gender) scripts of computer games since analysing the script implies playing each game, preferably several times (see Corneliussen & Mortensen, 2006) for the description of what such an analysis of a single computer game encompasses). Hence, we selected toy-producing companies, rather than computer games producers for this part of our research. With the help of two scales we developed to measure the gender specificity and the gender stereotypes of these games, we analysed the gender scripts of all the toys these companies presented on the Internet. Earlier studies of the design process of games and other ICT products indicate that the design processes are similar to those of the toy-producing companies we studied, so we expect the outcomes of this explorative study not to differ greatly from those of computer games-producing companies (European Commission, 1998; Gansmo, Nordli and Sorensen, 2003; Sorensen, Faulkner & Rommes, forthcoming).

GENDER SPECIFIC AND GENDER STEREOTYPICAL GAMES AND THEIR EFFECTS

As clarified in the introduction, we distinguish gender stereotypical games from gender specific games. Regarding the effects of gender stereotypical games, Henning et. al. (2009) found that as a result of the numerous gender stereotypes present in most video games, frequent playing of video games is associated with greater acceptance and less critical evaluation of gender stereotypes. In other words, children who often play with games in which gender stereotypes abound are no longer aware that they have been confronted with stereotypes and may even accept stereotypes as the normal way of behaving for men and women. Henning et. al. studied the effects of stereotypes as represented by avatars in these games, but stereotypes might also be reinforced in another way. They can be reinforced if gender specific toys are clearly marketed to the sex (bodies) belonging to the specificity of the game, e.g. if the pictures on the package of a game aimed at girls displays girls playing with it. In these cases, toys clearly construct norms about which toys boys and girls should play with, and how to behave in a 'gender appropriate' way. As Taylor (2006) commented, 'advertising for computer games is

one of the core ways of generating interest and cultivating markets. It is also in the realm of advertising that potential players come to understand a game as a gendered product' (p.119)

Many games may not be so clearly gender stereotypical and normative, but are gender specific, meaning that various aspects of the game give messages 'about the appropriateness of an artefact for different groups of people' (Stienstra, 2003, p.12), and more specifically about the appropriateness of the game for boys or girls (without explicitly showing bodies on the packaging or in the game).

Following the 'levels' of gender of Sandra Harding (1986) - structural, symbolic and identity - we identify several aspects with which a game can signal being more masculine or more feminine. Structural aspects include, for example, the world that is addressed by the toy - is it a world of war or of domestic chores? The symbolic gender connotations that are conveyed through the toys include aspects such as its use of colour or use of material. At the identity level, toys can foster different kinds of abilities or characteristics in the player. As Miller (1987) noted: 'for children of both sexes, play with stereotypic boys' toys (especially blocks) was related to higher scores of spatial abilities (…), whereas play with stereotypic girls' toys was related to higher verbal than visual-spatial scores' (p.475). Moreover, girls and boys who received 'masculine gifts were more likely to have masculine career aspirations', whereas girls who were given feminine toys had 'traditionally feminine occupational preference' (Etaugh & Liss, 1992). So toys may not only signify whether they are intended more for one sex than the other, but at the same time they reinforce the skills, characteristics and symbols that are connected with that sex. Hence, not only gender stereotypical but also gender specific toys are involved in creating and reinforcing gender differences in society.

Although toys may contain a gender specific or gender stereotypical script, players always have the option to play in a way that differs from that which the script prescribe, for instance they can 'bracket or ignore' parts of the gender stereotypical message (see Taylor 2006). There are differences between the kinds of scripts and the freedom players have to play with them in their own way. Some toys might not aim specifically at one gender or the other, as Miller (1987) and Campenni (1999) also observed when they asked pupils and parents to classify games as masculine or feminine. Moreover, some games may even stimulate gender bending play behaviour or norms, as Brunner et. al. (1998) wrote: 'We believe that one function of role-playing games could be to help provide an imaginary space allowing girls to fool around with the notions of femininity that make sense to them, and offer rich, complex stories that raise questions about the consequences of the social prescriptions for femininity' (p.83). T.L. Taylor (2006) added to this the notion that games 'may allow access to gender identities that often are socially prohibited or delegitimized offline' (p.97). Hence, gender relations can not only be reinforced by games, but can also be explored, experimented with and challenged. Even gender specific games that do not explicitly offer this option can work out in this way, as children often choose to play with toys that seem to be for the opposite sex. Gender specific toys do not necessarily reinforce gender stereotypes in society, they merely afford this option.

However, this option seems somewhat limited, if one takes into account what kind of toys and play environment are offered to boys and girls. Various researchers have shown differences in kinds of play encouraged in children and in the types of toys given to them. Pomerleau et. al. (1990) observed that 'boys were provided with more sports equipment, tools, and large and small vehicles. Girls had more dolls, fictional characters, child's furniture, and other toys for manipulation' (p.360). Miller (1987) also concluded on the basis of various studies that 'girls are generally given toys that afford practice in domestic activities (irons, refrigerators, stoves) or in mother behaviours (dolls, stuffed animals); and boys are more frequently given toys that encourage exploration, manipulation, invention, construction and that provide feedback' (p.474). Even though these studies are somewhat older, the pattern that parents and other adults select different toys for girls and boys, 'even before the child can express her or his own preferences' (Pomerleau et al., 1990, p.365) still seems valid (see also Fisher-Thompson, 1993). As Etaugh and Liss (1992) wrote after studying children's wishes for Christmas presents and what they received, children's requests were more likely to be fulfilled if they asked for gender-typical toys than if they wanted gender-atypical toys.

We have distinguished gender specific games, that contain structural, symbolic and identity markers of one or the other gender, from gender stereotypical games, games that re-inscribe sex differences through connecting gender stereotypical aspects to male and female bodies. Reviewing the literature on the possible effects of these gendered games on children who play with them, and the possibilities children have to avoid these gender (stereotypical) messages, it does seem that it is harder to avoid gendered messages in gender stereotypical games than it is in gender specific games. In the next section, we will study how hard it is for girls to ignore or work around the gender norms and messages in masculine gender specific games.

GIRLS PLAYING WITH MASCULINE CONNOTED GENDER SPECIFIC GAMES

To study how hard or easy it is for girls to play with games that are gender specific and aimed at boys, we interviewed and observed eight girls between the ages of 9 and 13 who played with computer games. They were found through the snowball sampling method, and generally come from different schools and environments.[2] Before the interviews the girls did not know that gender was a topic of the interview. The interviews and observations were held in the girls' homes and each took about one and a half hours. The interviews were taped and transcribed verbatim, with the relevant quotations being translated by the authors into English. The girls were asked various questions such as: what was the last game they played; what elements in computer games did they like and dislike; and how did they feel about competition, cooperation, violence, puzzle elements in games. Only at the end of each interview did we make a reference to gender by asking what they felt were differences between boys' and girls' games.

According to several authors, various elements in computer games make those games less attractive to girls. The elements that are probably most often mentioned as typical boys interests, hence deterring girls from playing these games

are aggression and competition (Hanappi-Egger, 2007; Hartmann & Klimmt, 2006; Weil, 2007). Jenson and de Castell, however, have shown convincingly that these kinds of differences result from differences between boys and girls in level of experience in playing games, and that girls can become as aggressive and competitive as boys when their level of experience is raised (Jenson & Castell, 2008). It is not productive, and even counterproductive, as repeating these stereotypes is a way of enforcing them, to regard aggression and competition as a gender identity difference. Nevertheless, at a symbolic level these differential preferences are still assigned to gender, and are still influential, as we also found in our study of the eight girl gamers.

It became clear that all of the girls in some way or another felt they had to explain to themselves, their friends and the interviewer why they, as girls, liked to play with games they themselves defined as male connoted games (see also Schott & Horrell, 2000). As Corneliussen (2003) found when interviewing women computer science students, all of them related to the hegemonic discourse, even if some of them chose to identify in which ways they were different to most girls, and others specified why the game they played was not violent, as they put it, 'in the wrong, boyish way'. All of the girls in our study indicated that they liked competitive and violent elements in the games they played, though the cautious way they formulated this made it clear how they struggled to keep a balance, not jeopardising their femininity. As Taylor (2006) wrote, girls do like combat and violence in computer games, even though 'in most areas of society this violent and aggressive side of a girl/woman's nature has to be repressed in conformity to socially expected norms of what is acceptable 'feminine' behaviour' (p. 108).

All the girls we interviewed showed motivation to win. This is not so strange, because why would females who do like competition in sports, dislike competition in gaming? (Jenson, & de Castell, 2008). Laura (13) said: "At one point you get so far in the game, so far that you're at the highest point and still you can make it. That's nice!" For Sarah (13), competition is even a condition for a game: "it shouldn't be boring, like if you can't do anything. It should be that you can race or win with something". One of the favourite elements of Maud's (10) favourite game Conquer online, is reaching the highest level possible. Indeed, winning seems to be a powerful motivation for these girls to play computer games.

Similarly, there was no very clear aversion to violence and action among the girls. Some of them even mentioned it as one of the main elements they appreciated. In one observation Monica (10) enjoyed the shooting in a James Bond game. She showed enthusiastically which weapons can be used and shouted with joy whenever she received a more effective and aggressive weapon. As the figures on the screen fell down they gave heartrending cries, imitated by Monica and followed by her comment: "funny, isn't it?". At the moment she died herself a thick layer of blood filled the screen and Monica said softly: "shit, dead…". She clearly enjoyed the excitement in the game. Roos (11) mentioned the fighting as the best element in an adventure game (Lord of the Rings). Laura (13) perceived the game 'Grand Theft Auto' as too difficult for her, but the shooting was one of her favourite

activities in that game, and Maud mentioned killing the animals as one of the most enjoyable activities of Conquer online.

There seemed to be two ways in which the girls felt they could deal with being a girl and liking masculine connoted gender specific games. One way was by defining themselves as being a bit different to other girls, but not too different. Some of the girls explained their behaviour by stating that they were more 'boyish' than most girls. Sarah and Roos, for instance, explained their preference for boyish games by saying that they were into masculine sports (Jiu-Jitsu and soccer), Monica explained that she sometimes played with boys, whereas Sarah is in a class at school with mostly boys. Others explained it by saying that their mother also played with these games, or that they had brothers or sisters who play with boyish games.

In general, the girls seemed to agree that it is better for a girl to be a bit boyish than to be too girlish. There was a thin line, however, between this and being too masculine, which they took care not to cross, since it brought the risk of being perceived as not belonging to the group anymore. For instance Jill (11), hypothesised about a girl who likes violent games:

> Well, I think if she really really liked it, I would think rrrright, that's what I would think, she's not one of us… but if she liked it just a little, than she can be quite popular, because she would be a little bit tougher, and most children think that's cool.

Her friend Merel (11) added:

> There's a girl in our class and she dresses like a boy and she plays such boys games and she joins the boys with soccer and most girls say, if they're talking about the girls, they mean all the girls, except her. I feel sorry for her for that. She has long hair, but then still you think, is she a boy or a girl? But she never plays with the girls and so on. She never joins us with dances and so on.

Roos (11) described how she experienced the effect of her gender inappropriate behaviour on her peers:

> Yeah, because I don't always belong to the group, if I tell them I'm playing soccer, then… they avoid me sometimes. They think… if I pick up an earth-worm or something, they all start to scream: iiieee, yuck!

So although the girls perceived some advantages (being cool and being seen as tough by the boys) of coming across as somewhat masculine, they took care not to be too masculine and risk not belonging to the group any longer.

The second way in which girls felt they could play with masculine connoted gender specific games without jeopardising their femininity was by degrading the masculine elements in these games. For example girls would differentiate between the types of violence in the game: whereas some would consider killing with a knife

or hand to hand combat as fair and not too violent, others would perceive killing with a gun as not too violent as it would be from a greater distance. Some would have no problems with violence as long as there was not too much blood, others would have no problems with the violence as long as it was not too realistic, although it should also not be too unrealistic. Others, like Maud and Jill, distinguished their own way of playing violent games from that of others (i.e. a brother or younger children) and saw their own way as morally responsible or as having no consequences for real life. In these ways, they could define the games they themselves preferred or their own playing behaviour as not being a challenge to their gender identity.

Similarly, girls would find ways of defining their way of playing competitive games as unproblematic. The problems girls perceived in competitive games were that they could lose and hence 'lose face', or that they could win and then be perceived as not a 'nice' girl. Some girls dealt with their fear of losing face by saying that it was alright to lose because they mostly lost to boys (e.g. their brother) who were better because they were more experienced and/or because they were men. Winning a game, especially if they beat another girl, seemed to be more problematic for the girls. The girls solved this by, for example, apologising to the person they had beaten, "sorry, you're dead", by complimenting the other player "You're a good loser!" and by not making a show of winning, even if they secretly enjoyed it. In this way they could enjoy competition while at the same time being a 'social' girl and taking the feelings of the opponent into account (see also Jenson & de Castell, 2003). In general, losing or winning when playing against the computer was perceived as less of a problem than winning or losing when playing against other people.

Other studies have had similar findings, and have shown that what girls say and what they do with the computer might be different. Girls will often take part in and like the same activities as boys, but when talking about these activities they will refer to gender difference discourses and state that they do not like these activities as much as the boys, are not as good at them or that what they do is somewhat different than what boys do (Jenson, de Castell & Bryson, 2003; Nordli, 2004; Rasmussen & Hapnes, 2003). The degree of freedom the girls felt to behave or speak about behaviour that differed from the discourse prescribed for them varied among the girls depending on their role models (their mother seemed especially important in this respect) and their perception of acceptable behaviour for girls at school. Nevertheless, it has become clear that although the girls had some freedom to play with masculine connoted elements in the game, they also had to work to explain their behaviour to themselves and others. Clearly, ideas of biological differences between boys and girls still are very influential and make it harder for girls to play with masculine connoted gender specific games than for boys.

HOW DO TOYS ACQUIRE GENDER SCRIPTS?

In the introduction we distinguished gender stereotypical scripts from gender specific scripts as we expect these to have a different effect on the players. Stereotypes in games are more explicit and possibly harder for players to avoid. In contrast, the gender specificity of a game may be ignored or even used to

experiment with characteristics of the opposite sex. In the previous section we have shown that in a gendered society it is hard for girls to experiment with masculine connoted characteristics in such games, nevertheless, it is an option. So we will still analyse the gender specificity and the gender stereotypes of a game separately.

To study how toys get a gender stereotypical or gender specific script, we selected three toy producing companies in the Netherlands that varied on several dimensions, such as how large they were, the market for which they aimed and what kind of user representation techniques they used. For each company, we analysed the stereotype script and the gender specificity script for all the games we could find on their website, amounting to a total of 62 games analysed. In our analysis of the gender scripts of these games, we not only looked at the toy or game itself, but also at its package and advertising (on the website). We will start by describing how we analysed the gender specificity of the games and their packages and how we analysed how stereotypical they were. Subsequently, we will present the results of this analysis and the explanations we found for the differences between the companies in the gender scripts of their toys.

Methodology: Analyzing the Scripts

To analyse the gender specificity of the games of the three companies, we were inspired by Sandra Harding's (1986) three 'processes of gender in society' (p.17). We distinguished three processes, or what we prefer to call 'dimensions', of gender. Games can have a symbolic gender connotation, which we analysed by looking at the colour, shape and material of the toy. For example, Miller (1987) showed that girls were more often given stuffed toys, so games with round shapes and those produced with soft material were classified as gender specific for girls. Pomerleau et. al (1990) showed which colours were associated particularly with boys or girls. We defined pink and blue as very gender specific for girls and boys respectively, whereas pink and blue derivatives, including pastel for girls and dark colours for boys were rated as only slightly gender specific. All other colours were classified as 'gender neutral'. Games can also be structurally gendered if they refer to professions or locations in society where more men (or women) are found, e.g. if toys refer to the army or mobility sector (e.g. shooter-games or racing games) or if they refer to household tasks or the beauty industry (e.g. Barbie fashion designer). As Miller (1987) has shown, toys stereotyped as female were more often domestically oriented, whereas boys' toys included vehicles (mobility sector), construction toys and guns . In this dimension, we also took the name of the toy into account, e.g. the 'Glass Slipper' game refers to a different world than the 'Battle Dome'.

Last but not least, games elicit or necessitate various characteristics and skills of the players that we in present day Western society associate with femininity or masculinity, what we call the identity dimension. In the previous section, for instance, we saw that aggression and competition is more readily associated with masculinity. We chose to typify games which encourage the training of memory, reasoning and strategy as gender neutral. Similarly, we defined games which were based on chance, which encourage solo play (including puppets which encourage solo play with accessories), and those which encourage playing together, but do so

in a competitive way, as gender neutral. Games which encourage cooperative, social and communicative play and those that encourage creativity, nurturance and attractiveness we defined as only slightly gender specific for girls. We defined games which encourage motor and spatial skills or games which encourage aggressiveness, construction and competition as slightly gender specific for boys(see also Miller 1987).

As with computer games, some toys we analysed contained avatars. We defined an avatar as any representation of a human being or living entity, other than the targeted user, in or on the package or advertisement of a game. Examples would include a picture of a girl or a duck, but can also include a baby doll or a wooden figure of a person. According to Taylor (2006), avatars 'are mediators between personal identity and social life' (p.110), so we expect them to be significant for the gender identities of players of games. Both the toy in general and the avatar(s) itself could represent different gender specificities and different amounts of gender stereotyping, so in our analysis we also took the gender specificity of the avatars into account. Again, we used the three dimensions of gender in this analysis, e.g. looking at the colour of the clothes of the avatar, for the structural dimension we looked at the occupation and the name of the avatar, e.g. whether the avatar was 'Mother Duck' taking care of her ducklings, glove puppet 'Fairy' or a soldier. Similarly, we analysed identity characteristics of the avatar as shown by its actions, such as passivity or aggression. In the end, we added the scores of the game and (if present) of the avatar(s) and categorized the games in three ways: gender specific for girls, gender neutral and gender specific for boys. Gender neutral games either had non-gender specific characteristics or the characteristics of the different dimensions balanced each other.

Following our analysis of the gender specificity of the toys, we analysed them for how gender stereotypical they were. In the introduction to this article, we defined two ways in which we perceived toys as being able to convey gender stereotypes: a game can contain avatars with stereotypical role divisions or characteristics, and/or a game can be marketed to one sex (showing a sexed body or explicitly stating for which sex it is meant) and display characteristics and connotations which point in that direction. We only counted a game as stereotypical if the sex of the targeted user (or of the avatar(s)) was known to the potential buyer and/or player. In that case the toy was rated as gender stereotypical if the sex of the targeted user (avatar) corresponded with the gender specificity of the toy (avatar). The toy was rated as gender bending if the gender of the targeted user did not correspond with the gender specificity of the toy in general. Similarly, we only rated avatars if they have a distinguishable sex, and had corresponding (or counter-gendered) gender stereotypical elements. In addition, we looked at how gender stereotypical the division of roles of the avatars was. Games were depicted as 'gender bending' games if persons in the game were shown in non stereotypical positions, e.g. if a woman is the action hero and the man is in need of rescue. To rate how gender stereotypical a toy is we used a five-point scale where 1 was very gender stereotypical, 3 was gender equal and 5 was very gender bending, and we added the scores of the extent to which the game and the avatar were stereotypical.

How Were Games Gendered?

We analysed the toys of three Dutch toy producing companies: Koninklijke Housemann & Hötte B.V. (also known as 'Jumbo'), Sri Toys and Robo Educational Toys. We analysed available documents on the production process of each company and we interviewed the main person responsible for designing games. Each interview lasted about one and a half hours, was taped and transcribed verbatim, and we then translated relevant quotes into English. For Jumbo we interviewed games design and marketing director Mariëlle Jaarsveld. For Sri Toys we interviewed Rudi Besseling, who was the main designer in the Netherlands and Ferdinand Swart, owner and product developer in Sri Lanka. For Robo Educational Toys we interviewed Anette van den Bogaard, owner and product developer of the company.

The companies differed in various respects. Jumbo was the largest, oldest (over 100 years old) and best known by the general public of the three. The company is run by several directors, has about 120 employees in the Netherlands and has branches in Belgium, France, Germany, Austria, Switzerland and the UK, although the main factory and the design department are all situated in the Netherlands. Sri Toys International is also an international company with about 300 employees. However, almost all of these employees work in Sri Lanka where they produce hand-made wooden and cuddly toys. These toys are designed by both directors, who are helped by design trainees. Robo Educational Toys is the smallest of the three companies, with three employees in addition to the director. They specialise in puppets, specifically glove puppets, puppet theatre puppets and other kinds of puppets meant to engage in role playing games. Two of the three directors of Jumbo are men and most of the people in the production development department are men, though the main person responsible for designing games is a woman. Sri Toys is owned and run by men whereas Robo Educational Toys is owned and run by women.

Table 1: Gender specificity script of the games produced per company (weighed scores in %):

	Toy Company		
Gender Specificity	**Jumbo N=26**	**Sri Toys N=19**	**Robo Educ. Toys N=17**
For girls	12	0	24
Neutral	62	47	76
For boys	27	53	0

We found considerable differences in the kinds of games these companies were producing (see Table 1). More than half of the toys made by Jumbo (62%) can be qualified as gender neutral and they produced more than twice as many toys that are more specifically aimed at boys than at girls. Sri Toys produced more gender specific games for boys and none for girls, whereas the opposite was true of Robo Educational Toys. In terms of how stereotypical the games were (see Table 2), it is

interesting to note that none of the companies produced 'very gender bending' games, whereas all of them produced some very stereotypical games. Robo Educational Toys produced the smallest number of stereotypical games, but also the smallest number of gender bending games of all companies: their games were mostly gender equal. Sri Toys had the largest diversity of stereotypical and gender bending games, closely followed by Jumbo.

Table 2: Gender stereotypical script of the games produced per company (weighed scores in %):

	Toy Company		
Gender Script	**Jumbo N=26**	**Sri Toys N=19**	**Robo Educ. Toys N=17**
Very gender stereotypical	12.5	18	6
Stereotypical	25	35	19
Gender equal	37.5	18	62.5
Gender bending	25	29	12.5
Very gender bending	0	0	0

We expect our method and our selection of these companies to have caused a bias in the analysis. For companies which sell to the retail trade like Jumbo, packaging and advertisements are important, whereas educational organizations are less interested in the packaging or accompanying advertisements, as the children that play with these toys will probably never see these. On the websites of the various companies, this was visible as Jumbo showed all games with their packaging, whereas Robo Educational Toys, and to a lesser extent Sri Toys, only showed the content of the toys, without packaging or advertisements. As we described in the methods section, the intended player was an important factor in deciding whether a game was stereotypical or not. These intended players were usually displayed on packages, so the games of Jumbo will have scored higher on the stereotypical dimension due to our method of analysis. Similarly, we expect the kinds of toys to have influenced our analysis: Robo Educational Toys mostly produced dolls (e.g. hand puppets or larger scale dolls) that were sold individually and not as a set, as was the case with the puppets sold by Sri Toys. As single dolls, they could be stereotypical themselves, but the division of roles between avatars was not possible with single avatars. Again, we expect our method to have been partially responsible for the low number of stereotypical toys of Robo Educational Toys. In short, another way of analysing the toys would probably have resulted in Jumbo producing less stereotypical games then we found, and in Robo Educational Toys to produce more stereotypical games then we found. These outcomes do not contradict but rather strengthen our analysis below.

Explanations for Differences Between the Companies

Several factors could explain why there were differences between the companies in how gender specific or gender stereotypical the games they produced were. The main explanation given is that companies just follow what the market wants: it

could be that the market asks for gender specific games or even gender stereotypical games. While the market for Jumbo was the retail trade, Robo Educational Toys aimed at wholesale traders who sold their games to educational institutions like schools and therapeutic institutes. Sri Toys produced their games for both the retail trade and the educational market. According to the interviewees, games for the educational market need to be gender neutral, and preferably gender equal or even gender bending. As the owner of Sri Toys, Mr. Swart said: "…my toys are breaking stereotypes, that's what they want in educational contexts". This may partially explain why the directors of Robo Educational Toys and Sri Toys designed many gender equal or even gender bending toys. However, we have observed that Jumbo made even more gender bending toys than Robo Educational Toys. Robo Educational Toys did produce more gender neutral games than the other companies, but again Jumbo was not the worst of all the companies in this respect. Similarly, it is hard to see a pattern in how gender specific or stereotypical the games were of the companies that aimed at the retailer trade. It seems that the kind of market each company served was not decisive in whether the games they produced were gender specific and/or gender stereotypical.

Nevertheless, the companies may have believed that they could acquire larger profits by either designing gender specific or gender neutral games. This raises the question which games, gender neutral or gender specific, sell well to children and their parents? Companies might see profit in designing gender neutral games, as they can sell these products both to (parents of) boys and girls. On the other hand, it might be more profitable for companies to produce gender specific games, and some of the directors did indicate that they saw some trends in the market in this direction, specifically towards a greater popularity of toys for girls. How did the companies know about these market preferences? We found considerable differences in the ways in which producers obtained information on the (dis)likes of the children for whom they were designing. All companies, to some extent, used information about which products sold well or some awareness of trends in the games market; in several cases they indicated they heard from the retail traders. However, one of the directors of Sri Toys, Ferdinand Swart, said:

> I don't know at all [what children like]. It is just a matter of trying. (…) Nothing is really known about it. It is just your own gut feeling, I think. I think that the retail trade, our customers, that they don't have a clue either. That they just think 'this seems attractive' and then it goes to the parents. They have to think 'this is really nice!' but the question is whether in the end the children also like it. And that feedback, you only notice after a number of years. Because those people of course won't return the toys if their children won't play with them. Maybe in the end the sales will gradually become less, that is what you might notice.

From this it seems that designers can have only limited information on what parents want for their children from looking at what sells well.

Moreover, we found several indications that companies were in fact more interested in what parents and teachers wanted for their children, than what children themselves preferred. As Anette van den Bogaard, director of Robo Educational Toys, said:

> We do look at how children respond to our puppets when I show them at a school. But in addition to that we speak about the puppet with the teacher. The teacher in the end needs to work with such a doll. (…) so in the end the teacher decides which puppet he feels comfortable with.

Indeed, it is often also the teacher who makes the decision and spends the money to buy the game. Similarly, most games sold through the retail trade are bought by parents, rather than by children themselves. Indeed, in an earlier study, we found a company which tested its electronic game for girls extensively with children. When in the end they had to decide what the colour of the product should be, they used their 'gut feeling' about what parents would like for their girls, rather than the information they had on what the girls themselves liked. So instead of black or metallic, which had been the preference of the girls themselves, the designers decided to make the product purple (Sorensen, Faulkner, & Rommes, forthcoming).

Next to information and 'gut feelings' about what sells well, the companies also used some explicit user representation techniques, such as market research and testing of products amongst potential users (Akrich, 1995). Jumbo, as a large company, invested most extensively in explicit user-representation techniques. According to Jaarsveld, games design and marketing director, the marketing department comes up with some general ideas about what sells well and in which age group there could be room for a new game. Consequently, the design department comes up with ideas, which are fed back both to the marketing department and are tested with children. According to other studies, explicit user representation techniques in general are not that common among companies. In a large scale study among hundreds of companies, Walsh et. al. (1992) concluded that 'fewer than half the firms relied on formal market surveys (…) while less than 10 per cent of firms monitored sales of their own products, at least for new product planning purposes' (p.176). Similarly, Haddon and Paul (1999) found that only larger companies engage in explicit user representation techniques, but 'end users in general were only considered to a limited extent' (p.213). Indeed, Sri Toys and Robo Educational Toys never used marketing surveys and the like, as they regarded their companies as too small for that.

Robo Educational Toys did engage in some user-testing as they went to schools and spoke with teachers about their use of the puppets. In addition, Anette van den Bogaard of Robo Educational Toys described the importance of the 'I methodology' in the design process. This is one of the most commonly used methods in designing products: designers take themselves as exemplary for the user and design a product that they themselves would like, ignoring the multiple ways in which designers are different from the users of their products (Akrich, 1995; Rommes, 2002). Bogaard said: "that is of course not a very commercial strategy, but we do

[use the I methodology]. We look at what we ourselves think is nice for the children."

Stereotypes also seem to influence her decisions to a minor extent, as she described how she did take into account the way a girl and a boy "in general look", referring to the use of more pink colours for the female puppets and more blue colours for the male puppets (see Rommes, 2006 for a discussion of these and other design methodologies). According to the director of Jumbo, they try to prevent using the I methodology or even experiences of the children of the designers as much as possible, as that "would be a dangerous strategy: what one child likes, another one might not". Sri Toys, on the other hand, mostly used the I methodology: "I make what I would have liked to play with as a child" and they relied somewhat on stereotypes and did no user testing. Perhaps not coincidentally, Sri Toys is also the company which made the most gender stereotypical and the least gender neutral games. Moreover, their use of the I methodology may explain why so many of the gender specific toys of Sri Toys are aimed at boys: the two male designers made their toys to fit what they themselves had liked as children.

As all game producers to a smaller or larger extent used the I methodology and/or their own 'gut feeling' about what they thought children would like, it becomes crucial to know who the 'I' who designed these games were. If there was no substantive research or market orientation behind the design choices of the designers of these toys, what opinions the designers themselves have becomes crucial. What personal preferences and beliefs did the designers of the toys we studied hold? What design values were important for them and did these values influence their design choices?[3] Indeed, the differences between the directors of these companies in terms of the values and beliefs behind the toys they produced were great, and could to some extent explain the differences in the gender specificity of their toys. Although for all directors it was important to earn money, they also had other values such as being environmental friendly, "I wouldn't want to produce toys that will be thrown away immediately, that would be bad for the environment", being "historically correct" and being "modern". Some examples of clashes of these values showed how important certain values were for them. For example, several of the directors wanted their toys to look modern, and hence they wanted to have some unstereotypical role divisions. In several toys, this value would clash with the value of being historically correct, so the idea of making a female Native American with a bow and arrows was highly contested within Sri Toys. Similarly, when Jumbo modernized their war game 'Stratego', they changed the sex of the character of the spy, but decided against any other sex-changes of the other characters in the game, as "that would be historically incorrect".

The feminist value we looked at was whether the directors believed that girls and boys are 'naturally different' and whether toys make much of a difference in the upbringing of children as boy or girl. Our assumption is that if a designer's beliefs that there are natural differences, and that toys do not help in constructing these differences, designers will make more readily gender stereotypical and gender specific games than designers who believe otherwise. Whereas the woman director of Robo Educational Toys and one of the two men directors of Sri Toys believed that

gender differences are biologically inborn, the woman director of Jumbo and the other director of Sri Toys felt that toys could have a great impact, and both saw it partially as their responsibility as game developers to provide gender bending toys. So the director of Jumbo and her team consciously chose now and then to represent boys on a package for a game that appealed to female connoted characteristics, and vice versa. Similarly, one of the directors of Sri Toys switched the expected roles of the avatars in some games by, for example, designing a female dentist with a male assistant. Although there does not seem to be a clear effect of these values on gender specificity and the level of how stereotypical the games were in general, it might be that these differences in values held by those who were mainly responsible for the design choices did result in higher numbers of gender bending games for both Sri Toys and Jumbo.

CONCLUSIONS

In this article, we have argued that games can be analysed on two different scales: they can be more or less gender specific for girls or boys and they can be gender stereotypical, gender equal or gender bending. We have designed a method to analyse games on these two scales. For analysing the gender specificity of games, the symbolic, identity and structural dimensions of these games need to be graded separately for the game as a whole and for avatars in the game, if they are present. The scores for these three dimensions for the game and the avatars taken together decides how that game can be graded on the scale of gender specific for girls, gender neutral (with no clear gendered aspects or with mixed aspects) or gender specific for boys. For a game to be gender stereotypical, sexed bodies need to be present, either in the form of avatars, or in the form of pictures or of descriptions of the intended players. Only if the sex of the bodies shown point in the same direction as gender specific elements, have we scored that game as gender stereotypical, whereas if they pointed in different directions, we called them gender bending.

We have made the distinction between these two scales as we expect gender specific games to have a different effect on players than gender stereotypical games. With the help of literature we have shown that gender stereotypical toys reinforce gender differences and inequalities. For gender specific games, the effects are not as clear cut: if a boy plays with a gender specific game aimed at girls, this may even diminish gender differences. To explore whether this is indeed the case, we interviewed and observed girls playing with gender specific computer games for boys. Although they had a lot of fun playing with these games, we also found that all of them, to some extent, struggled with their own playing behaviour. They came up with extensive explanations for why it was alright for them, as girls, to play with these ‘boys’ games. Moreover, several of them found that there were limits to how masculine they could act through this play behaviour. We conclude that gender neutral and gender equal or even gender bending games are preferable from a feminist perspective.

To find out why companies would or would not produce stereotypical or gender specific games we have studied three toy producing companies in the Netherlands. We have shown that they vary widely in how specific or stereotypical the toys are

that they produce. We found that contrary to popular opinion, market influences were not decisive in whether companies produced gender specific or gender neutral games. Although companies do produce 'pink games for girls', this is not necessarily the result of 'girls ask for it' but rather the result of the 'gut feeling' of producers of games about what parents and other adults will buy for girls (see also Castell & Bryson, 1998).

If we want to intervene in the design process so that more gender neutral, gender equal or even gender bending games are produced, two approaches seem most promising. Firstly, it might help if companies would adopt user representation methods through which they gain a more diverse understanding of what children appreciate. Secondly, we found that the feminist values of those that are in charge of the design of games may affect the percentage of gender neutral or gender bending games a company produces, as Jenkins and Cassel (2008) also tentatively concluded. Those designers that believed that toys could influence gender identity and behaviour of children consciously chose to design more gender neutral and gender bending games. As to how interventions in the values of designers can best take place, more research is needed, but some suggestions could be derived from work by Allhutter and Hanappi-Egger (2006). The main element behind the interventions they suggested is to make designers aware of their own feminist or other values and of the potential consequences of these values. Based on this research, we agree that this may be one of the main targets for change.

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ENDNOTES

[1] Throughout this article we will use 'toys' and 'games' without discriminating between them.

[2] We tried several methods to find girls who played computer games, but found the snowball sampling method the most effective: we asked girls who played computer games if they knew other girls who played computer games

[3] In previous work we have observed that the presence of women with feminist values in important positions in an organisation may influence the outcome of the product (Sorensen et al., Accepted), see also Friedman for the importance of values in the design of technology (Friedman, 1997).

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