View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by DOCS@RWU

Proceedings of the New York State Communication Association

Volume 2013 *Proceedings of the 71st New York State Communication Association*

Article 7

2014

The Hardcore Scorecard: Defining, Quantifying and Understanding "Hardcore" Video Game Culture

Joseph A. Loporcaro
St. John Fisher College, JL298@buffalo.edu

Christopher R. Ortega
chrisortega51@gmail.com

Michael J. Egnoto
michaelegnoto@gmail.com

Follow this and additional works at: http://docs.rwu.edu/nyscaproceedings

Part of the Mass Communication Commons

Recommended Citation

Loporcaro, Joseph A.; Ortega, Christopher R.; and Egnoto, Michael J. (2014) "The Hardcore Scorecard: Defining, Quantifying and Understanding "Hardcore" Video Game Culture," *Proceedings of the New York State Communication Association*: Vol. 2013, Article 7.
Available at: http://docs.rwu.edu/nyscaproceedings/vol2013/iss2013/7

This Conference Paper is brought to you for free and open access by the Journals at DOCS@RWU. It has been accepted for inclusion in Proceedings of the New York State Communication Association by an authorized administrator of DOCS@RWU. For more information, please contact mwu@rwu.edu.

The Hardcore Scorecard: Defining, Quantifying and Understanding "Hardcore" Video Game Culture

Joseph A. Loporcaro, Christopher R. Ortega, Michael J. Egnoto
St. John Fisher College

The goal of the current study is to further conceptualize and define the term "hardcore" as it relates to video game culture. Past research indicates that members of cultural subdivisions favor their own group versus others due to perceived commonalities (Durkheim, 1915; Tajfel, 1970). In gaming culture, the subdivisions of "hardcore" and "casual" games/gamers have become especially salient in recent years. However, the definition of what constitutes "hardcore" and "casual" is inconsistent (Adams, 2000; Alexandre, 2012; Jacobs & Ip, 2003; Juul, 2010; Kim, 2001; Kuittinen, Kultima, Niemelä & Paavilainen, 2007; Wallace & Robbins, 2006). Therefore, it is beneficial to better understand these terms considering the implications: less audience infighting, more accurately tailored game design/marketing, and less ambiguous/ sensationalist gaming journalism/media.

In 2012, consumers spent $20.77 billion on computer and video games; this figure was up from $5.5 billion in 2000 (Entertainment Software Association, 2013). This rapid growth in popularity forced the game industry and its culture to evolve just as quickly. However, this process was not without growing pains. The present research focuses on the issue and implications of a modern video game culture confused over definition of the term "hardcore." In this context, "hardcore" is treated as a broad concept encompassing perceptions of hardcore gamer characteristics, their gaming behaviors, their self-identity and what criteria make certain games hardcore. The video game culture in question refers to three primary divisions: the audience (gamers), game developers, and game journalists.

For gamers, a more clearly defined terminology could lead to less infighting as flame-wars in online communities have raged over who and what is and is not accepted as "hardcore" (Alexandre, 2012; Sterling, 2010). In theory, hardcore membership then becomes a very desired and exclusive club where acceptance is based on what games you play and how you play them. Very vague rules (hardcore = good, casual = not good) and questions of self-identity lead to constant infighting between gamers— especially online where game culture thrives (Alexandre, 2012). Some game media websites, like Gamasutra.com, occasionally run stories based on, or referring to, academic research. Though this is not the norm in game media, like anything posted online, research on hotly debated subjects often goes viral. By better defining "hardcore," the present research seeks to offer the first steps towards a solution gamers could share online to reduce infighting through more informed discourse.

For game developers, confusion over the definition of "hardcore" presents a challenge. For instance, if "hardcore" equals good, and puzzle games are not considered hardcore,

should a puzzle game developer worry his game will automatically be judged as bad? Likely not. Game developers could use a more defined knowledge of "hardcore" associations to craft and market games more appropriately for their desired target audience; but this would only be successful with greater education about the definition of hardcore. Lastly, game journalists will see the legitimacy and credibility of their craft increase as sensationalist articles exploiting the insecurities of "hardcore" identity ambiguity decrease. Of course, these are all hopes for the future. The current culture is hampered by confusion due to the ambiguity of the term "hardcore."

Problematic Circumstances

The problem arises when "[casual] is used as if there were general consensus over its meaning. Without a clear understanding of the 'casual' in games and games culture, these discussions are confusing and difficult to understand" (Kuittinen, Kultima, Niemelä, & Paavilainen, 2007, p. 1). The problem of understanding "casual" gaming is, of course, intrinsically linked to understanding "hardcore" gaming, as people often define hardcore and casual in relation to each other.

The confusion compounds itself and "may lead to paradoxical readings" when distinctions are not made between what might be considered a casual gamer, a casual game, or someone playing any game casually—instead all possibilities are given the one umbrella label (Kuittinen et al., 2007, p. 1). Further, Kuittinen et al. believe "it is important to understand the difference between playing casual games and playing games casually. It is also important to realise that 'casual' itself is not only a property of the game but relates to many other things such as player attitude or availability of the game" (p. 6).

Consider the following example to illustrate one potential problem that would result from one such "paradoxical reading." The browser-based online game, *FarmVille*, is widely considered a casual game due to its relatively low intensity, low barrier of entry (the game is free to play), etc. However, the gameplay of *FarmVille* accommodates both the typically "casual" desire for short bursts of gameplay, as well as the typically "hardcore" desire for a game that can be addictively played for hours at a time. If the next game developer who tries to emulate *FarmVille*'s success incorrectly assumes that they only need to appeal to the typically casual attitude of short burst gameplay, they have already potentially hindered the potential for their product's success. The paradoxes become further apparent when considering the model of a gamer who plays a game typically considered "hardcore" (such as *World of Warcraft*, *Halo*, or *Call of Duty*) only casually. In this sense, playing casually may refer to nothing more than playing strictly for fun with a relaxed attitude as opposed to cutthroat competition or overcoming difficult challenges. This also includes gamers who may meet all the criteria of a "hardcore" stereotype, but simply lack large amounts of free time to devote to their gaming (Kuittinen et al., 2007).

In an interview on G4 (formerly television's most dedicated gaming channel—88,000 daily viewers [Gorman, 2009]), Brian Crescente, former managing editor of Kotaku.com (one of the Internet's most popular gaming websites—2.5 million monthly readers [Gawker Media, 2011]), discussed what he describes as "hardcasual gamers, people who like both hardcore and casual games" (G4 Media, LLC, 2008). In addition, Jason Schreiber,

founder of Powerhead Games, described his product, *Glow Artisan*, as a "casual, hardcore game" (NintenDaanNC, 2010). If the definition of these terms were as clearly distinguished as the impetus to judge and classify implied, wouldn't these journalists and developers be speaking in paradoxes? While journalists may actually enjoy higher short-term site traffic/ratings due to an audience desperate for answers they are not provided, the game developers are merely struggling in earnest to build and market the right product for the right audience.

Theoretical Context

Belonging to the hardcore of any culture involves certain understandings and expectations. It may be understood that hardcore male swimmers shave their legs to minimize resistance in water, or that hardcore punk rock fans do not listen to disco music. Depending on the culture, the criteria for hardcore status may consist of strictly enforced norms, or flexible guidelines. At the other end of the spectrum, there are casual participants in a given culture. Though, for reasons that are self-evident, the impetus to identify and label the casual members of a culture is usually not as powerful. Casual swimmers may only have enough proficiency to enjoy leisure time at a public pool. Casual fans of punk rock may enjoy a wide range of diverse music.

Regardless of its criteria for group classification, culture has different degrees of discrimination across hardcore and casual boundaries. For instance, hardcore swimmers may still understand and respect those who swim only casually; but, hardcore punk rock fans may not have any good will for those who also enjoy disco. This concept of ingroup/outgroup discrimination stems from Durkheim's (1915) observations and Tajfel's (1970) experiments. The relevance of Durkheim's work comes in the form of what he describes as the sacred and the profane. In this religious context, that which is considered sacred and profane is separated by "an abyss" (Durkheim, 1915, p. 60)—"a simple change of degree could not be enough to make something pass from one category into the other" (Durkheim, 1915, p. 61).

The same notions of the sacred, and the profane, permeate through the culture of gaming while making hardcore and casual distinctions. Says Joe McNeilly of GamesRadar.com, "is there anything more disgusting than the casual gamer? We checked the Internet, and can definitively say that no, there is no baser creature in existence. Not even [executives from the oilfield service company, Halliburton]" (2009, para. 1).

Moreover, Tajfel (1970) found that participants consistently favored anonymous members of what they were told was their own group versus anonymous members of the other group. This finding illustrates a subconscious, seemingly irrational discrimination based simply on group membership. For the purposes of this study, the ingroups and outgroups being investigated are hardcore and casual video game users.

By the turn of the millennium, several researchers began addressing the need to look at video games beyond an effects perspective. Adams (2000), Kim (2001), and Jacobs and Ip (2003) each contributed criteria that would flesh out the definition of "hardcore" and "casual" gamers. These included behaviors like being knowledgeable of game-related

technology, playing for longer periods of time, and being more willing to spend money on gaming.

Kirman and Lawson (2009) define hardcore gaming from a more network-oriented perspective, stating that the "Hardcore represent the pioneers of a game, and despite being a small minority of the total player-base, they help define the experience for their fellow players through their actions and behaviour" (p. 246).

> Hardcore players are the smallest group of players of the game, but the most influential, having invested time and effort to become the most important nodes in the network of the game. Casual players (or marginal nodes in Network Analysis terms) account for the remainder of the active players who have invested a little in the game, but not as much as the hardcore. (p. 249)

Kirman and Lawson also introduced a third term, "peripherals," who are gamers that don't play or interact much at all. Their analysis found that while hardcore gamers made up only 12.24% of their sample, they were responsible for 50.08% of total interactions. Thus, hardcore gamers provided a structural foundation for the network, without which, the network would fall apart—the game would not continue (Kirman & Lawson, 2009).

Wallace and Robbins (2006) also took a triple-strata approach. Whereas Kirman and Lawson added "peripherals" at the end of the spectrum, Wallace and Robbins added "core" to the middle of it. Wallace and Robbins (2006) describe the hardcore gamers group as typically playing high-action, extremely competitive games that require a greater degree of involvement or dexterity in order to progress. Secondly, the "core" gamers group typically plays games with either a steep learning curve, some level of deep involvement, or a tactical challenge. Finally, the casual gamers group plays for enjoyment and relaxation rather than for steep learning curves or high levels of commitment/involvement.

As impressive as these studies may be, they leave two noticeable gaps that the present research hopes to fill. Firstly, as was mentioned earlier, there are two concepts that are most typically considered for "hardcore" classification: gamers and games. The prior research does an excellent job describing the attributes that could make a gamer "hardcore," but largely neglects the attributes that could make games "hardcore." Secondly, part of the impetus for the present research is to provide a tangible tool which gamers, game developers, and game journalists can use to better their own personal situation or their segment of gaming culture. Prior research, while valuable academically, doesn't give much for the above sections of video game culture to grab hold of and use to their advantage. The product of the present research, the "hardcore scorecard," can be used to systematically evaluate how "hardcore" a game is. While trying to concretely define "hardcore" may realistically be as futile as trying to define "art," the pretense of the "hardcore scorecard" is that it is the definition of "hardcore" as informed by the masses. In other words, it may not be the definition, but it may just be the most widely accepted definition.

Methods

The present research operates in two primary steps. The first step gathers results from survey data collected regarding the perceived behavior of "hardcore" gamers to make a series of weighted scores that can be applied to video games. Thus, any game analyzed in this method will yield a hardcore index or score. Those scores are then correlated with independently collected evaluations of how "hardcore" certain corresponding games are from the Wii's Nintendo Channel. A significant correlation would suggest validity in the current method that could be applied to all games going forward and help fill the research gaps on the games' side of the equation.

The survey collected data for a Galileo model, plus multiple-response and Likert scale items to provide a possible back-story to the Galileo output. The Galileo model allows survey users to manipulate sliders between two concepts. The slider values range from 0 to 1000. This value represents how close together (lower numbers) or far apart (higher numbers) the two concepts are in the mind of the survey user. For example, in a group of beverages, "Pepsi" and "Coke" may be rated very close together if they are the only two sodas present. However, in a group of many different colas, "Pepsi" and "Coke" may be perceived as very different. Ultimately, users can implement whatever internal criteria they prefer to make these pair comparisons. Comparisons are made for permutations of all concepts under review. The data for all users are then tabulated to produce a set of mean distances between each combination of pair comparisons. These mean distances, which reflect the view of the entire sample, are then arranged in three-dimensional Reimann space as invisible lines between nodes representing the concepts under review. The resulting output is a visual "solar system" representative of the relative, spatial conceptualizations of the entire sample (Woelfel & Fink, 1980).

These surveys were administered online and 113 responses were collected. Of that 113, four were eliminated due to incompleteness for a total of 109 usable surveys. The data used for this study come from those responses. The average age of study participants in the final sample was 20.12 years of age (SD = 3.32), with a minimum response of 18-years-old and a maximum response of 48-years-old. Regarding gender, 50.9% of participants were male and 49.1% were female. The majority of participants identified their ethnic background as Caucasian/White (72.5%), while 15.6% were Asian/Pacific, 4.6% were African American/Black, and about 7.3% reported a variety of other demographic markers.

Galileo Measurements

To draw conclusions using the Galileo model, appropriate concepts of video game culture had to first be determined. The selection of the following concepts was informed by the review of literature presented above: Hardcore, Casual, EC/E/E10, T/M/AO, Pro-Social Gameplay, Anti-Social Gameplay, Accessible Gameplay, Challenging Gameplay, Microsoft, Nintendo, Sony, and Yourself (the respondent). "EC/E/E10" refers to the three least-prohibitive classifications from the Entertainment Software Review Board (ESRB): Early Childhood, Everyone and Everyone 10+. "T/M/AO" refers to the three most-prohibitive classifications from the ESRB: Teen, Mature, and Adults Only. In regards to Microsoft and Sony, who have well-known business success in industries other

than gaming, participants were instructed to respond based on only the game-related products these companies produce (Xbox and PlayStation products).

Measurements of Perceptions and Behavior

The next portion of the survey gathered some specifics of hardcore and casual perceptions as well as self-reported background information on the respondents' individual perspectives. Survey items asked about respondent's familiarity with hardcore/casual terminology as well as their assessments regarding the value of those terms. In addition, respondents were asked to what degree they agree "hardcore" gamers exhibit the following behaviors: playing First Person Shooter (FPSs), puzzle games, competitive online games, cooperative online games, in high definition (HD), colorful games, violent games, family-friendly games, games with intimidating or adorable protagonists, in long or short durations of time, as well as buying online or at physical stores, and, lastly, consumption of game-related media. This group of survey items was based on prior research (Adams, 2000; Bakalar, 2007; Bateman & Boon, 2006; Jacobs & Ip, 2003; Juul, 2010; Kim, 2001; Kuittinen et al., 2007; Ring, 2011; Snow, 2011) and tests the validity and severity of generalizations surrounding hardcore gaming.

The Hardcore Scorecard

Next, the research identified and attributed values to the notable criteria examined in the survey items. Data from the multiple-response items and some of the Galileo output were used to build a scale of "hardcore" values. After a series of one-sample t-tests, survey items with positive values significantly ($p < .001$) different from the midpoint were assigned positive scores. Those with large effect sizes were assigned a score of +3, moderate +2, and small +1. Items with negative values significantly ($p < .001$) different from the midpoint were assigned negative scores. Those with large effect sizes were assigned a score of -3, moderate -2, and small -1.

The two Galileo concepts closest to the "hardcore" concept were assigned scores based on the mean distances between themselves and "hardcore" in the Galileo output. These scores were scaled from the 0 to 1000 range of the Galileo model to the -3 to +3 range established by the t-test variables described above. Thus, since the mean distance between "challenging gameplay" and "hardcore" was 336.740, it was scaled to 0.9796 for its assigned hardcore score. The mean distance between "anti-social gameplay" and "hardcore" was 381.356 so its assigned hardcore score was 0.7119.

The sums of these scores were then tallied to render a "hardcore score" for all video games analyzed. As an alternative, an adjusted final score was produced to account for Galileo concepts that were notably moved away from the "hardcore" concept when analyzing self-reported hardcore respondents. In other words, how might the "hardcore score" change when viewed through the lens of the self-reported "hardcore gamer?" The mean distance between "being on a Nintendo platform" and "hardcore" was 634.571, and the mean distance between "accessible gameplay" and "hardcore" was 580.071. Using the same scaling method mentioned above, these items were assigned hardcore scores of -0.8074 and -0.4804, respectively.

Table 1 below details all the criteria, their assigned scores, and the qualifications or guidelines used for individual scoring. Note that the criteria from the survey regarding the place of game purchase (online vs. brick and mortar store) were not implemented in this analysis since the availability of nearly all games from both methods rendered them irrelevant from the perspective of game assessment. Criteria regarding the consumption of gaming media were also not implemented for the same justification.

Together, the assembly of video game titles, criteria scores, and final scores, forms what the present research calls the "hardcore scorecard."

Table 1. *Hardcore Criteria and Their Assigned Scores.*

Assigned Score	Criteria	Explanation
+3	Game is a First Person Shooter	Self explanatory.
	Game has Competitive Online Play	User works against other users.
	Game has Cooperative Online Play	Remote users work together against the CPU.
	Game is Capable of HD Resolution	720p and above.
	Game is Colorful	Colors are beyond that of typical real life.
	Game is rated for Violence by the ESRB	Sub-categories includ Blood, Blood and Gore, Intense Violence, Violence.
	Game has Intimidating Protagonists	Researcher's Judgment.
	Game is Typically Played for Hours at a Time	The standard stage/area/objective requires several minutes of play before a save point.
+0.9796	Game is Challenging	Galileo concept – Viewing the end credits requires substantially more breadth and/or depth of skill than beating the first few stages/areas/objectives.
+0.7119	Game Allows for Online Anti-Social Interactions	Galileo concept – Defined as offensive chat, teabagging, etc.
-2	Game is a Puzzle Game	Self explanatory.
	Game is Typically Played in Short Bursts	The standard stage/area/objective requires less than 10 minutes before a save point.
	Game is Family Friendly	Rated beow "T" by the ESRB
	Game has Adorable Protagonists	Researcher's Judgment.
Adjustments based on Self-Reported Hardcore Status		
-0.8074	Game is on Nintendo Plaform made by Nintendo	Galileo concept – Self explanatory
-0.4804	Game is Accessible	Galileo concept – The user does not need to grasp an unfamiliar skill or concept to clear the first few stages/areas/objectives.

Testing the Hardcore Scorecard

In order to validate the "hardcore scorecard," independently collected data were recorded from the Nintendo Channel. The Nintendo Channel is a feature on Nintendo's Wii console that is publicly accessible to everyone while their console is connected to the Internet. Among other things, the Nintendo Channel offers a recommendation service designed to let users assess games and services based on data supplied by other, anonymous Wii users. The data are gathered by the Nintendo Channel itself. Users are allowed to submit brief surveys concerning their assessment of any game/service they have used for more than one hour. The scope of the content for these recommendations is limited to only what can be run on a North American Wii console.

The Nintendo Channel displays the top 100 rated games and/or services at any one time. Since Nintendo Channel data are compiled and displayed immediately, it was imperative to

make all observations/recordings at one time. On the date of data recording (March 31, 2012), 98 of the 100 items were video games and thus applicable to the current study (the other two were apps). Of the data provided for each of those 98 games, two variables were used in our analysis: a user-generated hardcore value (percentage), and the number of users who supplied that value.

The 98 video games observed on the Nintendo Channel were scored according to the "hardcore scorecard" system described above. The sum of those scores was tallied for a final score and final adjusted score (based on self-reported hardcore status) for each game. Given the fact that some criteria are mutually exclusive (a game cannot be both "rated for violence by the ESRB" and "family-friendly according to the ESRB") the range of possible values for the final score was -8 to 25.6915, and the range for the final adjusted score was -9.2878 to 25.6915. A correlation was then run between our final hardcore scores and the hardcore percentages from the Nintendo Channel. The result of this correlation would confirm or deny the usefulness of the measures created in our study.

According to Juul (2010), it is tempting to try and classify hardcore gaming by starting with either the games (content) or the gamers (how they play). However, Juul maintains both are "dead ends" (p. 9), and that instead, researchers should analyze the way "games and [gamers] interact with, define and presuppose each other" (p. 9). The preceding methodology is the result of building a survey with that philosophy in mind.

Results

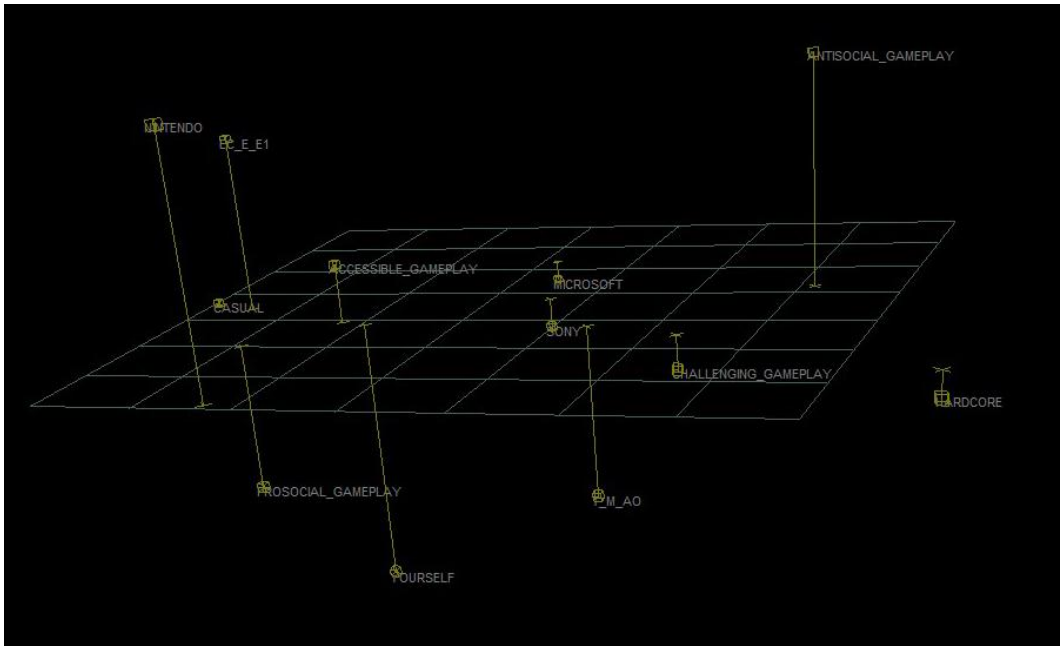
Once all weights and scores had been calculated for the games in question, a correlation was run to determine if the system of criteria and weighted scores could accurately reflect the perceptions of the general American public. The final hardcore score produced by the present research had a large, positive correlation with the hardcore percentage recorded from the Nintendo Channel data ($r = .765$, $p < .01$). The final adjusted hardcore score (accounting for self-reported hardcore gamers) produced by the present research had a large, positive correlation with the hardcore percentage recorded from the Nintendo Channel data ($r = .768$, $p < .01$).

The mean for the final hardcore score was 3.6536 (SD = 6.4698) on a scale ranging from -8 to 25.6915. Visual inspection of the data revealed that they were skewed to the right. The final adjusted hardcore score had a mean of 2.5080 (SD = 6.6395) on a scale ranging from -9.2878 to 25.6915. Visual inspection of the data revealed that they were skewed to the right. On average, the Nintendo Channel hardcore percentage was 50.86 (SD = 24.990). Visual inspection of the data revealed that they were not skewed in either direction. Of the 98 games analyzed, the average sample size of their Nintendo Channel data was 327,818.45 (SD = 452,645.73).

One hundred six respondents provided data for the Galileo data analysis. The distances between "hardcore" and all other concepts were studied to determine how users in the sample conceptualize the term in the context of game culture. It is evident from a visual inspection of the Galileo output that "hardcore" is isolated from other concepts. The only two concepts with mean distances less than 400 units away from "hardcore" were

"challenging gameplay" (M = 336.74, SD = 261.23), and "anti-social gameplay" (M = 381.36, SD = 269.94). At the same time, only two concepts had mean distances more than 600 units away from "hardcore." Those concepts were "casual" (M = 728.14, SD = 289.96) and the "EC_E_E10" ESRB rating (M = 661.13, SD = 272.71). Figure 1 below visually represents this Galileo output.

Figure 1. *Snapshot of Galileo output*



A series of 15 one-sample t-tests were conducted to determine perceived characteristics of hardcore gaming. A five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) was used to assess these perceptions. The "neutral" score, 3 on the Likert scale, was used as the test value for this series of one-sample t-tests. The reports below reflect some of the analyses most pertinent to understanding perspectives about "hardcore" gamers.

Separate one-sample t-tests were conducted on the perception that Hardcore gamers play First-Person Shooters (M = 4.22, SD = 1.02), play Competitive Online games (M = 4.37, SD = .98), play Violent Games (M = 4.27, SD = 1), and play for Hours at a Time (M = 4.47, SD = .93), to determine if these mean scores were significantly different from the "neutral" response. Each mean score was found to be significantly different from 3 at the $p < .001$ level. These results suggest that some perceived characteristics of hardcore gaming are playing First-Person Shooters ($t(105) = 12.24$), playing Competitive Online games ($t(105) = 14.39$), playing Violent Games ($t(104) = 12.95$), and playing for Hours at a Time ($t(102) = 16.05$). Effect sizes from these t-tests are available for examination in Table 2 below. Several other one-sample t-tests were significant at the $p < .001$ level; they are also displayed for examination in Table 2.

Table 2. *Item descriptives and one-sample* t-*tests.*

	M	*SD*	*t*	*df*	*d*
FPS	4.22	1.02	12.24***	105	1.1967
Puzzle Games	2.53	1.13	-4.29***	106	0.4159
Competitive Online	4.37	0.98	14.39***	105	1.3980
Cooperative Online	3.84	1.10	7.90***	106	0.7636
HD	4.02	1.06	9.91***	106	0.9623
Colorful	3.74	1.03	7.38***	105	0.7184
Violent	4.27	1.00	12.95***	104	1.2700
Family Friendly	2.56	1.07	-4.27***	105	0.4112
Adorable Protagonists	2.59	1.09	-3.90***	106	0.3761
Intimidating Protagonists	4.05	1.00	10.70***	104	1.0500
Buy Online	4.05	1.00	10.69***	105	1.0500
Buy Stores	3.58	1.18	5.03***	102	0.4915
Hours at a Time	4.47	0.93	16.05***	102	1.5806
Short Bursts	2.59	1.10	-3.77***	101	0.3727
Consume Media	3.92	1.13	8.36***	104	0.8142

Note. *** = $p < .001$

As a validity check for the above characteristics, a one-way ANOVA was run to determine if self-reported hardcore status could significantly predict any of the 15 criteria perceptions listed above. For reliability purposes, the self-reported hardcore status variable was collapsed from four groups to two (1=1, 2=1, 3=2, 4=2) and the following three groups of two variables were collapsed into three variables: “violent games” and a reverse-coded “family friendly games,” “adorable protagonists” and a reverse-coded “intimidating protagonists,” as well as “plays hours at a time” and a reverse-coded “plays in short bursts.” Significant relationships were found between self-reported hardcore status and five perceptions: that “hardcore” gamers play for long periods of time ($F(1, 88) = , p < .05$), play first-person shooters ($F(1, 88) = , p < .05$), play competitive games ($F(1, 88) = , p < .05$), play in HD ($F(1, 88) = , p < .01$), and buy games from brick and mortar stores ($F(1, 88) = , p < .05$).

Discussion

The first step in the present research sought to contextualize and better define the term “hardcore” in video game culture. Past research suggests that not only is this term currently poorly defined and perhaps paradoxical, but that there are meaningful social and cultural justifications for advancing its understanding.

The Galileo data showed that the concept of “hardcore” was rather isolated. Its closest concepts were “challenging gameplay” and “anti-social gameplay,” while the furthest were “casual” and the lower ESRB ratings of “EC/E/E10.” Both of these findings paint a harsh picture of the hardcore subculture. The gaming itself is arduous and inaccessible, the social interactions are unfriendly, and the members are segregated from their “casual” counterparts.

This, for lack of a better term, "harsh" characterization of the hardcore subculture is also consistent with respondents' overall (63%) belief that hardcore gamers were a negative part of gaming culture. Granted, the sample primarily consisted of respondents who self-reported as not being "hardcore" gamers. However, the present research aimed to paint a picture of the entire culture of gaming. Since, the majority (71.6%) of respondents reported playing games, and that percentage is identical with previous figures on the popularity of gaming (72% of American households play computer or video games [Entertainment Software Association, 2011]), the data suggest that the "hardcore" segment of game culture is just that—a mere segment. This does not contradict the nature of the term. Even in the traditional sense, "hardcore" suggests an elite minority. However, in video game culture, the "hardcore" segment may actually carry connotations that prevent mainstream gamers from wanting to delve further into the culture.

The results of all 15 gaming criteria were found to be significantly different from the neutral response. According to these data, the harsh illustration of hardcore gaming is again supported. Hardcore gamers are perceived to play games with intimidating protagonists, violent games and FPSs, but not puzzle games, family-friendly games or games with adorable protagonists. Results from the above ANOVA reveal that perceptions regarding play time, the FPS genre, competitive play, HD visuals, and brick and mortar purchases may be affected by self-conceptualization of hardcore status, even though self-reported hardcore status was not significantly correlated with any other variable listed in the perceptions of hardcore behavior.

The remainder of criteria can be interpreted as illustrating the intensity with which hardcore gamers are perceived to enjoy the medium. They play both competitive and cooperative online games. They have adopted HD technology and play visually colorful games that will take advantage of that technology. They buy games both online and in brick and mortar stores. They consume gaming media and play for hours at a time, not in short bursts. Again, self-reported hardcore status was shown to have little impact on the results for these criteria—the overall model and 13 of the 15 individual criteria were not significantly related to self-reported hardcore status. The only items that were significantly related fall into the category of enjoyment intensity described above: competitive gaming and gaming in HD.

The public availability of Nintendo Channel data was invaluable. The incorporation of truly independent data gives our results more value than some of the best attempts at multiple sampling potentially could. Additionally, the sheer volume of the Nintendo Channel sample sizes ($M = 327{,}818.45$, $SD = 452{,}645.73$) was a rare luxury in justifying the generalizability of our index. Ultimately, the significant, positive correlation between our hardcore scores and the Nintendo Channel hardcore percentage, as well as its large effect size, gives validation to our overall efforts.

Of course, the present research is not without its own limitations that future research can learn from. The results, while relatively clear and informative, may more accurately reflect the respondents' perceptions of hardcore gaming stereotypes as opposed to hardcore gaming as an untainted philosophy. In other words, respondents may have approached the survey instrument as more of a quiz on video game culture and given the answers they felt were the "right" ones. Perhaps the current perceptions are too

convoluted to yield any meaningful understanding and the academic community should seek to reinvent "hardcore" with a new understanding. Thus, a more powerful and ultimately informative future research question might be: "what should be the definition of 'hardcore' in video game culture?"

The benefit of Nintendo Channel access also limited some of the effectiveness of our scales. One such criterion on the hardcore scorecard represented a Galileo finding that self-reported hardcore gamers felt "Nintendo" was further away from "hardcore" than their non-hardcore counterparts. Though this is still an important factor that should remain in the general implementation of the hardcore scorecard, its impact is negated in a data set composed entirely of Nintendo products. Though, the fact that our results still included an evenly distributed hardcore percentage from the Nintendo Channel (M = 50.86, SD = 24.990), and a significant, large, positive correlation with our final hardcore score, illustrates the strength of our method in spite of this possible limitation.

In addition, two items on the scorecard are scored based on researcher judgment: "the game has intimidating protagonists" and "the game has adorable protagonists." Though the distinction between these two concepts is rather easy to identify, it becomes murky when certain protagonists do not fit easily into one category or the other. Furthermore, though all remaining criteria were scored based on direct observation, some, such as those dealing with difficulty and play time, may vary from researcher to researcher. These possible margins of error should be considered and efforts made towards reducing them in future research, perhaps through multiple scorers.

Of the many directions future research could take the current findings, two primary avenues seem most interesting. An obvious next step would be to continue refining the scorecard further and further—maximizing specificity and minimizing margins of error. This process can, and should, include expanding the scope of the scorecard by adding a more complete list of genres and more degrees of play duration. A second avenue would be to evaluate the scorecard's output based on pure face validity. In other words, a follow-up study could take final hardcore scores and present them to gamers/non-gamers and record their reactions. Essentially, this would test the model in the opposite direction—much like coding and then decoding a message. Instead of translating perceptions to a numerical index, future research would evaluate how well the numerical index handles being decoded by (seemingly) consistent perceptions.

Conclusion

Ultimately, the present research can be considered a modest success. The objective was difficult: trying to define that which has no proper definition and, some would argue, like art, simply cannot be defined. As the review of literature illustrated, there are many current paradoxical understandings, for instance, the supposedly casual gamer who plays the supposedly casual *FarmVille*, but plays it 20 hours per week—a typically "hardcore" practice. These exceptions to the rule justify the need for further understanding "hardcore" in video game culture. After all, "the debate is everywhere— in podcasts, forums, even developer commentary on their own games. And when game developers are getting in on it, it's time to worry" (Alexandre, 2012, para. 6).

Even if the present research can only offer an understanding of "hardcore" as a perception instead of in the traditional sense of a cultural segment, should future research want to pursue new terms, the understanding of these perceptions is a valuable start. The studies in the present research have successfully provided a better understanding of what "hardcore" does mean in its cultural context as well as how to evaluate it objectively.

Findings supported the stereotypes that "hardcore" gamers prefer violent, action-packed games with a heavy emphasis on technology (HD graphics, online interactions) and play them for extended periods of time. These perceptions were validated when the hardcore scorecard they informed returned a significant, positive correlation with an independently collected hardcore percentage from large samples. Pulling responses from Nintendo's Wii data was also representative of the overall console gaming population. A survey of 65,931 anonymous users on GameFAQs.com found that the Wii was owned by the largest percentage of the audience (62.53%). In addition, a direct overlap of all three major console audiences was reflected by the largest single response, owning "all three [consoles]" (22.18%) (GameFAQs, 2011).

It is for these reasons that the present research can conclude the overall usefulness of the hardcore scorecard and its important implications for future research. The overall approach addresses the "chicken and egg" issue that has hampered defining "hardcore." Trying to separate hardcore gamers and hardcore games is futile, and ultimately, neither is intrinsically "hardcore." At its root, "hardcore" can temporarily be concluded as nothing more than a perception. Future studies can now work to refine the scorecard or use its findings as a stepping stone in new directions. In the end, a blueprint for minimizing gamer confusion and maximizing game developer/journalist understanding has been identified. These findings render the present research valuable in the midst of an industry and culture experiencing rapid growth and change.

References

Adams, E. (2000, August 1). *Casual versus core*. Retrieved from http://www.gamasutra.com/view/feature/3120/casual_versus_core.php.

Alexandre, C. (2012, January 31). *The hardcore-versus-casual gaming debate needs to end.* Retrieved from http://bitmob.com/articles/terms-gamers-need-to-stop-misusing-casual-and-hardcore.

Bakalar, J. (2007, November 23). *Which game console should you buy?* Retrieved from http://news.cnet.com/8301-17938_105-10365624-1/which-game-console-should-you-buy/ .

Bateman, C. M., & Boon, R. (2006). *21st century game design* (1st ed.). Hingham, MA: Charles River Media.

Durkheim, E. (1915). *The elementary forms of the religious life*. New York: Free Press.

Entertainment Software Association. (2011). *2011 essential facts about the computer and video game industry.* Retrieved from http://www.theesa.com/facts/pdfs/ESA_EF_2011.pdf.

Entertainment Software Association. (2013). *2013 essential facts about the computer and video game industry.* Retrieved from http://www.theesa.com/facts/pdfs/esa_ef_2013.pdf.

G4 Media, LLC. (2008, December 16). Head to head: Brian Cresente and Dan Hsu [Video file]. Video posted to http://www.g4tv.com/videos/35610/head-to-head-brian-crecente-and-dan-hsu/.

GameFAQs. (2011, October 23). *Poll of the day.* Retrieved from http://www.gamefaqs.com/poll/index.html?poll=4499.

Gawker Media. (2011). In *Gawker Media - Kotaku*. Retrieved July 17, 2011, from http://advertising.gawker.com/kotaku/.

Gorman, B. (2009). *USA settles in on top cable network prime-time.* Retrieved from http://tvbythenumbers.zap2it.com/2009/06/16/usa-settles-in-on-top-cable-network-prime-time/20774/.

Jacobs, G., & Ip, B. (2003). Matching games to gamers with quality function deployment. *TQM Business Excellence*, *14*(9), 959–967. Routledge. Retrieved from http://gateway.library.qut.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=anh&AN=11093367&site=ehost-live.

Juul, J. (2010). *A casual revolution : reinventing video games and their players*. Cambridge, MA: MIT Press.

Kim, S. (2001). Proceedings from Game Developers Conference: *Designing web games that make business sense.* San Francisco, CA.

Kirman, B., & Lawson, S. (2009). Hardcore classification: identifying play styles in social games using network analysis. *Lecture Notes in Computer Science*, (September), 246–251. Springer. Retrieved from http://www.springerlink.com/content/6406l27774028432/.

Kuittinen, J., Kultima, A., Niemelä, J., & Paavilainen, J. (2007). Casual games discussion. *Proceedings of the 2007 conference on Future Play Future Play 07* (pp. 105–112). ACM Press. Retrieved from http://portal.acm.org/citation.cfm?doid=1328202.1328221.

McNeilly, J. (2009, March 27). *100 reasons fanboys hate casual games.* Retrieved from http://www.gamesradar.com/100-reasons-fanboys-hate-casual-games/.

NintenDaanNC. (2010, February 8). Nintendo Week 2/8 - Part 2 [Video file]. Video posted to http://www.youtube.com/watch?v=Jk3Vhm-XkTI.

Ring, B. (2011, March 23). *Video interview: Battlefield Play4Free.* Retrieved from http://games.on.net/article/11976/Video_Interview_Battlefield_Play4Free.

Snow, B. (2011, August 17). *Why most people don't finish video games.* Retrieved from http://www.cnn.com/2011/TECH/gaming.gadgets/08/17/finishing.videogames.snow/.

Sterling, J. (2010, August 6). *The Jimquisition: Why you're dumber than casual gamers.* Retrieved from http://www.destructoid.com/the-jimquisition-why-you-re-dumber-than-casual-gamers-180616.phtml.

Tajfel, H. (1970). Experiments in intergroup discrimination. *Scientific American, 223*, 96–102.

Wallace, M. & Robbins, B. (2006). *Casual games white paper.* Retrieved from http://www.igda.org/sites/default/files/IGDA_CasualGames_Whitepaper_2006.pdf.

Woelfel, J., & Fink, E.L. (1980). *The measurement of communication processes: Galileo theory and method.* New York: Academic Press.