Theory & Background

Player typologies have been identified in previous research [7], but the academic literature to date is still emerging. Some of the most often used criteria for creating player groups are therefore background factors, most notably age and gender. There is some evidence that these factors may affect gaming preferences [6, 11]. However, all-encompassing, large categories like these may be too inclusive and miss relevant information because of oversimplification. Consequently, they may fail to scope the full range of motivations of those players who do not conform to such demographic segmentations.

Another often used categorization in everyday conversations between gamers and in the industry is the division between hardcore and casual gamers. At best, they have remained fuzzy concepts. Casual gamers, for example, may refer to both players who play "casual games" as well as to those who "play casually", and everything in-between [8]. Notions have also been made that some

Player Types: What, Why and How

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Abstract
The following extended abstract describes a research plan for and preliminary findings of a dissertation thesis on player types. The described four studies aim to answer to questions of what player types are, why players should be categorized into different groups, and how this categorization should be done.

Author Keywords
Player typology; player types; player categorization; gamers; gamer types; playing experience; psychophysiological; emotion; motivation

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K.8.0. General: Games

Introduction
One of the keynote speakers of last year's ACM CHI PLAY conference noted that the field of gaming research seems to be overrepresented by issues around *"violence, education, addiction, gamification, physical health, and a handful of other topics*", also remarking that studies that would be of direct interest to game developers and players themselves are missing [10]. My dissertation work aims to ameliorate this situation by focusing on gamers, and more specifically, the way player types are created.

casual gamers (i.e. casual game players) are very hardcore about their gaming [4]. Old-fashioned concepts like these should be either clarified and backed up with data or debunked if not useful.

Besides background factors, classification of players is often based on game type and genre selections (e.g. first-person shooter players vs. role-playing game players), or the preferred platform for playing (e.g. PC gamers vs. console gamers). These categorizations tend to be quite mechanistic, but focusing on game dynamics afforded by different games and how much players prefer them could prove fruitful for both game designers and players themselves. While mechanics can not tell much about internal motivations of players, and aesthetics may be hard to tie into actual game contents, game dynamics preferences can offer insight into what players actually want from games.

Some player typologies are based on actual in-game behavior [3, 5, 1]. These categorizations utilize telemetry data, log

Objectives

The aims of this dissertation work are to 1. Advance knowledge about player types by creating a new typology based on both liked and disliked game dynamics, 2. Examine whether self-reported playing preferences have an effect on emotional responding to games that are either in line or discordant with said preferences, e.g. validate player types through experimental methods, 3. Explore and compare the profiles of the least experienced players and those who play the most in order to find out what separates these groups in terms of motivations, playing preferences and psychological needs, and 4. Investigate the fluidity of playing preferences when players become more experienced in gaming. The dissertation thesis will consist of the following studies.

Research Plan

Study 1: Creating an overarching player typology [13] *(published)*

700 contemporary digital games across many genres were explored to identify game dynamics, e.g. player–game interaction modes. Next, 1717 respondents answered a survey on their preferences for these dynamics. Based on their answers, five game dynamics preference categories were revealed through exploratory factor analysis: 'Assault', 'Manage', 'Journey', 'Care', and 'Coordinate'. Further cluster analysis of respondents (based on the game dynamics categories) revealed seven player types: 'The Mercenary', 'The Companion', 'The Commander', 'The Adventurer', 'The Patterner', 'The Daredevil' and 'The Explorer'. These results indicate that player typologies should include both preferred and undesired game dynamics for each category and look at preferences as a whole. This study also contributes a new model that is complementary to player behavior studies (how players play) and player motivation studies (why players play). It offers insight into what meaningful content players wish games would include, something that focusing on mechanics or aesthetics alone would leave out.

Study 2: Characterizing gamers based on playing hours (*manuscript in preparation)*

A characterization of those who play the most and the least was conducted because both psychological features as well as preferences for game contents may change with increased experience, or be different from the start. Players (N=2,257) answered a survey on playing preferences and motivations. They were also asked about their psychological well-being both in life in general and when imagining they were playing. Respondents were divided into four groups based on playing hours: non-players (<1hour/week), light players (<1hour/day), regular gamers (<4hours/day), and heavy gamers (>4 hours/day). Heavy gamers showed heightened preferences for playing strategy and role-playing games, as well as a predilection for multiplayer online games with interaction with other players, the opposite of other player groups. They also allocated less of their overall playing time for problem-solving, platformer, and driving games than did the other groups. All player groups preferred free mobile games, including the heavy gamers. In terms of playing motivations, immersion and interest in games seemed to be key motivation types separating gamers from non-gamers, whereas killing time was a more characteristic type of motivation for non-players. Those who played more preferred both positive and negative

information or researchers' observations of players' actions. Even these categorizations can be problematic, however. Behavioral observations are usually based on only one game or at least a set genre, which limits the range of behaviors that are possible. Some of the typologies are also based on researchers' interpretations of behavior, which might not necessarily be in accordance with what the players are thinking of. Players' motivations for doing things are not explored nor are they asked how they would like to play in the first place. Therefore in-game behavior might not be a sign of players wanting to do something, but instead be a side effect of the game mechanics available.

Playing preferences and player typology can also be approached through studying players' internal motivations and personality differences [2, 9, 12, 14, 15, 16]. The generalization of personality factors to gaming situations is debatable, but self-reported motivations may offer novel ideas that game developers could use in designing better content.

emotions during gaming more than those who played less. Interestingly, heavy gamers showed lowered feelings of self-efficacy, vitality, and empowerment in life in general in comparison to respondents who played less. However, they reported psychological benefits from gaming by showing an increase in these measures when asked to imagine they were playing. Other player groups did not report such gaming-related benefits. The results indicate that for those who spend long hours playing, video gaming can be a positive and rewarding activity that may help regulate feelings that are relevant to psychological well-being. They also demonstrate that there are marked differences in genre, motivation and emotional preferences between players with different playing hours.

Study 3: Validating player types by exploring emotional reactions to a liked/disliked game (*data gathered)*

Figure 1 illustrates the designs of studies 3 and 4. In the third study, the aim was to validate self-reported playing preferences in a laboratory experiment. Valuable information about emotional responses of different player types was also explored. Participants (N=24) first responded to a survey containing the game dynamics identified in Study 1. Participants who were active video game players (>15 hours/week) with a particularly high preference or dislike for aggressive gaming were then invited to the laboratory to play a well-known first person shooter game (Call of Duty: Modern Warfare). Aggression preference was indicated by a high or low sum score for items belonging to the 'Assault' factor identified in Study 1. In the experiment, participants' facial muscle activation, skin conductance and heart rate were registered. These registrations were made during a control resting period, during playing as well as during watching video material of the same game. The players were also given mood and alertness questionnaires after each situation to monitor possible effects of resting/playing/watching a video via self-report as well. The main point of interest in this study is to explore how playing affects emotional arousal, alertness and mood, e.g. to scope emotional reactions to the game. Furthermore, this study strives to investigate whether the player types of the participants identified in study 1 affect these measures, e.g. whether playing preferences have an actual effect on emotional reactions, or whether certain types of games induce similar emotions in all participants.

Study 4: Investigating change in playing preferences and emotional reactions when playing experience increases (*planned)*

Participants (N=30) with either particularly high or low preferences for aggressive games (as indicated by responses to items belonging to the 'Assault' factor identified in Study 1) are invited to a laboratory experiment. The participant group consists of non-players or very light players, who will take part in an intervention in which they are given a gaming console and a selection of action video games to play at home. Participants are asked to play at least half an hour daily for a time period of four weeks. Participants will be tested in a laboratory setting similar to Study 3 before and after the intervention, and they will fill out the gaming preference questionnaire at both time points. The aims of this study are to 1. Explore whether emotional reactions change if playing time is increased, and 2. Investigate how fluid player preferences and player types are, e.g. whether they are prone to change when playing time increases.

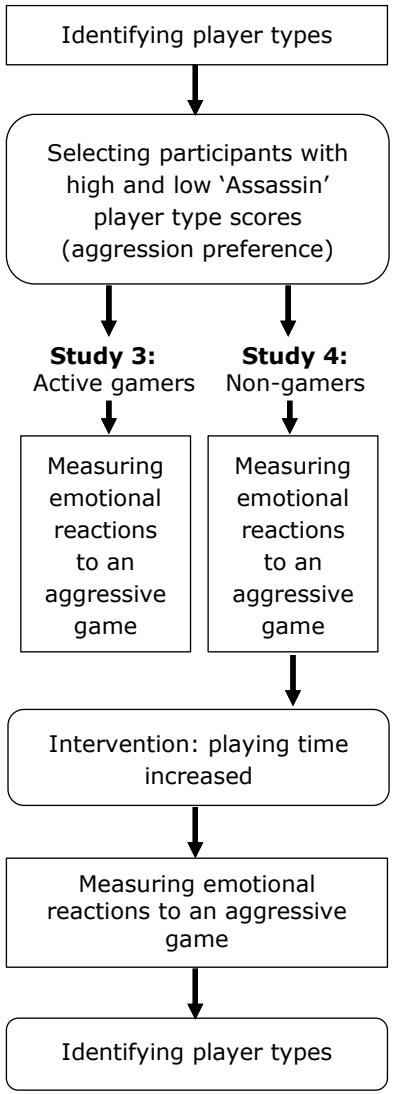

Figure 1: Flow of studies 3 & 4.

References

[1] Iftekhar Ahmed, Amogh Mahapatra, Marshall Scott Poole, Jaideep Srivastava, and Channing Brown. 2014. Identifying a Typology of Players Based on Longitudinal Game Data. In *Predicting Real World Behaviors from Virtual World Data*, Muhammad Aurangzeb Ahmad, Cuihua Shen, Jaideep Srivastava, Noshir Contractor (Eds.). Springer International Publishing, Cham, Switzerland, 103-115. DOI: 10.1007/978-3-319-07142-8_7

[2] Chris Bateman, Rebecca Lowenhaupt, and Lennart E. Nacke. 2011. Player typology in theory and practice. In *Proceedings of the 2011 DiGRA International Conference: Think Design Play* (DiGRA '11).

[3] Richard Bartle. 1996. Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD research*, 1 (Jun. 1996), 19.

[4] Mia Consalvo. 2009. Hardcore casual: game culture Return(s) to Ravenhearst. In *Proceedings of the 4th International Conference on Foundations of Digital Games* (FDG '09). 50-54. DOI: 10.1145/1536513.1536531

[5] Anders Drachen, Alessandro Canossa, and Georgios N. Yannakakis. 2009. Player modeling using self-organization in Tomb Raider: Underworld. In *2009 IEEE Symposium on Computational Intelligence and Games* (CIG 2009). 1-8. DOI: 10.1109/CIG.2009.5286500

[6] M. D. Griffiths, M. N. O. Davies, and D. Chappell. 2004. Online computer gaming: a comparison of adolescent and adult gamers. *Journal of adolescence*, 27, 1 (Feb. 2004), 87-96. DOI: https://doi.org/10.1016/j.adolescence.2003.10.007

[7] Juho Hamari and Janne Tuunanen. 2014. Player types: A meta-synthesis. *Transactions of the Digital Games Research Association*, 1, 2, 29–53.

[8] Jussi Kuittinen, Annakaisa Kultima, Johannes Niemelä, and Janne Paavilainen. 2007. Casual games discussion. In *Proceedings of the 2007 conference on Future Play* (Future Play '07). 105-112. DOI: 10.1145/1328202.1328221

[9] Nicole Lazzaro. 2004. Why we play games: Four keys to more emotion without story. (March 2004). Retrieved June 22, 2017 from http://xeodesign.com/xeodesign_whyweplaygames.pdf.

[10] Jamie Madigan. 2016. Things I Wish Game Researchers Would Do (Or Do More): A View from an Occasional Scientist and Hardcore Gamer. In *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play* (CHI PLAY '16). 1-1. DOI: https://doi.org/10.1145/2967934.2967936

[11] Melissa Terlecki, Jennifer Brown, Lindsey Harner-Steciw, John Irvin-Hannum, Nora Marchetto-Ryan, Linda Ruhl, and Jennifer Wiggins. 2011. Sex differences and similarities in video game experience, preferences, and self-efficacy: Implications for the gaming industry. *Current Psychology*, 30, 1 (Mar. 2011), 22-33. DOI: 10.1007/s12144-010-9095-5

[12] Fan-Chen Tseng. 2011. Segmenting online gamers by motivation. *Expert Systems with Applications,* 38, 6 (Jun. 2011), 7693-7697. DOI: https://doi.org/10.1016/j.eswa.2010.12.142

[13] Jukka Vahlo, Johanna K. Kaakinen, Suvi K. Holm, and Aki Koponen. Digital Game Dynamics Preferences and Player Types. *Journal of Computer-Mediated Communication*, 22, 2 (Mar. 2017), 88-103. DOI: 10.1111/jcc4.12181

[14] Leo Sang-Min Whang and Geunyoung Chang. 2004. Lifestyles of virtual world residents: Living in the on-line game "Lineage". *CyberPsychology & behavior*, 7, 5 (Oct. 2004), 592-600. DOI: https://doi.org/10.1089/cpb.2004.7.592

[15] Nick Yee. 2006. Motivations for Play in Online Games. *Journal of CyberPsychology & behavior*, 9, 6 (Dec. 2006), 772-775. DOI: https://doi.org/10.1089/cpb.2006.9.772

[16] Nick Yee, Nicolas Ducheneaut, and Les Nelson. 2012. Online gaming motivations scale: development and validation. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '12). 2803-2806. DOI: 10.1145/2207676.2208681