

COPYRIGHT

Copyright © 2003 by authors, Utrecht University and Digital Games Research Association (DiGRA).

All rights reserved. Except for the quotation of short passages for the purpose of criticism and review, no part of this publication may be reproduced or utilized in any forms or by any means, electronic or mechanical, including photocopying, filming, recording, or by any information storage and retrieval system, without permission in writing from the copyright holders.

19. POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

Laura Ermi
Frans Mäyrä

ABSTRACT

The primary aim of this paper is to look into the game related practices and significances of games. This perspective is applied to examining the pleasures derived from different games and to analyse the different strategies developed by children and their families to situate and control game playing. Research was conducted among 10-12-year-old children in Finland during spring and summer 2003. Sample of 284 survey questionnaires filled out by children and their parents provides an overview on the subject and the basis for 15 thematic interviews. It is hard to point towards any single element in games as the most powerfully engaging one, but the imaginary worlds provided by games seem to have an important role in offering children possibilities for experiencing things otherwise impossible. In terms of control, there does not seem to be any severe conflicts or serious troubles currently surrounding games in homes.

KEYWORDS

Children, digital games, game cultures, game playing, attractiveness, holding power, control

INTRODUCTION: RESEARCHING POWER AND CONTROL OF GAMES

The often-discussed "stereotypical picture of the lonely boy playing aggressive computer games alone in his room" [8] is too narrow when faced with the realities of today's game cultures. While the existence of adult game players and the cultural status of games in general, are gradually becoming recognized, the issue of children's relationship to digital games is far from clear and resolved.

There is a long tradition of children-focused game research but most of that is coming from the media effects research tradition (see, e.g. [3]). There continues to be plenty of debate, with mostly humanistic cultural studies on the other side, and clinical psychologists or concerned educators on the other side, and the oppositions tend to become aggravated. Rather than continuing this debate, we suggest an alternative approach, where children's game playing is regarded as complex and multidimensional as any human activity. Instead of presenting generalized claims where expressions like "games are" or "games influence" abound, we look at particular games, specific individuals and groups of players, and try to understand their relationships. It is our belief

that by taking such a holistic approach, we will be able to produce a more diverse and multidimensional picture of games and their significance.

The two key concepts that we use to sort out the complexities of children's relation to games are power and control. Games are reported to have remarkable holding power in terms of their attractiveness: discourse of addiction surrounds game playing in public discussions. Many statistics show that people of many ages enjoy games, often many times a week, in sessions that can go on for hours (e.g. [4, 7, 10]). But games are not always fun; often games are immensely hard to master and create lots of frustrations in the learning process. Yet, games maintain their high popularity. Clearly, there are some reasons that help to explain this popularity; rather than stipulating the existence of a single, overall cause, when starting our study we took an open attitude: that there are probably several, and for different people in different life situations dissimilar reasons for their attraction to digital games. We also suspected that there might be some individuals or groups that would have problems that are games-related or that surface in this context. Therefore, our two terms are open-ended; 'power' of games signifies all the various reasons why people feel attracted to games, while 'control' of games is used to designate all those practices, rules or norms that people utilize while managing the power of games as a non-disruptive element in their lives.

Some researchers have begun to pay attention to the ways in which games can further the learning of hand-eye coordination, object manipulation, mental representation, memory and other cognitive skills (e.g. [5], cf. also [2]). While interesting side effects, children are hardly drawn to videogames in order to develop their manipulation skills. They do what feels

fun or exiting to them. One issue that is not sufficiently dealt with in the discussion surrounding digital games is their status as fantasy. A work of fiction relates to imaginative processes and capacity to separate between make-believe and reality that develop at quite an early age [9]. Most games also display their fictional distance from the real lives of their players openly: they provide the players opportunities to enact and share a fantasy of something that is interesting and tempting, particularly because it is dangerous, impossible or forbidden in the real world. Fairy-tales' sometimes aggressive fantasies have been interpreted to play an important role in individual's development and inner processes [1] and even if games cannot be directly equated with fairy tales because the narrative aspects in most games are secondary to their gameplay, players are as sense-making beings never capable of escaping some symbolic or semiotic processes being activated. The view where power of games is related to their capacity to imaginatively transport player to another world where the real world restrictions do not apply, is named here as **freedom-by-imagination thesis** of games' attractiveness.

Some of the most popular games of all times, like *Doom*, *Counter-Strike* or *Grand Theft Auto III* are very violent in their character. Gerard Jones [6] has argued for a view on children's relation to digital games that could be named *empowerment thesis*. According to this approach, even the most violent games and distasteful subject matter may have some functions that relate to their power. Even if not backed up by large-scale psychological studies, Jones presents compelling individual stories on how games may help "a timid adolescent tap into her own bottled-up emotionality and discover a feeling of personal power", or how the 'dark side' of popular culture in general may, when shared among like-minded, alleviate the angst.

POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

236

Games as well as any other media products probably derive much of their powers from other areas: having many social and emotional uses as social capital, in the processes of identity construction, etc. Games have become integrated to the life of present-day young adults; avid gamers since childhood, they use games to spend time with their friends, get some diversion in a boring day, or just for fun and pleasure [7].

THE RESEARCH METHODOLOGY

We combine both qualitative and quantitative approaches in gathering and analysing the data. Sample of 284 survey questionnaires filled out by both the children and their parents provided an overview on the subject and the basis for 15 thematic interviews, where the child and the parent were interviewed separately. The interviews, supplemented with some activation methods such as illustrations, serve as the main research method. In the survey we asked the parents basic facts about the family and questions about digital games' role in the family life and parents attitudes and opinions towards them. For the children we had a shorter survey form to fill out and the questions focused mainly on the playing of the games. We asked children how often and with whom they play, what are their favourite games and how do they perceive some issues related to controlling of the playing. Both questionnaires ended up with an invitation to participate in a thematic interview. Interview themes dealt with favourite games of the child, playing alone and with others, positive and negative consequences of playing, family's rules and practices in terms of playing and violence in games. In this paper we present preliminary results on the issues of power and control from the viewpoint of the children, thus leaving other games-related topics and the interviews of the parents still aside.

Table: Children's age and gender in the survey and interview samples.

		10 years	11 years	12 years	Total
Survey	Girls	55	68	32	155
	Boys	34	73	2	129
	Total	89	141	54	284

Interview	Girls	3	3	2	8
	Boys	3	4	1	8
	Total	6	7	3	16

Of the children participating in the survey (n = 284) there were 55% girls and 45% boys. About a half of the children were 11 years old and the rest either 10 or 12 years of age. (See table above). From the survey sample we chose 15 families to participate in the thematic interviews trying to get different kinds of players and families. In practice, a total of 16 children were involved in the interviews, because in one of the families there were actually two children who had returned the survey questionnaire.

POWER OF GAMES

The power of games seems to be deriving from several different kinds of sources. In addition to unveiling some of the great real-life diversity in children's lives with games, this research aims to point towards some joint characteristics.

Survey Results

Playing digital games seems to be quite a central activity among the children although it is also possible that more of those who do not play digital games at all did not answer the questionnaire. Approximately 98% of the children taking part to the survey played digital games at least sometimes and most of them once a week or more often (see figure 1). All the children who did not play digital games at all, were girls, and there were more boys

who played daily or almost daily than girls. Girls played usually once a week or less often.

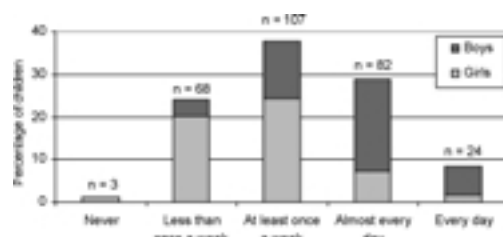


Figure 1: The frequency of how often children play digital games.

Most of the children taking part in the survey were able to mention the names or genres at least some digital games they especially like. According to the results, the most popular among the children were action and adventure games (see figure 2), content-wise there was a vast range from *Harry Potter* to *Grand Theft Auto*.

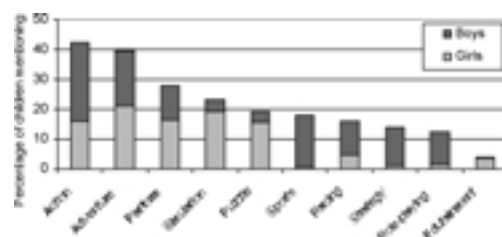


Figure 2: The popularity of digital game genres among the children.

Adventure is a special category in a sense that there seemed to be no pure adventure games. Rather adventure was a typical crossover element in games, as in the popular *Kingdom Hearts*, which includes some role-playing features and real-time action. Different kinds of *Mario* games were the most popular among platform games and also *Crash Bandicoot*

and *Spyro* were often mentioned. By far most popular individual game title was *The Sims*, also explaining the overall popularity of simulations genre. Sports and strategy games were mostly played by boys who stated their favourite games to be e.g. *Tony Hawk's Pro Skater*, *FIFA* and *NHL* games in the sports game genre or *Age of Empires* in the strategy games. Boys also liked role-playing games such as *Final Fantasy* and *Diablo*, and different kinds of racing games. In addition to simulations like *The Sims*, girls played puzzle games and edutainment games more often than boys.

Thematic Interviews

Children stated that playing digital games is often an easy and quick solution if there is nothing else to do. It can also serve as social lubricant providing topics for daily discussions and reasons for inviting friends over. But besides that several other sources of pleasure could be found by analysing the interviews. Many children stated that their interest in digital games varies. Often it is the latest game that holds attention for some time and playing it can be very intensive for a while. We named this particular aspect as the power of **novelty and spectacle**: successful and original games often offer something out of the ordinary, previously unseen and not yet experienced.

It also varies quite a lot, the flair of a new cool game is soon lost, and then there is already a new game at some friend, and then you will also soon buy another new game to yourself, and then that new one is your favourite game, so there are quite a lot of them [favourite games]. (Boy, 11 years.)

I cannot really say... it is probably because it [*The Sims*] is somehow different from all the other games, as I haven't seen any other game quite like it before. (Girl, 12 years.)

POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

238

In accordance with the popularity of action games that emerged from the survey results, also interviewed children discussed the pleasures of fighting. There were many different ways they worded this specific source of games' power, but it can be named **excitement of combat** in general terms. It is noteworthy that not all combat is equally fascinating: playing against a computer opponent is not as fun as confronting a friend in a multiplayer match. Few children were interested in violence per se, but rather felt that violence made the game experience more exiting. Children who played violent games stated that excessive, mindless violence against people is not what they want to have in games, but they rather face various kinds of monsters and non-human characters. The plot of the game also has an important role here and children want to see the violence as a part of the struggle and adventure of the game, not as a separate element.

If, for example a friend of mine says that I can surely win you, then it is fun when you play against her, and you might even beat her. (Girl, 11 years.)

Those games where there is too much shooting and no adventure at all, those are quite boring. And even if in the *War of the Monsters* game there is no adventure in the multiplayer game, it is basically like boxing and that is also fun. But that kind of shoddy shooting of innocent civilians, that I think is quite stupid. (Boy, 11 years.)

It is of course more exciting to play a shooting game than *Sophie's World* [a game based on a philosophical novel] as in that *Sophie's World* there is no shooting or anything like that, it is only about solving problems. (Girl, 11 years.)

The children often discussed **game characters** as a central element of the games they played. Fierce characters like monsters could add to the excitement of the gameplay but also other kind of characters, funny and cute for example, could be seen as fascinating. Children paid attention especially to the appearance and abilities of the characters when choosing their favourites. Also the individualization of them was mentioned by some of the children to be important: they liked to give names for their characters themselves or to be able to develop them during game playing.

Especially those wide worlds, those that have one huge world where you can move around and where the character can develop on the way. So that even if you have played through the game already, even then you could still make it [the character] better. And a really large and long-lasting game would be good. (Boy, 12 years.)

Adventure seems to be a key element in many of children's favourite games and related to several interconnected factors that children identified and discussed. The power of **persistence** seems to be central: it is fascinating to get immersed into a series of game sessions and experience continuity every time one plays the game. Other factors were the pleasures derived from **exploration** and **advancement**: these kinds of games are strong in rewarding players who put a sustained effort in researching the game environments. Finding new places and advancing in the game feels rewarding and offers experiences of achievement and game flow. It is essential that the level of difficulty is adequate: games that are too easy as well as games that are too difficult soon gather dust on a shelf. Children analyzed quite carefully the various ways in which the level of challenge was balanced in games and how it changed and increased in good games. They also defined

playing games as more active and “stressful” pastime than watching movies for example. This seems to be a somewhat two-fold issue. On the other hand children felt that one of the main rewards in games is the possibility to do and decide things by oneself, but on the other they were especially irritated by getting stuck and being unable to advance despite of repeated efforts.

I play them [rally games] with the hardest difficulty setting but they are still too easy. There is no opposition at all. Except that formula game, for example, that is a bit too difficult. (Boy, 10 years.)

Every part [of a game] is fun in the long run, except if it is a really hard part, but even then there is certain fun in getting through that part in the end; what is really drab is when you get stuck. (Boy, 11 years.)

Many games focus also on another major factor, the particular pleasures of achievement related to **unravelling of puzzles** or overcoming mental challenges. Children liked solving puzzles in games even though the basic puzzle games were not very popular. Puzzles embedded in story and adventure were seen as much more interesting than puzzles outside of that kind of context.

Simulation games and many strategy games derive their powers from yet another source: the pleasures of **building, creating and controlling**. Children liked the possibility of contributing to the creation of the game world. For some, the most engaging aspect of *The Sims*, for example, was building houses and for some the possibility to control the people living in that house. On the whole, children enjoyed managing and examining the houses, armies and other things they had created themselves, even though they also

felt that there had to be a continuous flow of interesting tasks in the game.

Well that is at least, when you can see it, when you have done so much [units] and then you can put them into columns or march towards the enemy, then that is cool, or when you have lots of some [unit] type and the enemy attacks, then there are lots of those same kind of soldiers swarming everywhere, then that is cool, too. (Boy, 11 years.)

Another powerful element related to at least certain games was **humour**. For example funny characters like a fat policeman on a skateboard or jokes made by the characters of action games can add to the fun of the game. The fun can be of the traditional comic kind, but some children also emphasised that it is fun to see and do things that are impossible in the real world. Games humour is a large research field in itself.

And then, there has to be something, even if it is some serious game, even then it has to have something funny once in a while. (Girl, 11 years.)

For some players, the theme of the game might be as or even more important than other qualities of the gameplay. Particularly in sports games the **relation to one's hobby or interest** seemed to be one of the main reasons for games being motivating and attention-grabbing. For example, games of ice hockey, golf, skate boarding and horse grooming were often mentioned to be liked because they were related to the child's own interests.

Children considered the **audiovisual quality** of the games to be significant. Lack of audiovisual or technical sophistication could essentially weaken the gameplay experience. “Realistic” graphics were important for children in a particular sense

POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

240

of making the game world look “real” enough for them to immerse into. Camera angles were associated with the playability of the game but the style of the game was also seen as important. For some children colourful fairytale worlds was what they wanted to see, and for some it was just the opposite: that kind of graphical style felt too childish for them.

On the whole, the children considered the **imaginary world** to be central in the games. They preferred extensive worlds where they were free to move around, find new places, perhaps collect something and face new challenges. They stated that the more there are possibilities and things to do, the better. It could be fun just to explore the world but also having meaningful and diverse tasks were considered important. One aspect of the imaginary worlds was that children could do things there that are not possible or even acceptable in everyday life, for example beating up a policeman or two children living in a big house without any adults.

That is why I actually like playing, that it creates, or that game makers can create a kind of real world, where you can do stuff you cannot do in the real life. (Boy, 11 years.)

Finally, it was of course also true that the **winning** of the game was important for many. Besides the gradual advancement discussed earlier, the end of the game and especially the final closure were seen as significant. Many of the children’s game-related memories dealt with this kind of situations, like beating up the last monster or receiving a prize for their achievements. Uncertainty of the final outcome was quite an important factor in the overall suspense of the gameplay and also motivated children to continue the game to see how it would turn out.

So, they have got exciting parts, like can I win it and like that, or is that fellow [a character] going to die or something. (Girl, 11 years.)

When I won the last contest in that street rally then there was this guy who started talking that now you are a world champion and like that. (Boy, 11 years.)

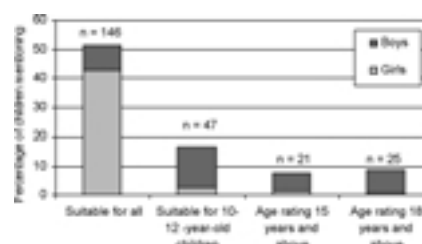
CONTROL OF GAMES

The control of children’s game playing is a multifaceted issue, where there are several actors: the children themselves, their parents, siblings, friends as well as cultural norms and organisations that set the age ratings for games. In this paper we discuss control only from the viewpoint of the children, even if comparisons with the parents’ views would also be interesting.

Survey Results

According to children, parents more often control the time used for game playing than the content of the games: 48% of the children stated that their parents decide how much they can play, whereas 29% stated that parents decide what kind of games they can play. Children’s favourite games were mostly games that were rated as suitable for all ages and also some of those rated suitable for their own age group (see figure 3).

Figure 3: Percentages of children mentioning age-rated games among their favourites, classified according to the highest mentioned age rating.



Overall 16% of children mentioned among their favourite games some game that has an age rating of 15 or 18 years. By far the most popular game in the “suitable for over 18-year-olds” category was *Grand Theft Auto* and most popular “over 15-year-old” rated games were *Metal Gear Solid*, *Diablo* and *Smackdown*. Those games were mentioned among favourites mostly by boys whereas only few girls mentioned them as their favourites. It did not make a difference if the children had a computer or a game console in their own room or not, although boys did have one more often than girls.

However, according to our survey results it seems that controlling the game playing is not a major issue in families. A majority of children was quite happy with the rules they have; nevertheless, there was also a group (11%) that felt that they would like to play more than they were allowed.

Thematic Interviews

Families differentiated greatly in terms of their game cultures. For some children there were no time limits at all and for some the limits were very strict. When children were free to decide how much they play, they usually did not play more than two hours in one session. They stated that they would not want to play more than that, except perhaps occasionally. The total amount of time spent with games varied a lot because some children were allowed to play digital games only once a week and for some it was possible every day. In some cases children had to “earn” the playing time by doing housework or by engaging in outdoor activities.

When there were several children in a family, an interesting issue emerged: how to interpret the situation when the child is watching someone else playing? Different families had adopted divergent attitudes towards whether it was also “playing” or not,

which in turn had consequences to the social dimensions of game playing. If the time spent on watching playing was reduced from the children’s own playing time, they were likely to play alone and thus the social aspects of playing were reduced. On the other hand, if there are several children in a family and besides their own playing time they also watch when their siblings play, it may result in several hours spent daily engaged with digital games, in a manner or another.

It was common that certain obligations like homework and family dinner were primary compared to the time spent on playing, and that playing was not allowed late at night. From the children’s point-of-view the rules designed to control the game playing could be quite complicated. For example if the parents had been separated, the rules for games could be very different in child’s two homes. More often, rules were different for some friends of the children and the time limitations did not extend outside their own home. Children might also go to their friend’s home to play games that were forbidden at their own homes. Although the children usually quite carefully followed given time limits, they played certain games covertly without their parents’ permission and knowledge.

Always when someone opened the door I pressed Esc, so that game paused, and jumped up to see who it was. (Boy, 10 years.)

According to the interviewed children, their parents do not involve themselves virtually at all with the games the children play and families usually do not discuss them together. Often children stated that their parents do not know much about the games and do not even want to. So limitations the parents set on the content of the games are often based on their recommended age ratings. For the interviewed

POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

242

10 to 12 year old children it was typical that games rated suitable for 15-year-olds were permitted whereas games rated suitable for 18-year-olds were forbidden or at least considered more carefully.

Children did not always know on what basis their parents restricted the amount or the content of the game playing. The age ratings of the games caused even more confusion among the children. They felt that in some cases the rating is set too low and in many cases too high compared to the content of the game. Children had two kinds of ideas about what the basis for the rating could be: either it is about the violence or the difficulty of the game. When they felt the rating was based on the difficulty level they often protested that on that basis that they should be well capable of playing difficult, and in that sense “mature” games. On the other hand, when they thought the rating was based on the violence level of the game, they usually agreed with it in principle, unless they had seen the game and felt that there was not actually that much violence. We asked the children also about what kinds of games they felt would be unsuitable for them and they typically mentioned games including various kinds of horror elements such as vampires or zombies. Children did not want to see mindless and boundless violence and many of them particularly did not want to see blood, or humanlike characters being killed. However, what might seem violence for an outside observer, was often seen by children just removing obstacles, not real killing, for example. Similarly, dying in games was typically seen as “losing a life”, which can be seen as pointing towards the distinction children have made between make-believe and reality. Nevertheless, also the games-effects discourse surfaced sometimes in children's own thinking as evidenced in the interviews, and they said that it could be possible for someone, usually someone younger, to be negatively influenced by the violent games.

It is bad to a child if there are lots of games where blood just splatters and then there are lots of ghost and mutant games, and like, I don't like those at all. I think those are bad games. Most kids play them and that is not good for them at all. (Girl, 11 years.)

The children often talked about their younger siblings or about themselves many years ago, when asked about the control of game playing. According to them, they used to have some games that were scary but that are not so for them anymore. They told also that their younger siblings often protest against the rules, play too much or are in danger to become addicted to games. Even if the limitations set by the parents were generally accepted by the children, they often felt that they were also mature enough to handle their own game playing in terms of amount and content.

But some of those younger players or those who have just started playing, they can also play longer even if mom asks to come and eat, they just continue playing, and someone can get angry and that is no fun any more. That is a kind of addiction, but generally those who are older than ten years, they do not get addicted any more. (Boy, 12 years.)

It's lucky that I play only that kind of games that are not bad for me, so that I avoid those games, which are not good for me. (Girl, 11 years.)

Perhaps a little surprisingly, children were quite happy about the rules their families had on game playing even if the rules seemed quite strict. Some of them even mentioned that it is good to have rules to help them control the playing, especially the amount of time spent on it. The rules set on the content of the games caused a bit more resistance, possibly

because children were not always able to see any basis for these restrictions.

I just wonder as my mom won't let me have such games which my friends always have, those are such combat games, so my mom won't let me buy those even if I have a PlayStation. (Boy, 11 years.)

CHILDREN AS THE ACTORS OF GAME CULTURES

To summarize, there were several reasons for game playing for our child informants, and it is hard to point towards any single element in games as the most important one. One repeated explanation given by children for why they play games was the need for fun and diversion. Playing was perceived as fundamentally gratifying activity in itself. The digital games did not stand out or were not differentiated in any essential sense from the other toys that a child might be spending his or her time with. Majority of elements that were identified as relating to the power of games were characteristics of good game design or game-play, e.g. the suitable challenge level, interesting in-game tasks and persistence of an extensive game world. The pleasures derived from learning, advancing, mastering and manipulating contemporary digital games seem to be inherent to our nature as *homo ludens*, playing humans. The rich audiovisuality, simulations and controls of contemporary digital entertainment just bring this fundamental dialectic of challenges and rewards to a new era.

More in-depth interpretations that would give reasons why game playing is pleasurable would demand extended analyses that go beyond the scope of this paper. However, some of our findings seem to give at least indirect support to the empowerment and the freedom-by-imagination theses. It seems that in the context of digital games it was not so much about identifying with the game characters and thus vicar-

iously experiencing their powers, but rather the immersion into the imaginary game worlds that offered the possibilities to be free from real life restrictions. So at least part of the games' power can be related to players' empowerment or imaginative liberation.

In terms of control, there does not seem to be any severe conflicts or serious troubles currently surrounding games in homes. However, games are indisputably very important for children, while still being mostly not so familiar for their parents, leading to a cultural gap. Negotiation and utilization of games as a shared element of life, where both parents and children would be competent and allowed to contribute, is mostly not yet reality. Nevertheless, the families we examined had devised quite highly evolved schemes on managing and controlling games' powers of attraction. Interestingly, quite many families had similar, one to two-hour maximums for the permitted daily game playing time. This is probably due to the typical socially determined rhythms of family life, rather than to some jointly established framework or discourse of games' control. Some families had also harnessed games' powers of attraction for some "more healthy" or "utilitarian" purposes, including trading time spent doing domestic work or outdoor exercise for game playing time.

This paper does not take sides in media-effects debate per se - our research points out that also children are aware of the debate that is surrounding games, even if they do not perceive any negative effects in their own game playing. Such worries were articulated in terms of other, or smaller children, who perhaps do not have such capabilities of controlling and directing their game playing that these children felt they themselves possessed. It seems that our 10 to 12 year old informants are in the

POWER AND CONTROL OF GAMES: CHILDREN AS THE ACTORS OF GAME CULTURES

244

process of developing ways to manage their own relation towards different games.

In conclusion, the image of a child in contemporary game culture that emerges from our research is not one of helpless victim. On the contrary, many children seem to be very articulate about their preferences and capable of sharply criticizing games, as well as in valuing their strengths and relishing their entertaining, exciting, or humorous aspects, as well as their various mental or skills-related challenges. The total significance of games for children is related to many different aspects of their lives and children can be perceived to be actively contributing to this life and culture, as well as being immersed in its textures.

ACKNOWLEDGEMENTS

The research is funded by the Finnish Ministry of Transport and Communications, Nokia Corporation and Children and the Information Society Research Consortium. We would particularly like to thank researcher Satu Heliö for her contributions in this research project.

REFERENCES

1. Bettelheim, B. *The Uses of Enchantment: The Meaning and Importance of Fairy Tales*. Vintage Books, New York, 1975/1989.
2. Downes, T. Playing with Computer Technologies in the Home. *Education and Information Technologies* 4, 1 (1999), 65-79.
3. Durkin, K. *Computer Games: Their Effects on Young People. A Review*. Office of Film and Literature Classification, Sydney NSW, 1995.
4. Fromme, J. Computer Games as a Part of Children's Culture. *Game Studies* 3, 1 (May 2003). Available at <http://www.gamestudies.org/0301/fromme/>.
5. Greenfield, P. M. The Cultural Evolution of IQ. In Neisser, U. (ed.) *The Rising Curve. Long-Term Gains in IQ and Related Measures*. American Psychological Association, Washington D.C., 1998, 81-123.
6. Jones, G. *Killing Monsters: Why Children Need Fantasy, Super Heroes, and Make-Believe Violence*. Basic Books, New York, 2002.
7. Jones, S. et al. Let the Games Begin - Gaming Technology and Entertainment among College Students. Pew Internet & American Life Project Report, Washington, 2003. Available at http://www.pewinternet.org/reports/pdfs/PIP_College_Gaming_Reporta.pdf.
8. McFarlane, A., Sparrowhawk, A., & Heald, Y. Report on the Educational Use of Games. Department for Education and Skills, TEEM, Cambridge, 2002. Available at http://www.teem.org.uk/resources/teem_games_in_educ_full.pdf.
9. Pavel, T. G. *Fictional Worlds*. Harvard University Press, Cambridge (Mass.) & London, 1986.
10. Yee, N. The Norrathian Scrolls: A Study of EverQuest. Version 2.5., 2001. Available at <http://www.nickyee.com/report.pdf>.