Literature Review:

Discovering and Predicting Video Game Experiential Genres

Course Project of MACS 30200

Chih-Yu Chiang

Project Introduction <small>(not part of the literature review)</small>

Many products today find their way into diverse consumer pools based on their objective quantifications—the horsepower of a car, the specifications of a computer, and the durability of a certain kind of clothing. But it becomes far harder to evaluate objects when their attributes are unquantifiable, or where some element of subjectivity is involved. Movies, books, and video games fall into this category— what I call experience-intensive products.

Through this research, I intend to develop a new classification scheme which describes products by their experiential genres, thus injecting a new perspective to the designing of experiential products: one based on the emotions, sensations, and memorable events supplied during the products' consumption experience.

In this research, I demonstrate a classification scheme with video games. Every video game is in itself a contained local landscape that structures the world of the player. Within it, there are social structures, e.g. multiplayer modes, customs and various modes of interaction with non-playable characters and the like; cultural systems, e.g. languages, customization choices; and material resources: in-game currency, the internal environment of the game. Players' interaction with the world forms their video game experience, which is only partly captured by role-playing, first-person shooter, and others, the traditional video game genres.

I combine survey and text analysis of game reviews written by experts to extract psychological motives—the motives propel players' interaction with video game worlds and are brought about by in-game experiences. I will then use those extracted motives for classifying video games into experiential genres via SVM and Neural Nets.

Experience and Experiential Product

At the heart of this research is video game experience—the *experience* accrued when playing video games. Defined by The Oxford English Dictionary, *experience* is "the actual observation of events" and "the state or condition being a subject is consciously affected by them (the events)" (OED Online, 2017). The definition was added by some scholars, where the *events* have to be meaningful and actually encountered by the subjects to form an experience (Hassenzahl, 2011). Some others further stressed the meaning of a *state*, which has to be generally unphysical, such as fantasies, feelings, and fun (Holbrook & Hirschman, 1982). In the field of product design, among different types of states, *affect* is particularly stressed. Several research tackled on the issues such as how to evoke proper emotions during users' interaction with a product (Forlizzi, Disalvo, & Hanington, 2003; Havlena & Holbrook, 1986; Ho & Siu, 2012). Applying the definition in video game context, in this research, video game experience is thus

described as a subject's interaction with events in video game worlds, along with the mental states—emotions, feelings, memorable moments, and others—aroused with the interaction.

For video games and other products dominantly emphasize on their consumption experience—the experience occurring during their consumption—scholars recognize them as the *experiential products* (Cooper-Martin, 1991). This concept can be linked back to products' experiential attributes. The experiential attributes distinguish themselves from utilitarian ones (Zeithaml, 1988); during product consumptions, experiential attributes are the symbolic, hedonic, and aesthetic natures of a product (Holbrook & Hirschman, 1982)—the natures lead to a pleasure of product use, such as feeling confident, secured, and exciting by the users (Jordan, 1998). Emphasizing experiential attributes, experiential products developed several distinct characteristics. Experiential products stress on a fluent sensory and affective information delivery (Joško Brakus, Schmitt, & Zhang, 2014); in contrast with utilitarian products, they enlist different paths of customer evaluation, which influences product judgment of the customers (Brakus, Schmitt, & Zhang, 2008). Indeed, for experiential products, customer satisfaction is correlated to their entire consumption experience, rather than single attributes or separate consumption stages (Bassi, 2010). Some typical examples of experiential products are films (Bassi, 2010; Cooper-Martin, 1991), music (Lacher, 1989), and video games (Tschang, 2005).

In the eyes of some scholars, video games are purely designed experiences (Squire, 2006). During their consumption, they provide little to none physical rewards. Instead, they create virtual events to interact with the players, stimulating player mental states such as a sense of belonging to a virtual warrior guild or a friendship during virtual cooperative military operations. In general, a process of playing video games can be deemed as a course of attaining gratification, that is, positive experiences (Grodal, 2000). These pleasing experiences are empirically shown to be associated with players' game preference and amount of time they are willing to play the games (Johnson, Gardner, & Sweetser, 2016; Sherry, Greenberg, & Sherry, 2006; Zeigler-Hill & Monica, 2015), a relationship echoes experience's important role in video games as a type of experiential products. In fact, this relationship is formed because, through those experiences, players fulfill basic human psychological needs (Ryan & Deci, 2000). This satisfaction of needs serve as psychological motives and motivates individuals' continuous consumption in those products (Hassenzahl, 2008)—the very reason why people play video games.

Psychological Motives

Motives are the motor of behaviors (Fiske, 2004); *psychological motives* are motives corresponding to psychological needs beyond basic life maintenance of food, sleep, and sex, and are what delivered in video game experience and motivate video game use.

Conventionally, there were no clear distinctions between psychological motives and physical ones. Psychologists see psychological motives, along with physical motives, derived from human's innate needs of survival. Inheriting Freud's drive theory (1920), McDougall proposed eighteen *instincts*, including maternal instinct, comfort, sex, hunger, curiosity, etc. These instincts were believed to have the power of driving individual behaviors (McDougall, 1932). Maslow dealt the instincts as *human basic needs* and assumed a hierarchical relationship between them (Maslow, 1943). From low level to high, they are physiological needs, safety, love/belonging, esteem, and eventually self-actualization; higher level needs are sought only if lower level ones are fulfilled. In addition to the original Maslow needs, transcendent needs are added by Datta, which illustrate the human desires for public goods (Datta, 2013). On top of that,

Alderfer proposed ERG theory that emphasized the human needs of existence, relatedness, and growth, similar to Maslow's, but interrelated and without a strict hierarchy structure (Alderfer, 1969).

From another perspective, personality psychology sees psychological motives from personal attributes, reflecting the strength and weakness of a person. This perspective can be traced back to Plato's theory of soul. The human soul was thought to consist of tripartite components, the appetites, the spirited, and the mind (Woods, 1987). These three components are considered to develop into human needs in seeking physical comfort and pleasure, facing challenges and pursuing honor, and searching conscious awareness for truth, correspondingly (Cooper, 1984). More recently, Murray proposed five categories of *psychogenic needs*, of ambition, materialism, power, affection, and information, each includes physical and psychological sub-categories. For example, under the information need, there are exposition needs of delivering information to others, which is more physically prone, and the cognizance needs of asking questions and finding answers, more psychologically prone (Murray & Kluckhohn, 1948). Though argued incomplete (Xu, Mellor, Xu, & Duan, 2014), Murray's needs formed the essentials of later personality theories (Costa, Jr & McCrae, 1988).

On the other hand, social psychologists turned their main focus on the psychological part of motives, which are derived from people's need for social attachment (Baumeister & Leary, 1995). McClelland described three major needs of human beings, the need for achievement, power, and affiliation (McClelland, 1987), which were the basis of the later models such as Self-Determination Theory and Fiske's core motives. Fiske contributed a comprehensive model of *core motives* of human beings, including the root motive of belonging, which is human's yearning for strong, stable relationship, with four other motives derived on it: understanding, for shared meaning and prediction with other individuals; controlling, for outcomes contingent on behaviors; self-enhancing, for the sense of self-worthiness and improvability; and trusting, for being mutually benign with others (Fiske, 2004). To continue, Fogg proposed three *core motivators*, pleasure/pain, hope/fear, and social acceptance/rejection as part of his FB model of persuasion (Fogg, 2009). Lastly, Deci & Ryan (2000) proposed Self-Determination Theory (SDT) that identified three basic human psychological needs, including autonomy, the need to have flexibility and control over processes and outcomes, competence, to feel effective when carrying out an activity, and relatedness, to make meaningful connections with others.

In this research, SDT is applied as a primary lens in identifying experiential genres. For one thing, in the last decade, it was empirically verified and widely employed in the field of video game research (Przybylski, Rigby, & Ryan, 2010; Ryan, Rigby, & Przybylski, 2006; Yee, 2006); for another, in general, these various perspectives built upon and overlapped each other. For example, SDT and ERG theory's relatedness need, Maslow's needs of love/belonging, FB model's motivator of social acceptance, McClelland's need of affiliation, and Fiske's motives of belonging and trusting all point to the same human craving of getting along with others and belonging to social groups. While primarily applying SDT, at the same time, I do not rule out other perspectives. In fact, besides overlapping, the perspectives also complement each other. One example is Murray's needs of aggression and sex, which are not covered in SDT but are commonly observed in video game settings.

Video Game Experience and the Motives

Since the 1980s, psychological motives are essential in video game experience research. Various issues were discussed: motives for different gender to master and complete video games (Morlook, Yando,

& Nigolean, 1985); self-efficacy and competence's role in player in-game performance and game enjoyment (Klimmt & Hartmann, 2006; Trepte & Reinecke, 2011); the pleasure of control in video games (Grodal, 2000); social factors on player experience (Vella, 2016); and self-esteem in motivation and enjoyment of playing video games (Birk, Mandryk, Miller, & Gerling, 2015).

A more inclusive view was provided by Ryan, Rigby, and Przybylski, who identified video games' motivational pulls, based on the three basic needs proposed in SDT (Przybylski et al., 2010; Ryan et al., 2006). The motivational pulls, as game experience dimensions, were since discussed extensively through traditional surveys (Quick, Atkinson, & Lin, 2012; Yee, 2006), surveys with open-ended questions (Oswald, Prorock, & Murphy, 2014), and player interviews (Poels, de Kort, & Ijsselsteijn, 2012; Wan & Chiou, 2006). Based on their works, researchers examined relationships between psychological motives and video game genres, as for massively-multiplayer online games (Billieux et al., 2013; Ducheneaut, Yee, Nickell, & Moore, 2006; Fuster, Chamarro, Carbonell, & Vallerand, 2014), sport games (Kim & Ross, 2006), and dancing games (Gao, Podlog, & Huang, 2013). Some others focused on player motives of specific platforms, as for web browsers (Klimmt, Schmid, & Orthmann, 2009) and smartphones (Mccauley, 2014). Psychological motives' association with player traits were investigated: players of different demographic backgrounds (Greenberg, Sherry, Lachlan, Lucas, & Holmstrom, 2010; Nick Yee, 2006), e-life styles (Kim, Park, Kim, & Moon, 2002), and personalities (Johnson, Wyeth, Sweetser, & Gardner, 2012; Quick et al., 2012) tend to seek for different types of motives and, therefore, express different video game preferences.

While relevant research is abundant, in video game experiences and corresponding psychological motives, our understanding is still limited. I deem the problem is threefold. First, in early research, video games are examined based on their traditional game genres (e.g. Billieux et al., 2013; Fuster et al., 2014; Gao et al., 2013; Kim & Ross, 2006) and platforms (Klimmt et al., 2009; Mccauley, 2014), which do not describe well the experiences players can have in the games. For example, both first-person shooter games, *Counter Strike* stresses on team cooperation while *Half-life* provides strong story-telling elements. This difference leads to distinct in-game experiences and psychological motives of the two games. The discrepancy between video game experiences and video game genres was empirically displayed in Park, Song, and Teng's research, where player personality predicts players' preference in psychological motives, such as achievement and relationship, but not their preference in game genres (Park, Song, & Teng, 2011).

Second, most, if not all, of the early research based on methods of surveys and interviews. In traditional surveys, questions and answer options are limited to researchers' decision. This limitation could harm research's completeness especially for those still in their exploratory phase and without an overarching theory, such as studies in video games' motivational pulls as their experience dimensions (Oswald et al., 2014; Poels et al., 2012; Quick et al., 2012). On the other hand, open-ended questions and interviews suffer from the fallacy that they have to assume the customers know well the experience and the psychological motives behind. "A lot of times, people don't know what they want until you show it to them," as quoted from Steve Jobs (Mui, 2011), the answers researchers seek for from the customers are often tacit and cannot be recognized by ordinary customers without specific training and sufficient cognitive processing. The customers' incapability of responding to the questions can impair the analyses based on these answers. Lastly, our current knowledge of video game motives bleeds due to its lack of linkage to specific video games and to each design elements in those games (Deterding, 2011)—what each game provides, what motives composite their experience, are still without an objective framework to assess.

To provide an alternative to traditional video game genres, this research aims at defining video games' experiential genres based on the psychological motives they deliver. For more complete and objective results, the psychological motives are identified based on the entire English lexicon and computational content analysis extracting experience of specific video games from expert review text, rather than restricted surveys and interviews. Finally, this research develops a model, which predicts experiential genres of each game, describing and linking each video games to the psychological motives and experiences they delivered.

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