No Worries? Game Research in Denmark 1984-2014

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However narrow or wide its demarcation might be, following the establishment of game studies as an organized, interdisciplinary field (cf. Aarseth, 2001) and the establishment of the Digital Games Research Association (DiGRA) in 2003 (DiGRA, 2012), the academic activity of studying the entertainment phenomena colloquially known as *games* has gained a visible presence in universities across the industrialized world. Although research on games and play has existed prior to this upspring of game studies (Bateson, 1955; Caillois, 1961; Huizinga, 1971; Avedon, 1971; Sutton-Smith, 1997), the demarcation of game studies as a field of study runs in parallel with the relative popularity and economic success of the digitally-mediated games in software packages usually known as video/computer/digital games (Aarseth, 2003, p. 1). The increase in academic institutions that employ scholars who research games and gamers therefore motivates a retrospective that traces the history of computer game research. Concurrently, it is prudent to uncover how particular histories of game research occur in regional and local contexts (Wolf & Iwatani, 2015; Liboriussen & Martin, 2016). As scholars situated in a Danish context, we look backwards into the local history of Danish computer games research across the different national academic institutions that have or have had scholars who studied the phenomena known as *computer games*.

Of course, research focused on computers and computer games did not start in 2001, but some five decades earlier. The first research effort involving a computer game was Alexander Shafto "Sandy" Douglas' doctoral dissertation on human-computer interaction (Douglas, 1954) at the University of Cambridge, in which he developed one of the very first the first computer games, *Noughts and Crosses* or *OXO* (Douglas, 1952), a tic-tac-toe simulator, in 1952.

While there has been scientific work on games in the decades that followed (such as Ken Thomson's famous initial development of Unix in 1969, motivated

by his need for a better platform for his game *Space Travel* [Thompson, 1969]), the first proper research on the consequences of video gaming appears to be Thomas W. Malone's pioneering PhD dissertation on games and learning from 1980, *What makes things fun to learn? Heuristics for designing instructional computer games*. Malone was clearly not concerned with social problems related to gaming, but instead identified several positive aspects that make computer games potentially useful in learning contexts, emphasizing the key traits *challenge*, *fantasy* and *curiosity*. Challenge and curiosity perhaps speak for themselves, but with fantasy and his contrast between intrinsic and extrinsic fantasies, Malone is referring to the relation between the structural and the representational and thematic aspects of games, and thereby he pioneers a fundamental conceptual distinction in game studies to come, the much-discussed and endlessly reinvented division between the semiotic and the mechanic aspects.

Not much later, in May 1983, the first scientific symposium was held, *Video Games and Human Development: A Research Agenda for the 80's*, organized by the Harvard Graduate School of Education, with no less than 110 attendees. Among the findings and claims presented we find evergreens such as games "teach a range of other important intellectual skills" (Butterfield, 1983, para. 3) and "games actually promote socialization among peers" (Zito, 1983, para. 8). Patricia Greenfield, developmental psychologist from UCLA, predicted prophetically that computer games would replace television, and when we look at all the entertainment uses of today's game consoles in the living room, we see that this indeed has happened. These boxes are not just used for games, but also for the Internet streaming of live and recorded content (Youtube, Netflix, Twitch, etc.) that has marginalized old-fashioned cable or broadcast TV. Interestingly, in both *New York Times*' and *Washington Post*'s reports on the conference (Butterfield, 1983; Zito, 1983) it has been pointed out that despite the somewhat controversial topic, there has been no concern among the scientists presenting their papers, only optimism with regard to the positive potential of computer games, for homework, health and convalescence and for cognitive skills. The journalists also have pointed out that most of the research presented was from California, as was the very generous funding, 40,000 USD (around 100,000 € in 2017), sponsored by Atari's Institute for Educational Action Research. Today, computer game research results are much more divided between positive and negative effects, but in those early days, and despite contemporary lay concerns, it seems there has been little or no worry among scientists. It would be worthwhile, but far beyond the scope of this article, to investigate the geographical differences as well as the spread of game-critical vs game-positive research, not to mention their respective funding sources. Are there ideological interest groups at play?

The middle 1980s also saw the first humanities research on computer games, notably the PhD dissertations of Mary Ann Buckles (1985) and Brenda K. Laurel (1986). While neither dissertation focuses on social concerns, Buckles' is still interesting from a concern perspective. In her research on the first adventure game (Crowther and Woods' [1977] *Colossal Cave Adventure*), Buckles argued for the genre's cultural and artistic potential, not so much demonstrated as promised by the early game she analysed. However, while engaged in writing her dissertation, Buckles faced severe resistance from her dissertation committee, and after finally receiving her degree, she left academia in frustration to start a new career as a massage therapist (Erard, 2004). This very early example is still not atypical of what young researchers, three decades later, are facing in research environments where games are not considered proper investigative subjects, although, as we shall see, in Denmark and Scandinavia not so much.

The 1990s saw both more attention to social issues and also the first notes of concern, as witnessed by Eugene Provenzo Jr's *Video kids: Making sense of Nintendo* (1991), which was among the first to focus on aggression and sexism, while simultaneously discussing games' potential for education.

In light of this early history, Denmark did not arrive late to the game research table. The first article was Peter Bøgh Andersen's *Elektriske historier* (Electrical stories), in the magazine *Hug!* in 1984, the same year that the very first research article on adventure games, by Niesz and Holland, was published in the international journal *Critical Enquiry* (Niesz & Holland, 1984). Bøgh Andersen (1945-2010) would go on to become the grand old man of Danish computer game research, with both critical and design/development efforts over many decades. His pioneering doctoral dissertation on computer semiotics from 1990 (Andersen, 1990) would use computer games as one of the main empirical foci. The most active pioneer, however, was Jens F. Jensen, with 25 articles in the early years of 1988-2001, or 38 per cent of the total output in that period!

Denmark holds the honour of hosting the first international conference on computer games, as the 1983 Harvard symposium was merely a national event. *Computer Games and Digital Textualities* was held at the IT University of Copenhagen in March 2001 and organized by scholars Lisbeth Klastrup, Susana Tosca, Jesper Juul, Anker Helms Jørgensen, Raine Koskimaa and Troels Degn Johansson, all from said institution, but with international speakers and participants. Denmark also saw an early national organization of its game researchers, in the now defunct association Spilforskning.dk (2002-2008). The IT University of Copenhagen also formalized its research on games, which had been pioneered by then PhD

student Lisbeth Klastrup as early as in 1999, in the shape of an international research centre, the Center for Computer Games Research, in June 2003, and with Klastrup's PhD (2004) successfully defended at the same time.

All the Danish universities conducted substantial game research in a number of areas at a relatively early stage and notably students at Copenhagen University's computer science department developed the important early text-based MMO *DikuMUD* (Hammer, Seifert, Stærfeldt, Madsen & Nyboe, 1991). Denmark and the Nordic countries have always been in the forefront of digital media research. In 1973, Norway was the second country after the USA on the Internet/Arpanet and provided the uplink for the UK (NORSAR, n.d.). In addition to the generally high level of digital technology in the region, another important reason for the pioneering success of game research in Denmark, as well as in Norway, Sweden and Finland, was the fact that Nordic PhD programs in the 1980s and 90s were much more liberal in letting the students choose the topics of their dissertations than their Anglo-American or Continental counterparts. A pioneering student in the humanities would not be hindered by a conservative department or micro-managed by a zealous supervisor, at least not to the extent that would be the case in less liberal academic cultures, as witnessed by the case of Buckles. The Nordic PhD-like degrees (e.g. Dr. Art. in Norway) were quite new at the time, modelled on the German system with minimal supervision, but in contrast to the German system with the freedom to succeed or fail entirely placed on the candidate and in an academic environment much less hierarchical than the German one. In addition, the three- or four-year periods set aside for the doctoral work usually would not include several semesters or years of coursework, so that the doctoral candidates would have two to three years fully devoted to producing a monograph.

As the PhD students became professors, they would be in a very different position than most of their colleagues internationally, who would come to games in their post-doc or tenure-track phase, having spent their formative years as researchers working on something else. This advantage and head start afforded by the liberal Scandinavian academic culture is the reason behind the curious case of the Danish (but also Finish, Norwegian and Swedish) success in game studies and a lesson for how to achieve scholarly innovation in general. To illustrate how the Danish research sector expanded into games, we present a quantitative survey of Danish game research, based on publications in the years 1984-2014. Tracing the field of games research in Denmark through a quantitative lens provides a broad overview of the last 30 years in the development of the field and the volume of registered contributions by Danish game research scholars.

METHODOLOGY

Using Danish online databases and university employee pages, we collected the names of scholars, their institutions, their area of research and dates of publication. Investigating each publication's bibliography for further analysis was beyond the scope of the research. Neither did we explore the origin of funding for the respective scholars' field of study. Following this delimited research, we now outline the methodology of our study, its findings and subsequently hone in on the discussion of the apparent lack of attention to societal concerns over games as negative influences on youth and children.

In the period between November 2014 and March 2015, we collected data on the history of Danish games research. Qualifiers such as nationality of the scholar or place of residence at the time of publication were excluded and deemed irrelevant. Instead, the important qualifier was the Danish workplace affiliation of the publication's authors, as well as whether the publication in question was registered in the two Danish research databases Danish National Research Database (DDF) and The Royal Library and Copenhagen University Library Service (REX).

The primary source of collected data was DDF. This database is "collected from the Current Research Information Systems (CRIS) of Danish universities and other Danish research institutions" (Danish National Research Database, 2017) and participation by the universities is voluntary. It includes "published literature, such as journal articles, PhD theses, conference presentations and lecture notes" (ibid.) and it is operated by Denmark's Electronic Research Library (DEFF) with technical operations overseen by Technical University of Denmark's (DTU) library. The providers of data are Aalborg University (AAU), Aarhus University (AU), University of Copenhagen (KU), Ministry of Culture (KUM), Copenhagen Business School (CBS), Capital Region of Denmark (REGIONH), Technical University of Denmark (DTU), Roskilde University (RUC), Royal Danish Defense College (FAK), University of Southern Denmark (SDU), IT University of Copenhagen (ITU), University Colleges Denmark, Research Institutions in Architecture, Design and Conservation. These data providers cover the major research institutions that could potentially conduct research into games in Denmark.

We complemented the above findings with REX. This database covers all the research material produced by Danish educational institutions, as well as international research more broadly. We primarily used this as a complement to the DDF searches, especially in relation to searching for specific scholars.

In both DDF and REX we entered the English query terms *games*, *game*, *play*, *computer game*, *computer games*, *video game*, *video games*, *digital game*, *digital games*, *play*, *playing*, *gaming*, *digital play*, *gameplay*. Meanwhile, Danish search

queries were relegated to *spil*, *leg*, *computerspil*, *spiller*, *spille*, *lege*, *digitale spil*, *videospil*. We also figured that these terms would include research into concerns between games and youth and children, as to address our emphasis on Danish research of destructive or negative influences on youth and children through games.

We applied these search criteria to the two databases' abstracts, keywords and titles of the registered publications. Publications included were journal articles, book chapters, conference proceedings, conference presentations, books, dissertations and registered newspaper articles. We deliberately removed any master's theses and lecture notes that came up. The primary and ultimate condition of inclusion was whether a publication had been registered in the databases by the institutions themselves, as this is how both DDF and REX archive their data. This means that if research had been published, but not registered at the researcher's institution, then our survey would not be able to pick it up.

Due to the scope of the research, we did not distinguish between the forms of publications in our analysis of the results. Differences in academic discipline were also not accounted for. This means that our dataset is quantitative and does not consider qualitative aspects such as articles versus published books versus conference presentations.

Each of these search queries resulted in a certain amount of hits, which we then subsequently used to identify specific scholars. Using the location of the scholar, we then searched each individual scholar's publication list on the DDF and REX, as well as his or her own employee profile page on the institution's website. Co-authors on successful results were also discovered and subsequently researched to gather more results related to game studies. We then selected publications that were explicitly related to the analysis of computer games. We did not commit to close readings of each publication due to the amount of collected publications.

FINDINGS

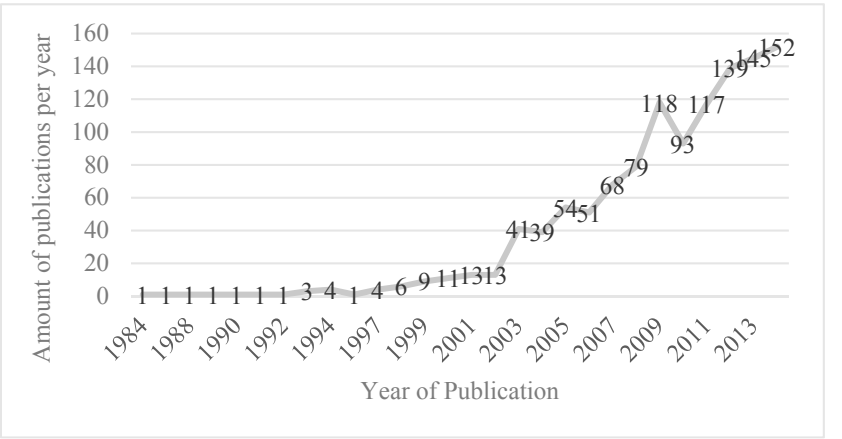
In total, we discovered and collected 1168 different articles distributed across 118 different scholars. The discovered years ranged from 1984 to 2014, a total of 31 years, with '85, '86 and '95 being the only three years without any registered publications. These were the findings in Table 1.

Table 1: Research findings

Category	Registered publications
Total amount	1168,0
Total mean average per year	41,7
Amount of registered years	28,0
Median	12,0
Total average per year	37,7
80s average per year	1,0
90s average per year	3,3
00s average per year	48,7
10s average per year	129,2

A simple visualization of the data as seen in Figure 1 shows that Danish games researchers did not really publish much in the first two decades (1980s and 90s), evidenced by the low average numbers of each decade. It is not until the early 2000s that more and more game-related publications occur. By 2003, the amount of publications jumps from 13 to 41 and hovers around that amount for the next four to five years until we see in 2009 a sharp jump to 118 publications.

Figure 1: Total publications per year

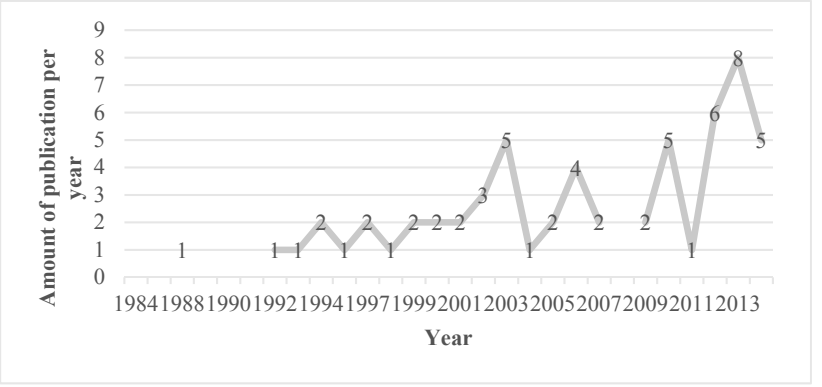


At the same time, we see in Figure 1 that there was a short drop to 93 publications in 2010, but that this drop was only temporary, as the numbers show.

A HISTORICAL LOOK AT DANISH RESEARCH CONCERNS ON YOUTH & CHILDREN

In order to specify the data and elaborate on the present theme, we also looked into each publication to identify the extent to which Danish games research had dealt with the topic of concerns about youth and children playing games. In order to demarcate whether or not a publication addressed the issue of children and youth in relation to concerns, we looked at publication titles and researchers usually working within this field of research. We included a publication if it fulfilled the sufficient criteria related to children, kids, youth, young adults, play, addiction, violence, effects, excessive playing, the perceived distinction between real versus virtual and fictional behaviour. Based on these criteria, we found that of the combined 1168 results, only 60 publications addressed the topic of concerns over youth and children playing games. This means that around five per cent of the total amount of publications from 1984 to 2014 have addressed the otherwise often-mentioned phenomena of concerns over games and their effects on children and youth. Looking at Figure 2, we see that there are different spikes in 2003 and 2013 respectively. We imagine that these spikes might be motivated by research reactions to specific public controversies that have received media attention. Yet,

Figure 2: Publications focused on youth and children concerns

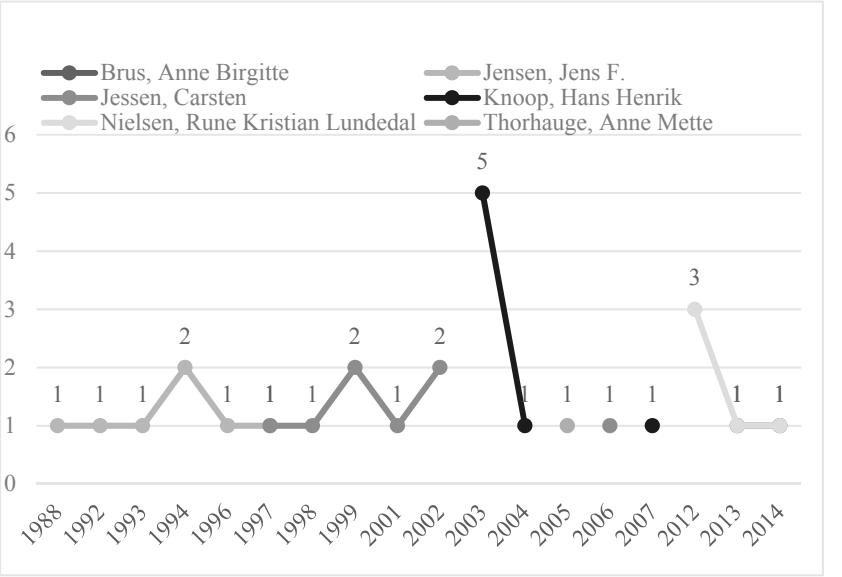


looking closer at 2003 we see that this is primarily attributed to four multiple publications by the same researcher Hans Henrik Knoop, thereby accounting for eighty per cent of that year's publications focused on concerns over youth and children, but Knoop would never revisit the topic afterwards. This could possibly be attributed to the school shooting in Erfurt, Germany, that sparked public debate on computer games in Denmark to the point where the Danish Minister of Culture Brian Mikkelsen even suggested a national rating on games (PC-spil kan gøre børn afhængige, 2003). Later in 2012 and 2013, we see a sharp increase once again, however this time by multiple researchers. We hypothesize that an increased focus on games and violence and addiction became more prominent following the aftermath of the 2011 Utøya massacre in Norway after some Danish media outlets reported on the relation between the mass murderer playing *World of Warcraft* (Blizzard, 2004) and his terrorism (Karlsen & Jørgensen, 2014). Also, in 2012, the national public broadcasting service Denmark's Radio (DR) conducted a self-made experiment where they compared playing games to reading books for youth and children in relation to aggression and violence (Kristiansen, 2011; Abrahamsen, 2011), which in turn spawned wider debate in Danish news media via opinion pieces and feature articles. Although this is conjecture, it might be possible that widely disseminated discourses like this in national media affect the research focus on game addiction and violence after the public at large increase their attention towards concerns over youth and children playing games.

Similarly, if we look further at the collected dataset and categorize by names we see that mainly six different authors are responsible for the output of publications focused on concerns about youth and children. These are mainly Anne Birgitte Brus, Jens F. Jensen, Carsten Jessen, Hans Henrik Knoop, Rune Kristian Lundedal Nielsen and Anne Mette Thorhauge as illustrated in Figure 3 below[1]. If we look at Figure 3, it is interesting to note that each author up until 2014 has publicized their research on concerns over children and youth in isolation from one another, as if there is only room for one high-volume researcher at a time.

1 It is important to note that the timeframe of our dataset did not include the high output by two researchers, Anne Mette Thorhauge and Anne Birgitte Brus, who otherwise both have covered concerns over children and youth extensively within Danish games research. This is due to the fact that their publications are concentrated around 2015 and 2016, thus not being present in the 1984-2014 timeframe of our data collection. Regardless, by following both Thorhauge's and Brus' recent research, it is clear that they too have a prominence within the topic of concerns over children and youth, even though this might not be apparent from our limited dataset.

Figure 3: Six selected authors



Limitations and Discussion

With regard to the quality of our findings, there are several limitations to our study and the collected dataset. Our research tools were heavily reliant on online availability and digital registration of the publications in question.

This reliance on digital registration in online databases means that publications during the 1980s and early 1990s might have been unavailable and undiscovered. At the same time, scholars who might have left the field of game studies before digital registration became mandatory at their institutions would also be unavailable for our data collection and their publications invisible to us. Regardless, our survey still managed to pick up some individual publications from the 1980s and 90s, thus at the very least showing that the two databases, DDF and REX, did contain or include *some* publications from that non-digital period.

Finally, and perhaps most importantly, our dataset is quantitative rather than qualitative. In our analysis, there is no difference between a dissertation and a conference presentation. By not doing an in-depth analysis of the collected dataset, we run the risk of reproducing contemporary neoliberal quantification of academia onto Danish games research. The epistemic insights of game studies are not solely quantifiable and our analysis are at best superficial (cf. Ergül & Coşar, 2017, p.

104). With the ongoing austerity measures of the public sector across the welfare states in European countries, it is not prudent to re-enact and reproduce the same logic that has resulted in the defunding of qualitative research, which the humanities especially are focused on. It is therefore vital that any reading of our dataset and visual analysis keeps the limitations of our quantitative methodology in mind.

Our dataset and analysis show that digital games research in Denmark follows the popular growth of these games in the sense that the establishment of game studies in the early 2000s heralded more and broader academic scrutiny of the phenomena of games. The steady growth in production of articles focused on games from around 2000 to 2014 highlights the academic importance and cultural relevance that games continue to hold for Danish society and even international contexts. Finally, our dataset shows that publications on concerns about children and youth are statistically few: five per cent of the total amount of publications, while the most prominent authors in this area seem to be temporally secluded from one another, at least in terms of activity.

CONCLUSION: A LACK OF WORRIES?

Danish game research has had a strong global presence since the late 1990s and especially in the 00s, but mainly, and from the humble beginning of Bøgh Andersen's article in 1984, it never has been truly concerned with concerns and worries about games. Instead, the focus has been on aesthetics, design and social interaction, as well as education. Perhaps the optimistic, Californian spirit from the 1983 Harvard symposium has also framed the Danish research agenda? After all, there are very similar and dominant high-tech ideologies and social practices at play in both these cultures and this naturally affects their research sectors as well.

Nevertheless, the attention given to games in the media by Danish researchers is not always free of worries. Paradoxically, however, it is easier to find media statements of worries from scientists and researchers than it is to find actual research documenting those worries. Examples of this trend internationally would be the German psychiatrist Manfred Spitzer, whose 2014 popularization *Digitale Demenz* has been translated to several European languages and Susan Greenfield, a well-known and controversial British neuropsychologist who has made claims such as, "playing certain games can mimic addiction, and [..] the heaviest users of these games might soon begin to do a pretty good impersonation of an addict" and "[connections in the brain] can be temporarily disabled by activities with a strong sensory content – 'blowing' the mind. Or they can be inactivated permanently by degeneration – i.e. dementia" (Whitelocks, 2011, para. 3). In Denmark, we find

the same tendency of researchers making undocumented claims, e.g. Hans Henrik Knoop:

> In computer games, you learn to act like an assassin or a psychopath and you will be able to use that knowledge in the real world. You are being trained in aggressive behaviour and this can make you more insensitive to the suffering of others. It is certainly not harmless (Forsker: Computerspil, 2003, para. 7, our translation).

Similarly, Albert Gjedde (2012) states:

> There are people who, because of [their] special disposition, are in danger of becoming addicted to computer games and who, because of the addiction and its causes may lose the ability to distinguish between real violence and virtual violence when they play the most violent games (para. 2, our translation).

Coincidentally, Gjedde cannot be found as author on our list of Danish game research publications. In other words, Denmark has its share of the phenomenon of concerned researchers who express their worries in popular media, but who appear not to have conducted any scientific research on the matter. Also typically, this trend seems to be a relatively recent phenomenon in the three and a half decades of games research. Perhaps it speaks more to the agenda of popular mass media than to an actual research agenda; any researcher who has experienced being quoted incorrectly by news journalists should recognize how this sensationalist mechanism works.

Danish game research, like Danish culture in general, appears not to be very concerned with the potential negative aspects of digital media, in this case games. While there is some attention from the media, this has not led to dedicated research funding and therefore, not much research. Nevertheless, our survey and arguments in this article quantitatively trace the trajectory of Danish games research, thus providing an overview of the recent historical development of game studies as a demarcated field in the Danish institutional context.

Our conclusion is negative: we have not found much worry. This is of course hard to document (one cannot prove a negative observation), but based on our survey, we stand by it. We could be wrong, but the Danish research landscape, like the country, is small and easily traversed. Any strong worrying research would have stood out, not only in our survey but also in the media; and this has not been the case, as far as we can see. We ascribe this to Denmark's strongly liberal position, especially in terms of media use and moral values, where it clearly outranks

its neighbours when it comes to attitudes towards alcohol, pornography, prostitution, drugs and frivolity in general (Bondeson, 2001). It should not come as a surprise that this liberalism can also include games. As future research, a Nordic comparative study would be a good way of testing this hypothesis.

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