

# Game space and social space

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## ABSTRACT

In this paper we present a statistical study of the gaming preferences of students of Oslo and Bergen in 2008-10. After the introduction and an discussion of the data, we present two analyses. The first part, *the space of game series* identifies, using only the game series mentioned as favourites, the main underlying structuring of these preferences using factor analysis (MCA) and cluster analysis. Three dimensions are suggested (casual/family vs. core/adult, fantasy/adventure vs. action/sport, and PC vs. Console), and five clusters of gamers: Nintendo, Fantasy/RPG, PC strategists, Casuals, and Action/football. The second part, *game space and social space* provides a short discussion the social distribution of game series according to gender, class and other social indicators.

## DATA AND CODING

The data used in this paper comes from two surveys of Norwegian higher education students in Bergen and Oslo, the two largest towns in Norway. Both surveys were conducted by regular mail and sent to a random stratified sample of the student population<sup>i</sup>. The response rate was 55% in Bergen (n=1223) and 44% (n=1144) in Oslo, giving in total 2367 respondents.

The general focus of both studies was inspired by Pierre Bourdieus work in *Distinction* (1984) and *The Inheritors* (1979), aiming to explore the relation between the students educational career (*Bildung*) and social background (their *habitus*) for the formation of their cultural tastes and competences in a broad sense (music, visual arts, literature, food, media use, interior design, theatre, food, clothing, sports etc.). Only two of the over 90 main questions<sup>ii</sup> were directly<sup>iii</sup> on the subject of videogames, and included a Likert-style question on their general interest in video games - which also included a open question where they were asked to name up to tree favourite videogames - and a question on how often they played videogames. It is first and foremost the data on favourite games which will be used in this paper to look for patterns in video games series preferences and how these preferences are linked to social differences.

## THE PLAYERS OF GAMES

First, a short note on who plays games: As attested in a myriad of studies - and also prevalent among our students - is the fact that video games are still a strongly gendered and age-related interest, also among a group as homogenous as ours. 60% over the female students<sup>iv</sup> say that they *never* play computer games and only 7% say they play at least once a week, whereas only 20% of male students never play games, and 45% play every week (24% every day or close to it). In regard to age, the differences are also dramatic: Whereas 62% of males below 22 years age say that they play weekly, this number falls to 22% for those in their late twenties and plummets to 10% for those males 30 years and older, whereof half say they never play games. As we also see from table 1, the percentage of females who say they never play games steadily declines the lower their age, but the differences do not suggest a dramatic generational shift away from the “maleness” of hard-core gamers among the students - quite the contrary.

Table 1. Video game playing frequency (last 12 months), by age and gender. University and univ. college students Oslo/Bergen. N=2003.

	age 18-21		age 22-25		age 26-29		age 30+		Total		Total
	female	male	female	male	female	male	female	male	female	male	
weekly	7	62	8	50	7	42	4	22	7	45	20
less than weekly	47	30	35	37	28	40	20	32	33	36	34
never	46	8	57	13	64	18	76	46	60	20	46

When we control for gender, age and class background, the gendered aspect of video games in relation to use of other media become clearer (table 2). Whereas male students are 5 times more likely to use more than 7 hours pr. week on “net surfing” than the female students (female students, in contrast, is somewhat more likely than males to be among the most active facebook users), males are 14 times more likely to play video games every week than females are. Such activity is also more clearly linked to low age than other media use (with the exception of Facebook use), but less linked to differences in fathers social class than the use of literature, movies, newspapers and television (the last one negatively). There are, however, indications that not playing video games *at all* is more likely for students with the lowest social backgrounds and for those with fathers with high levels of cultural capital.

Table 2: “Heavy” use of video games and various other media. Logistic regression. Odds rates. Students of Bergen <40 years of age, 2008<sup>V</sup>. N=1146.

Play frequency ->	Never	Weekly or daily			>15 hours pr week	>7 hours pr week	>4 hours pr week	>7 hours pr week
	Medium -> Video games	Video games	Literature	Movies (at home)	TV	Newspaper (net/paper)	Facebook	“Surfing the net”
% of students	47 %	20 %	22 %	47 %	22 %	24 %	23 %	20 %
Male	0,1**	13,6**	0,7*	2,4**	1,2	4,3**	0,8	5,2**
Age (5 year steps)	1,8**	0,6**	1,2*	0,8**	1,0	1,1	0,6*	0,9
Father’s class position								
<i>Volume: high</i>	1,4	1,0	2,5**	1,5*	0,5**	2,7**	1,1	0,7
<i>Volume: medium</i>	1,2	0,9	1,3	1,5**	0,7*	1,7*	0,9	0,8
<i>Volume: low (omitted=1)</i>								
<i>Composition: cultural</i>	0,7	1,0	2,5**	1,1	0,8	1,3	0,9	1,2
<i>Composition: balanced</i>	1,0	1,0	1,9**	1,1	0,7	1,4	0,9	0,9
<i>Composition: economic (omitted=1)</i>								
cons	0,5**	0,1**	0,1**	0,6*	0,5**	0,06	0,8	0,2
Pseudo R2	0,18	0,22	0,04	0,04	0,01	0,10	0,03	0,11

\*=sign 0.05, \*\*=sign 0.01

While questions of access to and use of various media technologies are important in a democratic perspective, studies of cultural patterns has demonstrated that the most important distinction lies often not in access/use vs. non-access&/use, but between *what* is used. E.g. whereas most Norwegian students say they enjoy some form of TV soaps, there are large social differences involved in *which soaps* are watched (Gripsrud, et al. 2011). Our interest in this paper is similarly not to provide a nuanced exploration of non-users or the most active users of video games, but to try to 1) identify the dominant patterns in the gamers game preferences: what kind of “taste oppositions” are involved in gamer culture, how are these related to the characteristics of the games involved (the game *genres*), and 2) to ask how these differences are linked to social differences. Or to use the terminology of Pierre Bourdieu, how is the *space of games*, as a symbolic space, structured, and how is this linked to the structures in the *social space*?

So even if we know that women play less frequently, or not at all, and we know that most frequent gamers are men, we do not know to what extent the patterns of their gaming preferences, as reported at the level of game series, will confirm or break up dominant understandings of how gaming relates to social space, in particular with respect to the established and closely interlinked conceptions of feminine vs. masculine and “casual” vs. “hardcore” preferences. What can we for example say about the gaming preferences of women who report that they play a lot (daily or weekly)? Or: can we identify significant taste oppositions among the masculine hardcore of high-frequency gamers? Is there anything to suggest that they, as it were, come in different types? Finally: can distinctions and oppositions in gaming preferences be linked not notions of class and cultural capital in a similar way as they can with respect to music, literature or film?

## THE SPACE OF GAMES

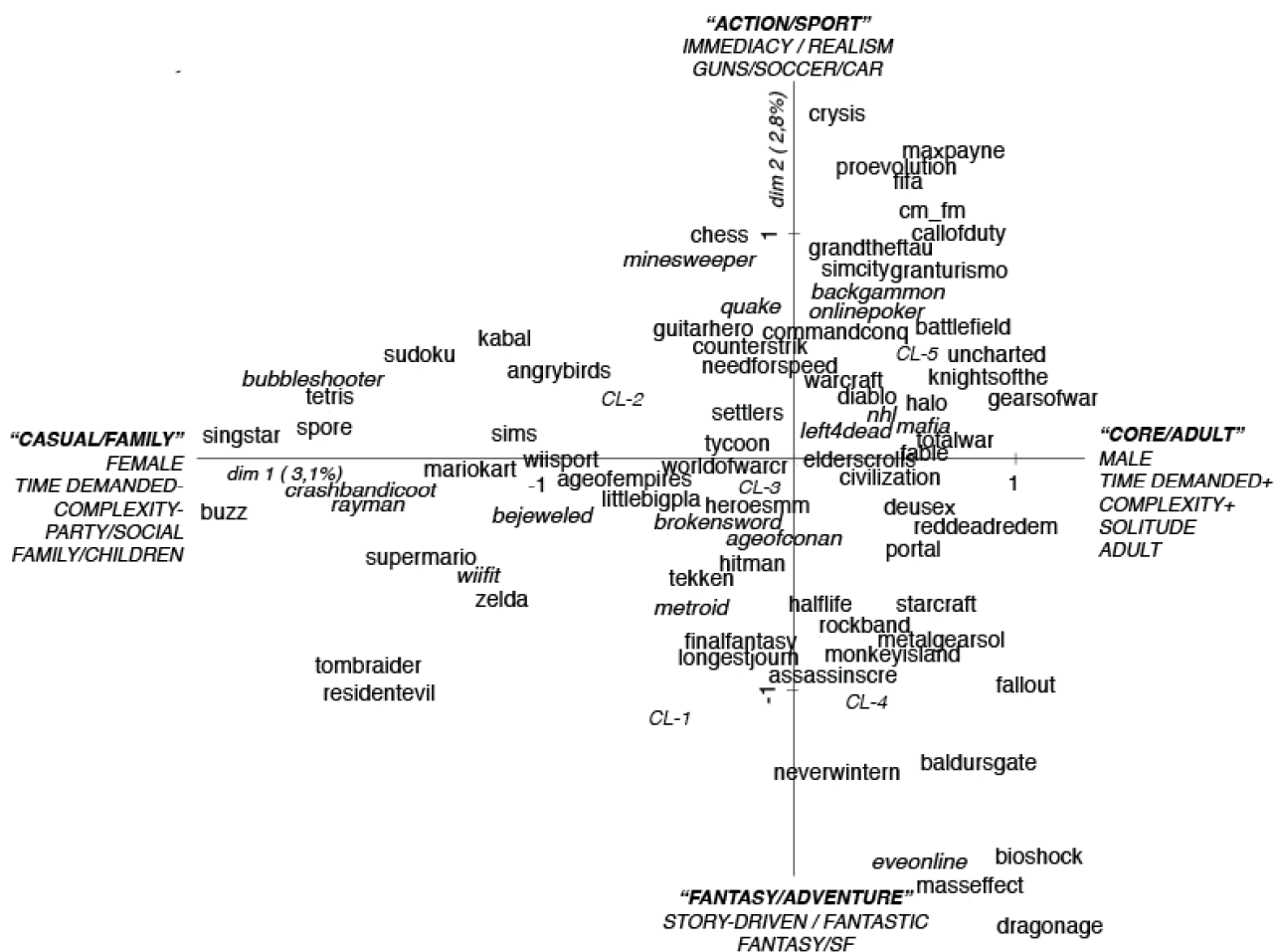
### NOTES ON THE CODING AND THE FACTOR ANALYSIS OF GAME SERIES

In the Bergen study, 390 (32%) had named at least one favourite video game, in total 866 games spanning over 299 different titles. In Oslo, 368 students (30%) had named at least one game, in total 898 games spanning 364 titles. As a first step in the coding, all unique titles which belonged to the same series/franchises *and* did not differ dramatically in gameplay (e.g. FIFA games) was coded (after correcting the most obvious errors on behalf of the coders and respondents - “Sin City 4” is for example very probably *Sim City 4*) into what we will, for simplicity, refer as game *series*. In total, the 533 game titles named by the 758 respondents was contracted to 328 series. Even if we in this way lose some distinctions (which if in many cases is not very important, e.g. in the *Fifa* or *Civilization series*, in some cases are more problematic, e.g. between *Link’s awakening* and *Majoras Mask* in the *Zelda series*), this strategy - which was a necessary step to make the categories large enough for an analysis of the correlations - still allowed us to limit strongly the level of pre-classification of the original data (which in game studies can e.g. been seen in the use of *folk categories* as “RPG”, “FPS” etc.). Our first goal will be to - using multiple correspondence analysis (MCA)<sup>vii</sup> - reduce this large number of series to a smaller number of underlying *dimensions* (or factors/components - the nomenclature varies according to which analytic technique is used), where series which tend to be mentioned together are posed to one end of the scale, and those not towards the other end of the scale, which can then be interpreted as sharing a common, underlying logic. If we ignore all other information on the respondents, the data on the series consists of a 328 x 758 indicator matrix (zeroes and one’s), which will be our main dataset.

As most respondents only have listed only a few games, however, this is what is commonly termed a “sparse matrix”, a type of data which poses particular problems for many traditional multivariate techniques as the contains mostly zeros and thus little variance (see e.g. Journée, et al. 2010). To investigate the statistical correspondences between respondents (what do those who name similar series have in common?) and between series (what series tend to be mentioned together?), we for the MCA first had to remove the 181 series mentioned by only one respondent, and also exclude the 201 respondents who had listed only one of the remaining series, as these did not contain information which could relate them to other series/respondents, reducing the matrix to 146<sup>viii</sup> series x 557 respondents<sup>ix</sup>. As MCA is quite sensitive to outliers, we had to further reduce the sparsity of the matrix by retaining only the series mentioned by at least 5 respondents, and respondents who had mentioned at least two of these series (so that the final matrix for the MCA consists of 64 series and 417 respondents)<sup>x</sup>. These will be our *active variables* and *active individuals* (e.g. actively contributing to the construction of the statistical space, c.f. (Le Roux and Rouanet 2010). In addition, we will add 16 series mentioned by four students and various other variables - e.g. gender, age and reported interest in games - to the analysis as *passive (or supplementary) variables* to help us interpret this space (marked by *italic* letters) further.

As expected by the sparse matrix structure, the first axes (which are sorted according to their relative explicative power) explains a low percentage of the total variance<sup>xi</sup>, and can thus only suggest some quite vague (but nevertheless the most dominant) oppositions among the gamers of the student populations. Also, one should be careful not to interpret the distance between two series as a precise expression of their correlation (although this is roughly true for the series as a whole)<sup>xii</sup>. We will interpret only the first three axes<sup>xiii</sup>, where axis 1-2 is shown in figure 1 and axis 1-3 in figure A1 in the appendix. The statistical properties of the MCA is given in table A1 in the appendix, whereas an overview of the categories who are most influential in determining each axis and best explained by them is given in table A2.

Figure 1: Favourite video game series (symbolic space). MCA, axis 1-2. Active and *passive* categories<sup>xiv</sup>.



### GAME OPPOSITIONS

When looking for patterns in players' game preferences through correspondance analysis, we are not only interested in the structure of game preferences (how different preferences are positioned in relation to each other along various dimensions) but also in each individual game series' power as a marker of game preference. Some game series, like *Super Mario*, are relatively often mentioned together with particular series (e.g. *Mario Kart*, *Zelda*) and less frequently with others (e.g. strategy games like *Sim City* or shooters like *Gears Of War*). Because of this tendency, combined with it being a quite popular choice (an overview of the most popular game series is given in table 5), *Super Mario* has a distinctive *profile* in this space and is associated with a specific taste and orientation to the left of the map, which also suggest that a preference (or lack of it) for *Super Mario* or similar games is what determines the underlying opposition in axis 1. In contrast, a series like *War of Warcraft* is placed towards the centre of the axes (the origo) because it has no such clear profile (which is also a common feature of the most popular games) in regard to the two first "dimensions" of gaming tastes. In other words, knowing that someone has *Super Mario* as one of his/her favourite game series appear as more indicative of particular game tastes than *WoW* does.

The above example also serves to emphasize an important basic feature of our sample population: First, respondents are students, mostly in their twenties, a group who generally play more computer games and are more familiar with them than older demographics are. Second, 2/3 of the students has not named any game title, leading to a overrepresentation of what we may call *core* or *hobbyist* gamers, people who play often and regularly<sup>xv</sup>, and who is probably also likely to prefer games that require a certain investment in terms of time, dedication and money (not least because of the hardware necessary for playing). For this reason, otherwise mainstream and culturally inclusive options like *Solitaire* do not come out as a broad or centre preference in this particular context.

The first axis (left-right in figure 1), and by definition the one which explains most of the total differences in the data in regard to which game series tend to be mentioned together appears as an not unexpected opposition between series which are often associated with more casual vs. core

gamers (and which will, in the next part, will indeed be shown to correlate highly with self-reported interest in and time used on playing games). On the left we thus find popular, family-oriented titles like *Super Mario*, *Wii Sports*, *The Sims* and *Angry Birds*, games which are primarily oriented towards social, party-style playing (*Singstar*, *Buzz*) and popular puzzle games with simple play mechanics (*Tetris*, *Sudoku*), all which are opposed to the games on the right side, which have in common that they often are more complex and demand a lot of skill and a large investment of time to enjoy, are in practice usually played in physical solitude with more adult themes e.g. (*Fallout*, *Gears of War*, *Championship Manager*, *Starcraft*). In gaming discourse, the game characteristics as they are distributed along this axes are typically associated with «hardcore» versus «casual» gaming, and with a masculine versus a feminine taste in gaming. We will thus term this axis the *casual/family vs. core/adult axis*, associated with different degrees of gaming complexity and time investment, sociability, gendered aesthetics, and adulthood of themes.

However, even if this axis seems to be echoing established perceptions of hardcore/masculine versus mass-market/family-oriented play, this does not mean that games on the left are uniformly casual games in terms of their gameplay. The demands made on the player by *Super Mario* or *The Sims* in terms of time, effort and dedication are not significantly different from, say, the *Call of Duty*- or *Tycoon* series. Note also that *Nintendo* seems to contribute to the articulation of oppositions along this axis, indicating the popularity and relatively coherent style of its first-party game universe, as well as the strength of its brand – in particular the *Wii* platform – during the time of the surveys.

The second axis (top-down) indicates a pattern that is interesting both because of its relative consistency and identifiable logic, and because it seems to reveal a pattern of traditional *genre preferences* which we suspect would seem at least partly familiar to gamers and researchers alike. The lower end is dominated by role-playing games, and the upper end by sport and action-adventures. Correspondingly, in terms of genre fiction, whereas the lower end is dominated by fantasy and a particular flavour of science-fiction (e.g. *Mass Effect*, *Dragon Age*, *Bioshock*, *Fallout*, *Zelda*, *Final Fantasy*), such kinds of gameworlds are all but banned from the top side, which is populated by distinctively mainstream and cross-media action fare: racing (*Gran Turismo*), shooting (*Call of Duty*, *Crysis*, *Battlefield*) and football (*Championship Manager*, *Fifa*, *Pro Evolution Soccer*). We could, in rough heuristic terms, say that this dimension differentiates between a «geeky» taste at the lower end, and *sport & action* at the top. The latter tend to be less complex in their structure (football management games being an important exception), and borrow their style and imagery from either televised sport or Hollywood action films. At the opposite side of origo, in a relatively consistent fashion (*Starcraft* being the exception to the rule), we find role-playing and adventure games that place more emphasis on (interactive) storytelling, which also means that the majority of them are more complex than the average action- or sport game. We also note that this dimension seems more consistently platform-agnostic than the first dimension. We will term this axis the *fantasy/adventure vs action/sport axis*<sup>xvi</sup>

The third axis (shown in figure A1 in the appendix) mainly appears to bring out differentiations in preference according to *platform* rather than hardcore-casual distinctions (axis 1) or fiction/genre\* (axis 2). A telling example may be that in contrast to the second dimension, we see that *Bioshock* here joins *GTA* on the coordinate map, which would make sense according to this interpretation, as both are console hits, and are opposed to titles that have, at least historically, been associated with the PC platform (*Battlefield*, *Diablo*, *War of Warcraft*, *Age of Empires* etc.). We will term this the *PC-console axis*.

### GAMING CLUSTERS

Whereas factor analysis is useful for identifying dominant dimensions underlying the students' answers, and thus what kind of game series tend to appear together or not at all, we will supplement this by a cluster analysis<sup>xvii</sup>, asking: if one is to group together these students based on the similarity of their favourite games, what groups will be formed?

Because our clusters are articulated in terms of correspondences between stated favourite game series (rather than for example as responses to questions like «do you enjoy frustration as part of the game experience»), and because they can be linked to supplementary data, they are not comparable to preference-typologies suggested by previous game research, like for example Richard Bartle's well-

known distinction between achievers, explorers, socialisers and killers (Bartle 1997). Nevertheless, the series of studies in «player satisfaction modeling» undertaken by Bateman et.al (2011), which draws on psychometric typologies (like Myers-Briggs type categorisations), trait-theory, and neuropsychological modelling, does show some possible contact points with the findings presented in this paper, even if their methodology and general aim (how to design successful games targeted at different demographics and taste groups) is different.

The results from our cluster analysis generally reflect the structure of preferences as indicated by the first 3 dimensions, however modified by taking more dimensions on board, and opening up for identifying clusters of preferences that are more composite and multidimensional in nature, in other words, coherent groups of players who seem to share a certain set of dispositions.

Our analysis suggest five clusters of gamers, where the profile of their series preferences are given in table 3, and the general placement of the clusters are also projected into figure 1 by the number 1-5 (CL-1, CL-2 etc). As expected, most clusters resonate with the oppositions described above, but introduces some new nuances. Axis 1 opposes cluster 1 and 4 (the “Nintendos” and the “Casuals”, where the later are particularly associated with the most casual games which are also not Nintendo-specific, like *Tetris* and *Angry Birds* and classic board games) against cluster 5 (the action- and football fans) and also, to a lesser degree cluster 2 (The “Fantasy” cluster of players). Axis 2, in contrast, opposes mainly cluster 1 and 2 (“Nintendos” and “Fantasy”) to cluster 4 and 5 (“Casuals” and “Action/sport”), whereas the third cluster (“PC strategists”) is not clearly associated with the first or second axes, but instead forms one side of the third axis.

Table 3: Some popular game series and their association to cluster 1-5. Percentages of students in each cluster who have mentioned the series<sup>xviii</sup>.

	(1) Nintendo	(2) Fantasy	(3) PC Strategists	(4) Casuals	(5) Action/sport	Total
<b>N=</b>	<b>53</b>	<b>179</b>	<b>153</b>	<b>74</b>	<b>299</b>	<b>758</b>
<b>zelda</b>	<b>51</b>	3	1	0	0	5
<b>supermario</b>	<b>43</b>	4	2	7	1	5
<b>mariokart</b>	<b>19</b>	0	3	0	0	2
<b>wiisport</b>	<b>13</b>	0	0	1	0	1
<b>residentevil</b>	<b>13</b>	0	0	0	0	1
<b>fallout</b>	0	<b>16</b>	2	1	0	4
<b>finalfantasy</b>	0	<b>12</b>	0	0	0	3
<b>totalwar</b>	0	<b>12</b>	0	0	1	3
<b>elderscrolls</b>	2	<b>11</b>	0	0	0	3
<b>assassinsc~d</b>	0	<b>10</b>	2	0	0	3
<b>guitarhero</b>	0	<b>10</b>	1	0	0	3
<b>masseffect</b>	0	<b>10</b>	0	0	0	2
<b>sims</b>	8	3	<b>34</b>	14	1	10
<b>civilization</b>	2	6	<b>18</b>	1	3	7
<b>ageofempires</b>	2	1	<b>11</b>	0	0	3
<b>monkeyisland</b>	0	1	<b>11</b>	0	0	2
<b>heroesmm</b>	0	2	<b>9</b>	0	0	2
<b>tycoon</b>	4	1	<b>8</b>	0	0	2
<b>angrybirds</b>	2	1	0	<b>31</b>	0	3
<b>kabal</b>	2	1	1	<b>30</b>	1	4
<b>tetris</b>	0	1	1	<b>28</b>	0	3
<b>chess</b>	0	0	0	<b>8</b>	0	1
<b>spore</b>	0	0	0	<b>8</b>	0	1
<b>cm_fm</b>	4	7	7	0	<b>21</b>	11
<b>fifa</b>	4	3	1	3	<b>16</b>	8
<b>callofduty</b>	2	7	1	3	<b>16</b>	8
<b>worldofwar~t</b>	4	6	4	3	<b>14</b>	8
<b>grandtheft~o</b>	4	5	5	0	<b>11</b>	7
<b>counterstr~e</b>	0	1	1	1	<b>10</b>	4

As we can see, ‘Casuals’ and ‘Nintendo’ can indeed be separated out as two distinct clusters, with the highly popular series *The Sims* and *Super Mario* being the only significant (and expected) points of contact. The in-between group, the «PC strategists», is a cluster of players who on the one hand have a preference for broad and inclusive titles like *The Sims* and *Civilization* (which brings them relatively close to the origo), but who also clearly lean towards non-violent and slow strategic challenges.

Clusters 2 and 5, which separate from each other along the genre/fiction axis, are ‘cousins’ in the sense that their game preferences are centered around series typically associated with core or hobbyist gaming culture. Judging by the series mentioned, both groups also clearly enjoy *online* play more than the other clusters, who indicate either single-player or party-type gaming experiences. Interestingly, we see that the *overlap* in preferences between these two groups is mostly a one-way street, i.e. that players in group 2 also enjoy the favourites of group 5, but not the other way around. This could in part be explained by the stronger mainstream appeal of the cluster 5 favorite games (the gangster world of the GTA series of games is broader and more inclusive than, say, Final Fantasy, which has more of a niche appeal, at least in Scandinavia). But it also indicates that whereas action/sport type of gamers are highly rigid and inflexible in their preferences, fantasy- and rpg-oriented gamers are comparatively diverse and flexible. In fact, judging by the numbers in table 3, the geeks seem to be more open and inclusive than any of the other types of gamers.

## GAME SPACE AND SOCIAL SPACE

As is shown by the placement of the social characteristics of the players in regard to the space of games (shown as supplementary points in figure 2), we can see that axis 1 separates very clearly between *female and male players*, and between *non-frequent* (on the female side) and *frequent players* (on the male side), a dominant pattern that is not unexpected in light of previous research<sup>xix</sup>. This axis also separates the oldest and youngest students from those of a more median age.

Table 4: The 30 most often mentioned series given by favourite game, by gender, Students of Bergen/Oslo 2008-10. Percentages (n=758).

	Top 1-15					Top 16-30			
	F	M	Total	n		F	M	Total	n
cm_fm	0	17	11	87	angrybirds	5	2	3	26
sims	26	2	10	75	tetris	7	1	3	24
callofduty	1	12	8	64	halflife	0	4	3	23
worldofwar~t	9	8	8	61	totalwar	0	4	3	23
fifa	1	11	8	60	battlefield	0	4	3	22
grandtheft~o	3	9	7	52	finalfantasy	3	3	3	22
civilization	3	9	7	50	assassinsc~d	3	2	3	21
starcraft	0	8	6	43	elderscrolls	1	4	3	21
supermario	9	4	5	41	halo	1	4	3	20
zelda	7	4	5	35	guitarhero	4	2	3	19
fallout	0	7	4	34	warcraft	0	4	3	19
counterstr~e	2	6	4	33	ageofempires	3	2	2	18
commandconq	2	4	4	28	masseffect	0	4	2	18
diablo	3	4	4	28	monkeyisland	2	3	2	18
kabal	8	1	4	28	heroesmm	3	2	2	17

The gender distribution for each of the most popular game series confirms the strong link between computer gaming preferences and gender (table 4). Among the top favourite game series, *Call of Duty*, *Championship/Football Manager\**, *FIFA*, and *Fallout* come up as almost purely male preferences. *The Sims*, *Solitaire*, and *Tetris* are almost exclusively female, whereas *Super Mario*, *Zelda*, and *AngryBirds* are female dominated. *World of Warcraft* stands out among the top hitters as the definite unisex favourite, according to these data.

We should remember, however, as noted above, that central game series at the non-frequent and female end of the first axis, in particular *Super Mario* and *The Sims*, which are central titles in the «Nintendo» and «PC strategists» clusters respectively, are not casual games in terms of gameplay. But their fans seem to be playing them significantly less frequently than, say, fans of the *Fallout* series.

## THE SOCIAL AND CULTURAL SPACE OF GAMES

Looking at the literature that deals with dispositions and preferences in computer game play, we see that the questions of gender and of 'hardcore' vs 'casual' is given central attention. Vermeulen et.al (2011) find that game preferences of male core players, female core players, and male non-core players are generally in line with each other, whereas those of female non-core players differ significantly. In other words: hobbyist computer game playing, according to their study, is gender-free in a masculine way. The identifiable dispositions of core gamers, they conclude, is primarily a matter of game *literacy* rather than gender. Partly echoing these findings, Bateman et.al (2011) suggest that hobbyist gaming practices are correlated with game literacy as well as a comparatively wider *diversity* of genre preferences.

This approach to the phenomenon of 'core' gaming seems to resonate with a broader and more historically and culturally oriented kind of research that is concerned with what is typically referred to as game *culture*. A recent example is Graeme Kirkpatrick's (in part Bourdieu-inspired) study on the historical origins of the notions of 'gamer' and – in particular – 'gameplay' as exclusive markers of a semi-autonomous identity and culture (Kirkpatrick 2012).

This context is relevant to our and similar types of studies. The «core/adult» side of our first axis corresponds loosely to Kirkpatrick's and other's notions of gamer culture; that is: hobbyist players, who identify as gamers, and who have a sense of community (across players, journalists, and industry alike) seeing themselves as belonging to a group of peers. On the other hand, only the game series indicative of the "Fantasy" cluster can be said to correlate unambiguously to the notion core gamer culture, as it has been historically associated with fantasy and RPG preference combined with high computer- and internet literacy. It is also in this group that we can detect, in contrast to the action- and sport gamers in cluster 5 (who are equally "hobbyist" and frequent players) the kind of openness and diversity of taste found by Bateman et.al, in that games outside their cluster-typical preference are nevertheless included as favourites by quite a few.

However, as indicated by the cluster analysis, two other taste-groups of players emerge, Nintendo and the PC strategists, both mainly grouping together players who play less frequently (and in this sense 'casual' rather than 'hobbyists'). These "hardcore casuals" (or casual hardcores) seem to avoid the game series typical for fantasy- or action- and sport gamers, but they still lean towards classic game series like *The Legend of Zelda* and *Civilization* respectively, which are complex, time-consuming, and cost a lot of money.

Moving on to the social compositions of the five clusters, some social characteristics are given in table 4. We can note that the "Nintendos" and the "Casuals", two of the smallest clusters, while united by a preference for simpler, family-friendly games and being over-represented by female students, are divided in important respects: The "Nintendos" are overall younger and have fewer gamers who say they play very seldom, whereas the "Casuals" have a much larger (70%) share of female students, and more often studies at an (vocational) university college. Interestingly, the "Casuals" also are overrepresented by students from latest study (2010), which which we expect is an effect of the spread of smartphones and mobile gaming. The two largest clusters, the "action/sport" fans and "Fantasy" gamers, in contrast, are both characterised by a very few low proportion of females and a high percentage who plays games often. The fantasy-oriented are more likely to study

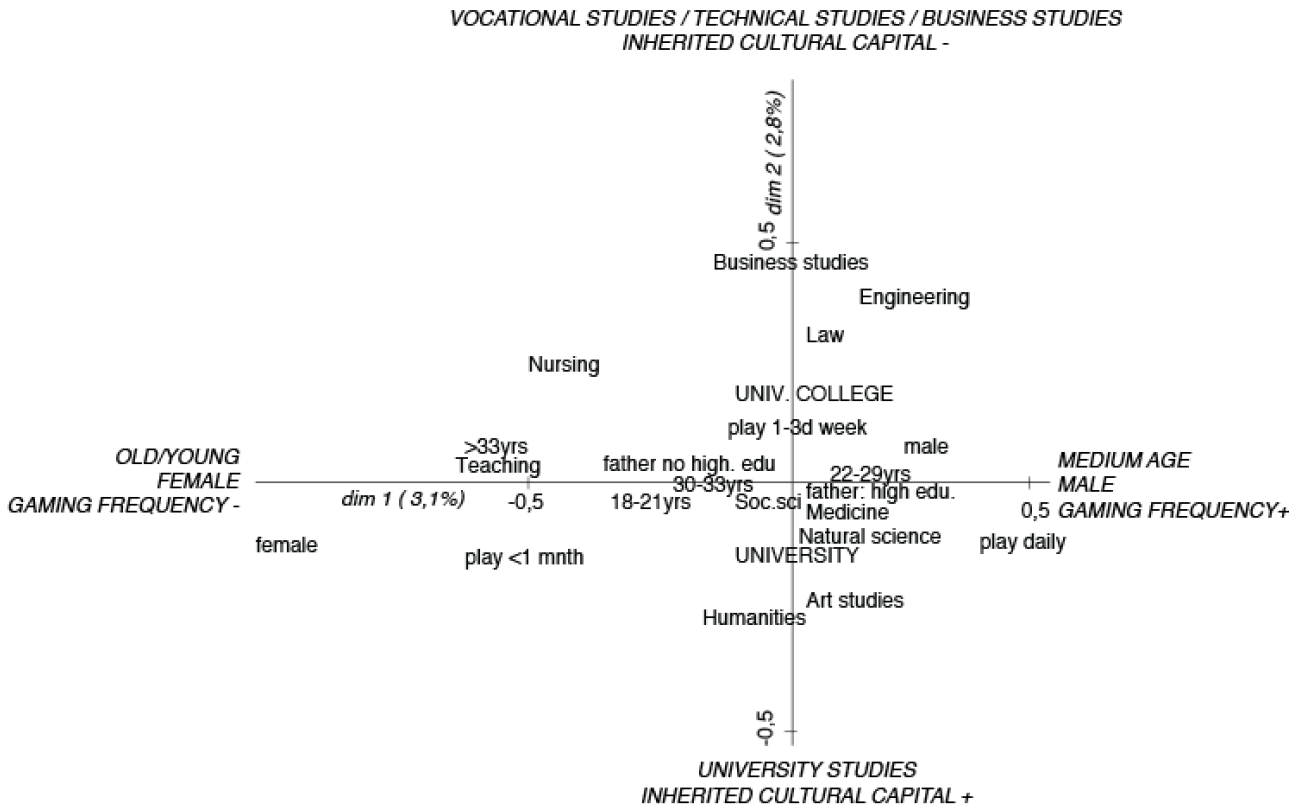


at the university and have a father with a master degree – two traits which they share with the “PC Strategists”, but the later appears to be somewhat less frequent players.

**Table 4: Social characteristics of cluster 1-5. Percentages. Students of Bergen and Oslo 2008/2010.**

	(1) Nintendo	(2) Fantasy	(3) PC Strategists	(4) Casuals	(5) Lads	Total
<b>N=</b>	<b>53</b>	<b>179</b>	<b>153</b>	<b>74</b>	<b>299</b>	758
<b>% female</b>	53	26	54	70	17	34
<b>Age</b>						
18_21	30	22	26	20	24	24
22-25	42	49	42	36	50	46
>25	28	29	32	43	25	28
<b>Fathers edu.</b>						
master	27	35	27	23	28	29
bachelor	31	33	33	36	39	35
none/unknown	41	33	40	41	33	36
<b>Educaional institution</b>						
university	68	69	66	57	54	61
university college	19	20	19	36	27	24
<b>Place of study (select.)</b>						
Medicine	4	3	5	3	2	3
Law	4	9	5	4	9	7
Socialscience	23	20	18	8	10	15
Humanities	11	16	17	9	7	12
Naturalscience	17	8	11	14	13	12
Teaching	13	6	7	9	5	6
Nursing	2	1	1	9	3	2
Engineering	0	7	7	5	11	8
Businessadmin	4	4	7	1	8	5
Artstudies	6	3	3	3	3	3
<b>Place/time</b>						
Oslo 2010	49	60	41	64	42	49
Bergen 2008	51	40	59	36	58	51
<b>Game playing freq.</b>						
never	6	1	7	15	2	4
1-5 times pr year	6	6	13	22	8	10
6-11 times pr. year	11	12	20	20	11	14
1-3 times pr. mnth	36	17	23	18	18	20
1-3 times pr. week	25	31	22	12	27	25
5-6 times pr. week	11	16	9	8	19	15
daily	4	17	7	3	14	11

**Figure 2: Favourite video game series (symbolic space). MCA, axis 1-2. Supplementary (social) categories.**



Axis 2 separates between studies which are characterised by having students with different degree of inherited cultural capital. This suggest that a taste for games that are generally less complex in structure, less ambitious in terms of interactive storytelling, and which borrow their game worlds from televisual sport and Hollywood action film, is linked to lower levels of cultural inheritance. This taste orientation decreases the more culturally privileged their upbringing, a finding which resonates with similar findings in regard to art, literature and film (Bourdieu 1984).

We can now attempt a more general interpretation of the 5 clusters, taking into account the social composition as indicated by the supplementary data. In addition, we will provide some provisional remarks on the differences between male and female members of these clusters (some which are shown in table A4 and A5). The later, which are quite marked, should remind us that when males and females sharing similar tastes, in particular when it regards practices and products which are traditionally heavily gendered (e.g. first person shooters, both being associated with masculine values and liked more often by men) means that - for female students in our example - that they have to overcome a major cultural obstacle which is not there for the male students, and such gender-crossing behaviour is very often associated with higher social backgrounds and (in particular) inherited cultural capital (c.f. for example Gripsrud & Hovden 2000).

*Cluster 1: The Nintendos*

The Nintendos are equally male/famale core players, who love Mario and Zelda, but who would not be likely to mention pure casual games like *Angry Birds* among their favourites. However

they play (and spend) comparatively little on their pastime compared to other core players, and they prefer single-player only. They are younger than the typical casual player, but play significantly less often than non-Nintendo console gamers. The strong articulation of this cluster could be partly due to the fact that the Wii was at the heights of its success around the time of the surveys. The female and male students of this cluster exhibit quite similar tastes for games, with the exception that females they more often mention *Super Mario* as a favourite.

#### Cluster 2: The geeks

The geeks are hardcore gamers in terms of frequency, and they are mostly male, although there is also a significant faction of female players. *World of Warcraft* has no particular position or status in this gaming demographic. Quite a few of the women in this cluster also mention casual games like *Buzz* and *Singstar* among their favourites, a fact that illustrates the relative diversity and flexibility of taste among these types of players, even if, or maybe precisely because, they are firmly anchored in the cultures of role-playing, sci-fi and fantasy. The geek cluster may have an affinity with Bateman et.al's category of «hardcore» players above: players who are experts and who play a wide range of games – and who, apparently, are also more *imaginative* than other players. They enjoy online play more than the other groups, with the important exception of group 5.

*Cluster 3: PC Strategists.* The PC strategists play less than group 2 and 5, and one suspects that there may be a significant section of them who love to talk about *Civilization* at parties but who maybe do not play very often anymore (– how could we otherwise explain that such a hugely time-consuming game is the stated favourite of players who play less than once a week?). However, we see that *Civilization* is mainly a male preference; of the female students in this cluster, 60% mentions *Sims* as their favourite, which hardly any of the male students do. More than any of the other groups, the PC strategists, as our label indicates, are PC-dominated. They are a peaceful bunch, welcoming abstract violence but not the visceral and fast-paced variant. Our data may also indicate that if these people are willing to include any FPS at all as favourite, it would have to be a Gibsonian one like *Deus Ex*, which is typically known as the literary or thinking man's shooter.

#### Cluster 4: The casuals

Age seems to be a significant factor here; these players are the older students, typically in their early thirties. The majority state that they play less than once a month, and *Tetris*, *Solitaire* and *Angrybirds* are big favourites among both sexes of this cluster. The male students here, however are much older than the female students, and they are also much more likely to come from a family where their fathers have no higher education, and they (as the only cluster) do also say that they play less often than the females. Being “casual” in this particular way, which is a quite uncommon disposition for men but quite common for women, appear to be linked to lower-class backgrounds for men but not for women.

#### Cluster 5: The lads

These are the (dominantly) male core gamers residing in the upper right corner of the 1. and 2. dimensional matrix. They prefer televisual-style sport games (FIFA) and Hollywood-type action. They are surprisingly well-settled and rigid in their SRS-preferences (shooting/racing/sport), in contrast to their geek brethren in cluster 2. In the Norwegian context, ‘sport’ means mostly football. A considerable portion of this group are keen devotees of football management games.

The lads, as our heuristic label indicates, is a more uniformly male cluster than the geeks, and as a group they have a sharper edge; they are consistently unwilling to include non-SRS games among their favourites. They have no fondness for elves and troll or Manga or any other weird stuff, and avoid anything childish or girly. If they enjoy any fantasy-inflicted games at all it would have to be lightweight and/or massmarket stuff like *Diablo* or *WoW*. The data indicate that these boys are generally highly competitive, as they enjoy online sport-type play (counterstrike, *CoD* online, *Starcraft*) more than any other group. The few females in this cluster have mainly named *WoW* (52%), *Diablo* and *Grand Theft Auto* (both 14%) as their favourite games, whereas the males are more

partial to soccer games and shooters. In other words, if it were not for the women players associated with this cluster, it would be more even more coherently “laddish” than it already is.

### CLOSING COMMENTS

In this paper, we have suggested some taste oppositions and clustering among the most active student gamers, and suggests some ways in which such tastes are related to social structures (in particular, gender) and also suggesting, by the different time our gamer clusters use to play games, how gaming is a major part of some game-playing students' lives, and less so for others.

This life-style aspect of different gaming styles is something which we would like to pursue further in later works. Studying the different clusters preferences in other esthetic universes do suggest that gaming preferences are clearly part of a larger system of tastes, aesthetic dispositions and lifestyles. For example, our “Casuals” are much more likely to regularly read literature, exercise or go “out on the town” than the other clusters (practices which cluster 2, the “Geeks” is particularly little likely to engage in, at least with any frequency). Regarding differences between our two “core” groups - the “Geeks” and the “Lads”, we also not unexpectedly find - in addition to the fact that both groups are also those clusters who watch movies at home most often - a higher preferences among “Geeks” for middlebrow fantastic-related culture in every domain - *Xfiles*, *Salvador Dali*, *Hieronymous Bosch*, *SF/Fantasy literature*, *Comics*, *Hard Rock*), whereas the “Lads” often score lower than average on the same preferences, suggesting a fundamentally different taste for “realism” which, coupled with the social differences between the two groups echoes Pierre Bourdieu's work on the aesthetic dispositions of working-class and middle-class groups (Bourdieu 1984). This, however, must be the subject for another paper.

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## TABLE AND FIGURE APPENDIX

Table A1: The space of game series, MCA. Statistical properties.

Multiple/Joint correspondence analysis	Number of obs	=	417
	Total inertia	=	1
Method: Indicator matrix	Number of axes	=	3

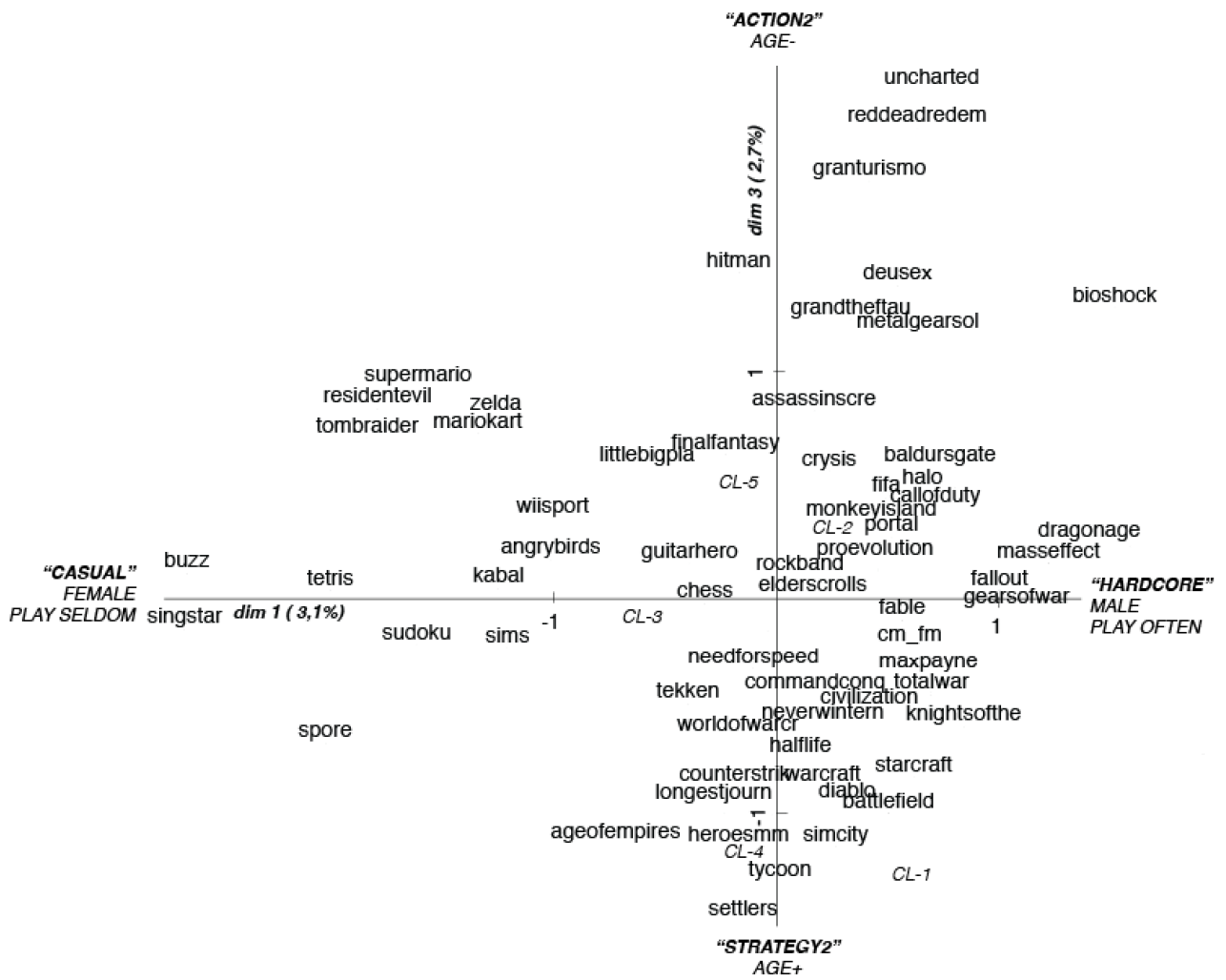
Dimension	principal inertia	percent	cumul percent
dim 1	,030792	3,08	3,08
dim 2	,0284501	2,85	5,92
dim 3	,027388	2,74	8,66
dim 4	,0262392	2,62	11,29
dim 5	,0253216	2,53	13,82
dim 6	,0252927	2,53	16,35
dim 7	,0245981	2,46	18,81
dim 8	,0239761	2,40	21,21
dim 9	,0232708	2,33	23,53
dim 10	,0230054	2,30	25,83

Statistics (x1000) for column categories in principal normalization

	overall			dimension 1			dimension 2			dimension 3		
Categories	mass	qualt	%inert	coord	sqcor	contr	coord	sqcor	contr	coord	sqcor	contr
ageofempires												
0	15	57	1	23	15	0	5	1	0	38	41	0
ageofempires	1	57	15	-665	15	1	-153	1	0	-1085	41	4
angrybirds												
0	15	52	1	44	46	0	-14	5	0	-8	1	0
angrybirds	1	52	15	-1039	46	4	330	5	0	179	1	0
assassinscre												
0	15	65	1	-6	1	0	37	36	0	-32	28	0
assassinscre	1	65	15	171	1	0	-988	36	3	862	28	3
baldursgate												
0	15	35	0	-10	8	0	17	24	0	-6	3	0
baldursgate	0	35	15	815	8	1	-1405	24	2	507	3	0
battlefield												
0	15	65	1	-22	11	0	-22	12	0	42	41	0
battlefield	1	65	15	513	11	1	528	12	1	-988	41	4
bioshock												
0	15	161	0	-23	35	0	38	99	0	-20	26	0
bioshock	0	161	15	1553	35	3	-2608	99	9	1340	26	2
buzz												
0	15	109	0	40	107	0	4	1	0	-2	0	0
buzz	0	109	15	-2712	107	9	-297	1	0	115	0	0
callofduty												
0	14	212	2	-108	79	1	-126	107	1	-62	26	0
callofduty	2	212	14	728	79	6	849	107	9	415	26	2
chess												
0	15	9	0	3	1	0	-9	8	0	0	0	0
chess	0	9	15	-330	1	0	926	8	1	-22	0	0
civilization												
0	14	48	1	-44	19	0	15	2	0	53	27	0
civilization	1	48	14	424	19	1	-143	2	0	-513	27	2
cm_fm												
0	13	240	2	-99	60	1	-167	172	2	36	8	0
cm fm	2	240	13	611	60	5	1031	172	14	-221	8	1
commandconq												
0	15	38	1	-13	2	0	-34	17	0	36	18	0
commandconq	1	38	15	183	2	0	497	17	1	-515	18	2
counterstrik												
0	15	62	1	12	2	0	-28	12	0	55	48	0

counterstrik		1	62	15	-194	2	0	432	12	1	-863	48	4
crysis													
	0	15	39	0	-3	1	0	-20	34	0	-7	4	0
	crysis	0	39	15	240	1	0	1666	34	3	586	4	0
deusex													
	0	15	30	0	-7	4	0	3	1	0	-17	25	0
	deusex	0	30	15	554	4	0	-276	1	0	1440	25	2
diablo													
	0	15	74	1	-23	8	0	-15	3	0	68	64	0
	diablo	1	74	15	323	8	1	213	3	0	-941	64	6
dragonage													
	0	15	276	0	-36	58	0	69	217	0	-5	1	0
	dragonage	0	276	15	1623	58	5	-3137	217	20	238	1	0
elderscrolls													
	0	15	4	1	-13	4	0	3	0	0	-4	0	0
	elderscrolls	1	4	15	289	4	0	-66	0	0	98	0	0
fable													
	0	15	4	0	-7	4	0	0	0	0	1	0	0
	fable	0	4	15	576	4	0	-37	0	0	-98	0	0
fallout													
	0	15	169	1	-79	81	1	82	87	1	-3	0	0
	fallout	1	169	15	1023	81	7	-1061	87	8	37	0	0
fifa													
	0	14	208	2	-58	29	0	-133	155	1	-53	25	0
	fifa	2	208	14	502	29	2	1160	155	13	463	25	2
finalfantasy													
	0	15	59	1	11	3	0	41	36	0	-30	20	0
	finalfantasy	1	59	15	-236	3	0	-898	36	3	663	20	2
gearsofwar													
	0	15	28	0	-24	27	0	-5	1	0	-0	0	0
	gearsofwar	0	28	15	1107	27	2	235	1	0	12	0	0
grandtheftau													
	0	14	281	2	-40	14	0	-92	72	1	-152	195	2
	grandtheftau	2	281	14	339	14	1	783	72	6	1285	195	16
granturismo													
	0	15	203	0	-20	13	0	-18	11	0	-73	179	0
	granturismo	0	203	15	665	13	1	617	11	1	2455	179	16
guitarhero													
	0	15	14	1	14	6	0	-16	8	0	-6	1	0
	guitarhero	1	14	15	-401	6	0	467	8	1	160	1	0
halflife													
	0	15	62	1	-6	1	0	44	35	0	38	26	0
	halflife	1	62	15	115	1	0	-792	35	3	-689	26	2
halo													
	0	15	29	1	-28	16	0	-8	1	0	-23	11	0
	halo	1	29	15	585	16	1	161	1	0	481	11	1
heroesmm													
	0	15	47	1	6	1	0	9	2	0	40	44	0
	heroesmm	1	47	15	-153	1	0	-241	2	0	-1082	44	4
kabal													
	0	15	55	0	38	48	0	-14	7	0	-1	0	0
	kabal	0	55	15	-1279	48	4	471	7	1	47	0	0
knightsofthe													
	0	15	17	0	-13	11	0	-4	1	0	9	5	0
	knightsofthe	0	17	15	858	11	1	298	1	0	-591	5	0
littlebigpla													
	0	15	14	0	10	6	0	3	1	0	-11	7	0
	littlebigpla	0	14	15	-597	6	1	-187	1	0	648	7	1
longestjourn													
	0	15	33	0	4	1	0	16	15	0	17	17	0

longestjourn	0	33	15	-245	1	0	-944	15	1	-986	17	2	
mariokart	0	15	73	0	41	56	0	3	0	0	-22	17	0
mariokart	0	0	73	15	-1376	56	5	-84	0	0	757	17	2
masseffect	0	15	409	1	-56	70	0	123	338	1	-7	1	0
masseffect	0	1	409	15	1248	70	6	-2737	338	30	162	1	0
metalgearsol	0	15	33	0	-8	5	0	10	8	0	-15	19	0
metalgearsol	0	0	33	15	650	5	0	-836	8	1	1249	19	2
monkeyisland	0	15	42	1	-15	7	0	33	31	0	-12	4	0
monkeyisland	0	1	42	15	434	7	1	-951	31	3	354	4	0
needforspeed	0	15	7	0	3	0	0	-10	4	0	10	3	0
needforspeed	0	0	7	15	-108	0	0	348	4	0	-324	3	0
neverwintern	0	15	37	0	-3	1	0	21	31	0	9	6	0
neverwintern	0	0	37	15	189	1	0	-1452	31	3	-621	6	1
proevolution	0	15	46	0	-13	6	0	-33	40	0	-4	0	0
proevolution	0	0	46	15	466	6	1	1214	40	4	132	0	0
reddeadredem	0	15	241	0	-26	23	0	8	2	0	-80	216	1
reddeadredem	0	0	241	15	884	23	2	-277	2	0	2697	216	20
residentevil	0	15	65	0	22	41	0	13	15	0	-11	9	0
residentevil	0	0	65	15	-1835	41	4	-1101	15	1	871	9	1
settlers	0	15	56	0	2	0	0	-1	0	0	28	55	0
settlers	0	0	56	15	-156	0	0	88	0	0	-1943	55	5
sims	0	14	201	2	157	195	2	-6	0	0	29	6	0
sims	0	2	201	14	-1238	195	15	47	0	0	-225	6	1
singstar	0	15	127	0	46	126	0	-1	0	0	2	0	0
singstar	0	0	127	15	-2722	126	11	45	0	0	-140	0	0
spore	0	16	35	0	15	31	0	-1	0	0	5	3	0
spore	0	0	35	16	-2076	31	3	77	0	0	-668	3	0
starcraft	0	14	162	1	-65	41	0	73	52	0	85	70	1
starcraft	0	1	162	14	628	41	3	-708	52	4	-821	70	6
supermario	0	14	323	1	142	234	2	43	22	0	-76	68	1
supermario	0	1	323	14	-1649	234	19	-500	22	2	889	68	6
tekken	0	15	11	0	6	2	0	9	5	0	7	3	0
tekken	0	0	11	15	-409	2	0	-594	5	0	-486	3	0
tetris	0	15	148	1	71	146	0	-7	2	0	-1	0	0
tetris	0	1	148	15	-2053	146	13	211	2	0	37	0	0
tombraider	0	15	74	0	27	52	0	14	14	0	-11	8	0
tombraider	0	0	74	15	-1882	52	5	-981	14	1	736	8	1
totalwar	0	15	35	1	-36	25	0	-2	0	0	22	10	0
totalwar	0	1	35	15	710	25	2	35	0	0	-445	10	1
tycoon	0	15	57	1	-0	0	0	0	0	0	44	57	0



tycoon		1	57	15	13	0	0	-13	0	0	-1278	57	5
warcraft	0	15	39	1	-9	2	0	-15	5	0	37	32	0
warcraft		1	39	15	210	2	0	351	5	0	-863	32	3
wiisport	0	15	21	0	18	18	0	1	0	0	-6	2	0
wiisport		0	21	15	-1030	18	2	-67	0	0	371	2	0
worldofwarcr	0	14	51	2	19	3	0	16	2	0	75	46	0
worldofwarcr		2	51	14	-149	3	0	-133	2	0	-608	46	4
zelda	0	15	200	1	93	120	1	49	33	0	-57	46	0
zelda		1	200	15	-1292	120	10	-682	33	3	798	46	4
uncharted	0	15	156	0	-9	8	0	-3	1	0	-38	148	0
uncharted		0	156	15	894	8	1	295	1	0	3903	148	14
sudoku	0	15	29	0	16	27	0	-4	2	0	2	0	0
sudoku		0	29	15	-1656	27	2	399	2	0	-211	0	0
simcity	0	15	18	0	-3	1	0	-7	5	0	11	13	0
simcity		0	18	15	270	1	0	701	5	0	-1142	13	1
rockband	0	16	5	0	-2	1	0	6	5	0	-1	0	0
rockband		0	5	16	310	1	0	-803	5	0	89	0	0
portal	0	15	7	0	-6	3	0	6	3	0	-3	1	0
portal		0	7	15	526	3	0	-467	3	0	282	1	0
maxpayne	0	15	23	0	-7	5	0	-13	16	0	4	2	0
maxpayne		0	23	15	704	5	0	1300	16	2	-433	2	0



hitman													
	0	16	17	0	1	0	0	2	1	0	-11	16	0
hitman		0	17	16	-176	0	0	-299	1	0	1499	16	2

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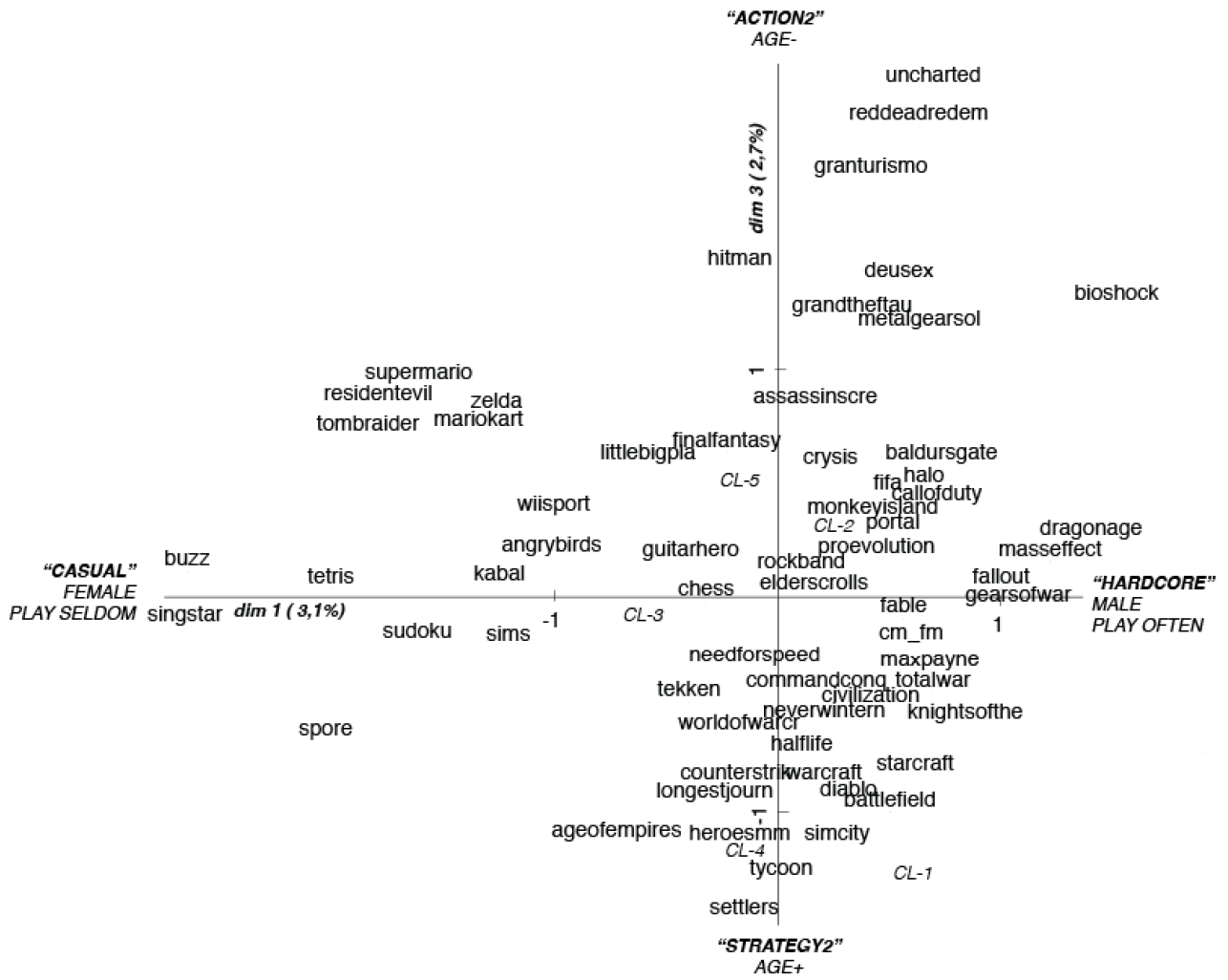


Figure A1: Favourite video game series (symbolic space). MCA, axis 3-1. Active categories.

Table A2: Explicative and explained categories. MCA, axis 1-3.

AXIS 1		AXIS 2		AXIS 3	
-	+	-	+	-	+
<i>Explaining:</i>		<i>Explaining:</i>		<i>Explaining:</i>	
Supermario .11 Sims .09		masseffect .18 dragonage .12 bioshock .05 fallout .04 starcraft .03 zelda .02 monkeyisland .02 finalfantasy .02 assassinscr .02 halflife .02 neverwintern .02 supermario .01 tomraider .01 -callofduty .01 residentevil .01 -cm_fm .01 -fifa .01 baldursgate .01 longestjourn .01	cm_fm .08 fifa .08 callofduty .05 grandtheftau .04 PES .02 crisis .02 -masseffect .01 battlefield .01 maxpayne .01 grantourismo .01 command&c .01 counterstrike .01		reddeadrev .12 grandtheft .10 grantourismo .10 uncharted .08
<i>Explained (only positive categories)</i>		<i>Explained (only positive categories)</i>		<i>Explained (only positive categories)</i>	
Supermario .41 Sims .34 Tetris .31 Zelda .22 Singstar .21 Mario Kart .21 Tomb Raider .21 Solitaire .19 Buzz .18 Angry Birds .16 Spore .15 Resident Evil .14 Sudoku .09 Wii Sports .08	Fallout .19 Gears of War .12 Dragon Age .09 Cm/Fm .11 Starcraft .11 Mass Effect .10 Bioshock .10 Total War .09 SW:KNOR .09	masseffect .38 dragonage .32 bioshock .21 fallout .16 assassinscr .12 halflife .11 neverwintern .11 starcraft .10 finalfantasy .09 monkeyisland .06 baldursgate .06	fifa .30 cm_fm .24 callofduty .18 PES .14 maxpayne .13 grandtheftauto .11 crisis .10 command&c .06	battlefield .17 diablo .15 starcraft .12 wow .12 agesofempires .12 counterstrike .11 settlers .11 tycoon .10 warcraft .10 halflife .07 simcity .07 command&c .06	grantourismo .39 grantheftauto .27 reddeadrev .23 uncharted .20 supermario .08 assasinscr .08 deusex .08 zelda .06 hitman .06

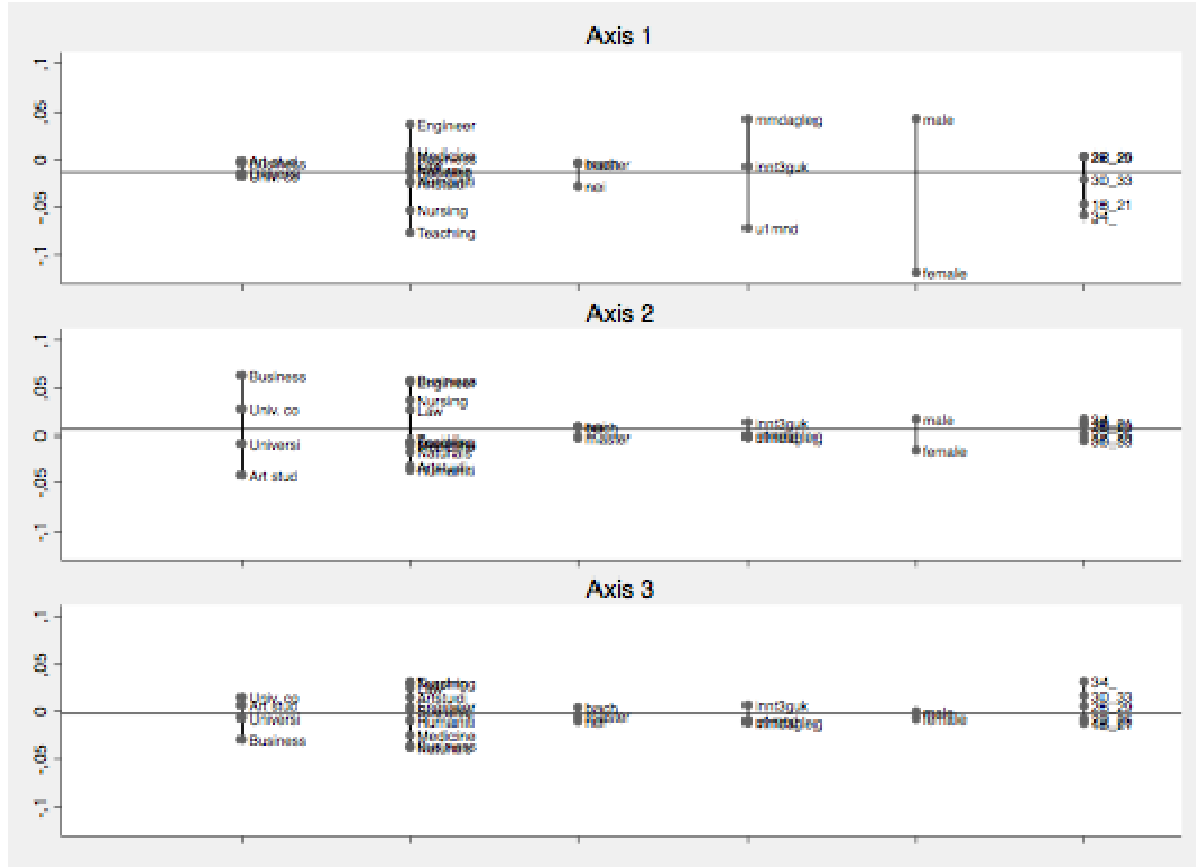


Table A3. Remaining popular game series and their association to cluster 1-5. Percentages of each cluster who have mentioned the series.

	(1) Nintendo	(2) Fantasy	(3) PC/Strategy	(4) Casuals	(5) Lads	Total
N=	53	179	153	74	299	758
starcraft	0	7	3	1	8	6
diablo	0	3	3	1	6	4
commandconq	4	3	5	3	4	4
halflife	4	4	1	3	3	3
battlefield	0	2	3	0	5	3
halo	4	3	1	0	4	3
warcraft	0	1	2	1	4	3
needforspeed	0	1	7	0	1	2
proevoluti-r	0	1	0	0	4	2
granturismo	0	3	0	0	2	2
longestjou-y	0	1	7	0	0	2
reddeadred-n	0	7	0	0	0	2
buzz	0	6	0	0	0	1
dragonage	0	6	0	0	0	1
gearsofwar	0	2	0	0	2	1
settlers	0	0	6	0	0	1
littlebigp-t	0	1	5	0	0	1
baldursgate	0	1	5	0	0	1
singstar	0	4	0	0	0	1
tombraider	2	4	0	0	0	1
crysis	0	0	0	4	1	1
knightsoft-c	0	3	0	0	0	1
deusex	0	0	4	0	0	1
tekken	0	0	4	0	0	1
bioshock	0	3	0	0	0	1
fable	0	3	0	0	0	1
metalgears~d	0	3	0	0	0	1
neverwinte~s	0	3	0	0	0	1

Table A4: Social characteristics of cluster 1-5, by gender. Percentages. Students of Bergen and Oslo 2008/2010.

r02alder5 (RECODE of v02alder)	kly5b and v1 kjønn									
	-- kly1 --		-- kly2 --		-- kly3 --		-- kly4 --		-- kly5 --	
	f	m	f	m	f	m	f	m	f	m
18_21	32	28	32	18	38	13	27	5	22	25
22_25	54	28	38	53	41	41	42	23	58	49
26_	14	44	30	29	21	46	31	73	20	27
fa master	31	24	36	34	22	31	27	14	28	28
bach	35	28	21	37	27	40	35	36	28	41
nei	35	48	43	29	51	29	37	50	44	30
univ	54	84	70	69	66	66	54	64	64	51
univ_coll	32	4	19	20	22	16	40	27	28	27
Oslo	43	56	53	62	46	34	62	68	40	43
Bergen	57	44	47	38	54	66	38	32	60	57
aldri	11			2	10	3	16	14	10	1
1-5g p År	11		17	2	18	6	20	27	19	6
6-11g pÅr	11	12	26	8	23	16	18	27	17	10
1-3g pmÅn	43	29	23	14	27	19	22	9	12	19
1-3g pveke	18	33	23	34	15	31	12	14	27	28
5-6g pveke	7	17	9	18	2	16	8	9	8	21
dagleg		8	2	22	5	9	4		6	15
TOTAL	100	100	100	100	100	100	100	100	100	100
TOTAL (N)	28	25	47	132	82	70	52	22	50	249

Table A5: Some popular game cluster series and their association to cluster 1-5. Percentages of students in each cluster who have mentioned the series<sup>xxi</sup>. By gender.

N=	(1) Nintendo		(2) Fantasy		(3) PC Strategists		(4) Casuals		(5) Lads		Total
	F	M	F	M	F	M	F	M	F	M	ALL
	53		179		153		74		299		758
<b>zelda</b>	<b>46</b>	<b>56</b>	6	2	1	1	0	0	0	0	5
<b>supermario</b>	<b>54</b>	<b>32</b>	4	5	4	0	6	9	0	1	5
<b>mariokart</b>	<b>18</b>	<b>20</b>	0	0	5	1	0	0	0	0	2
<b>wiisport</b>	<b>14</b>	<b>12</b>	0	0	0	0	2	0	0	0	1
<b>residentevil</b>	<b>11</b>	<b>16</b>	0	0	0	0	0	0	0	0	1
<b>fallout</b>	0	0	<b>0</b>	<b>22</b>	1	3	0	5	0	0	4
<b>finalfantasy</b>	0	0	<b>17</b>	<b>11</b>	0	0	0	0	0	0	3
<b>totalwar</b>	0	0	<b>2</b>	<b>15</b>	0	0	0	0	0	1	3
<b>elderscrolls</b>	4	0	<b>4</b>	<b>13</b>	0	0	0	0	0	0	3
<b>assassinsc~d</b>	0	0	<b>15</b>	<b>8</b>	2	1	0	0	0	0	3
<b>guitarhero</b>	0	0	<b>19</b>	<b>7</b>	1	0	0	0	0	0	3
<b>masseffect</b>	0	0	<b>0</b>	<b>14</b>	0	0	0	0	0	0	2
<b>sims</b>	11	4	11	1	<b>60</b>	<b>4</b>	17	5	2	1	10
<b>civilization</b>	0	4	0	8	<b>7</b>	<b>31</b>	2	0	0	4	7
<b>ageofempires</b>	0	4	0	1	<b>11</b>	<b>10</b>	0	0	0	0	3
<b>monkeyisland</b>	0	0	0	1	<b>6</b>	<b>17</b>	0	0	0	0	2
<b>heroesmm</b>	0	0	2	2	<b>9</b>	<b>9</b>	0	0	0	0	2
<b>tycoon</b>	4	4	0	2	<b>2</b>	<b>14</b>	0	0	0	0	2
<b>angrybirds</b>	0	4	2	0	0	0	<b>25</b>	<b>45</b>	0	0	3
<b>kabal</b>	4	0	2	0	1	0	<b>35</b>	<b>18</b>	0	1	4
<b>tetris</b>	0	0	4	0	0	1	<b>33</b>	<b>18</b>	0	0	3
<b>chess</b>	0	0	0	0	0	0	<b>2</b>	<b>23</b>	0	0	1
<b>spore</b>	0	0	0	0	0	0	<b>10</b>	<b>5</b>	0	0	1
<b>cm_fm</b>	0	8	0	9	0	16	0	0	<b>2</b>	<b>24</b>	11
<b>fifa</b>	0	8	2	4	0	3	0	9	<b>4</b>	<b>18</b>	8
<b>callofduty</b>	0	4	2	8	1	0	0	9	<b>2</b>	<b>19</b>	8
<b>worldofwar~t</b>	7	0	9	5	5	3	4	0	<b>22</b>	<b>12</b>	8
<b>grandtheft~o</b>	4	4	0	7	4	7	0	0	<b>6</b>	<b>12</b>	7
<b>counterstr~e</b>	0	0	2	0	1	0	0	5	<b>4</b>	<b>11</b>	4

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<sup>i</sup> The first study was done in late 2008 by Jostein Gripsrud, Jan Fredrik Hovden and Hallvard Moe as part of the DigiCult project (Democracy and the Digitisation of Audiovisual Culture, [www.digicult.uib.no](http://www.digicult.uib.no)) at the department of Media and Information Science, UiB, the second in 2010 by Svein Bjørkås and Jan Fredrik Hovden at the department of Musicology, UiO. Participating institutions, Bergen: University of Bergen (UIB), The Norwegian School of Business Administration (NHH), Bergen University College (HIB), The Norwegian School of Business Management, Bergen (BI) and National College of Art, Bergen (KHIB). Oslo: University of Oslo (UiO), Norwegian Academy of Music (NMH), The Oslo School of Architecture and Design (AHO) and Oslo National Academy of The Arts (KHiO).

<sup>ii</sup> The Oslo-questionnaire (91 questions) was a slightly updated and slimmed down version of the Bergen questionnaire (97 questions), with some extra questions related to music. Note that the Bergen study was a follow-up of a very similar survey done in 1998, where some changes in this period are discussed in Jostein Gripsrud, Jan Fredrik Hovden, and Hallvard Moe (2011).

<sup>iii</sup> Both questionnaires included open questions on the names of magazines read and web pages visited regularly, which makes it possible to map the reading of computer/game magazines/websites (the former question was also included in the Bergen 1999 study). This information, however, will not be used in this paper.

<sup>iv</sup> Students at the universities and university colleges in Bergen and Oslo (UiO, HiO, UiB, HiB).

<sup>v</sup> The classification of father's class position is based on the relative placement of the students' fathers in the social space of Bergen students in 2008, which is documented in Ibid.

<sup>vii</sup> In effect, we have simultaneously done MCA and principal component analysis (PCA) on the same matrix, the two methods being methodologically equivalent as this is an indicator matrix. Some output from the PCA is given in the table supplement.

<sup>viii</sup> One "residual" category for series, "generic", was also deleted as it did not point to a specific series.\*

<sup>ix</sup> 27% of respondents (which named *at least* one game) named one series, 25% named two, 45% three, and 4% named more than three - maximum. Note that by the reduction of original titles into series, some respondents entered more original titles - this number only reflects the number of series.

<sup>x</sup> The reason that we do not reintroduce the excluded series in aggregated form in the analysis (e.g. "other racing games", "other FPS") is that this would introduce variables of a very different sort, both pre-classified and aggregated.

<sup>xi</sup> Percent of explained principal inertia axis 1-5: 3.1%, 2.9%, 2.7%, 2.6% and 2.5%. Rho=0.0866.

<sup>xii</sup> For more on the interpretation of the placement of categories in MCA, see Brigitte Le Roux and Henry Rouanet, (2010).

<sup>xiii</sup> Horn's Parallell Analysis suggests 3 significant components.

<sup>xiv</sup> Note: in addition to the active categories, the coordinates for cluster 1-5 is shown in the map as passive categories.

<sup>xv</sup> Among those who have named at least one favourite game, 28% say that they play less than once a month and 26% that they play more or less daily. In the complete sample (including also those who have not named a game), the same proportions were 46% and 10%.

<sup>xvi</sup> The third axis (shown in figure A1 and its statistical properties given in table A1 and A2) to some degree seem to nuance the oppositions given by axis 1 and 2, mainly by bringing out an opposition between PC- and console-players.

<sup>xvii</sup> Hierarchical cluster analysis on the coordinates on the first ten axes from the previous MCA, using Ward's method (Chi2). A five-cluster solution was suggested by Duda/Hart  $Je(2)/Je(1)$  index stopping rule.

<sup>xviii</sup> The cluster association for the remaining most popular games is given in table A3.

<sup>xix</sup> Although surveying much younger groups, the latest report from the Norwegian Medietilsynet demonstrates this point. Whereas 41% of boys 9-16 years report that they play games several times a day, the percentage for girls is 21%. The data also indicates that gender difference increase as kids get older: Whereas none of the boys state that they never play, 25% of the 15-16 year old girls never play games. The report from Medietilsynet also confirms clear differences in game preference: Girls 15-16 rank The Sims and Tetris as top favourites, boys 15-16 rank Call of Duty and FIFA. We should note, however, that 10% of the girls also rate CoD as their favourite game.

<sup>xxi</sup> The cluster association for the remaining most popular games is given in table A\*.